More than Waterproofing
Kemper System America, Inc. reserves the right to change its materials, installation methods and requirements for warranty issuance at any time. Refer to the Kemper System America, Inc. website, [www.kempersystem.net](http://www.kempersystem.net), for the most current, updated information.

| 1 | Introduction  
Policy Statement |
| 2 | General Applications  
Short-form description of the full range of standard applications, including roofing, waterproofing and traffic surfacing |
| 3 | Application Procedures  
Application procedures, application tips, tie-in, repair, and patching guidelines |
| 4 | Product Information  
Material description, use, storage, and application information |
| 5 | Guide Specifications  
Typical 3-part system specifications, including general product information, materials, and application procedures |
| 6 | Standard Details  
Architectural renderings of installation details such as edge termination, flashings, penetrations, drains, expansion joints, etc. |
| 7 | Codes & Approvals  
Quality assurance certificates |
| 8 | Chemical Resistance  
Specific information for common chemicals |
| 9 | Warranties  
Details on system warranties |
Kemper System America, Inc. (KSA) manufacturers and distributes reinforced, cold liquid-applied waterproofing products. These products require integration into the design and construction process. Design and construction of any waterproofing or roofing system is typically accomplished through the input of the following team members, each of whom has specific expertise and related responsibilities:

**Material Manufacturer:** Material manufacturing; material and installation technology; warranty; 
**Specifier/Owner's Representative:** Evaluation of existing conditions; scope of work; design and specifications; monitoring of installation; 
**Contractor:** Material and equipment procurement; acceptance of existing conditions; installation expertise and manpower; 
**Building Owner:** End user; identification of functional requirements; budgetary control; building maintenance and integrity.

The general requirements and guide specifications within this document provided by KSA contain the latest information relating to the use and application of the products manufactured by KSA. They have been prepared and are offered as a general guide to assist architects, engineers, specifiers, contractors and owners in the design and application of the membrane products. As each project is unique, these recommendations are not intended as absolute. Regional or specific job variances and building code regulations may take priority in some cases; therefore, each project should be considered individually, with specifications tailored to the specific project conditions and consistent with good application practices.

For installation and use requirements and guide specifications of insulation, auxiliary components, structural deck and other products not offered or sold by KSA, contact the respective manufacturer or refer to published products and installation requirements and/or recommendations.

KSA as a manufacturer and distributor is not involved in the design or construction of buildings or structures. Furthermore, KSA has no control over the designer's decisions, changes or substitutions, or over the solicitation and issuance of contract documents containing specifications for KSA products, developed independent of the requirements, limitations and recommendations herein. KSA will under no circumstances accept responsibility for the performance of its products when damage to its products result from improper building design, deficiencies in the building structure, systems and components, vapor drive/moisture content within substrate and deck materials, vehicular and pedestrian traffic, or other similar conditions that are beyond the control of KSA.

Since exemplary workmanship in applying a reinforced waterproofing system is essential, qualified supervision during the installation of the various system components should be exercised. KSA recommends that the owner retain the services of a 3rd party inspector if full-time supervision of the system installation is required.

Good design and installation practices are the key to a functional waterproofing system. The contractor bears sole responsibility for the quality of the application and, with the specifier/architect/engineer, selection of the system components. KSA is dedicated to the promotion of good installation practices, and generally endorses the workmanship recommendations of the National Roofing Contractors Association (NRCA), the Sheet Metal Contractors Association (SMACNA), and related organizations.

KSA expressly disclaims any responsibility for the performance of surfacing materials, whether offered or sold by KSA or by others, including coatings, aggregate finishes, and non-warranted traffic surfacings. KSA considers all surfacing materials to be wearing surfaces and, by definition, in need of periodic maintenance, occasional repair, and eventual replacement.

KSA expressly disclaims any responsibility for the manner and method of design, plan, installation or any other aspect of construction of the waterproofing system other that is extended by expressed warranty.

KSA provides a warranty to the Owner for its waterproofing products in accordance with the terms and conditions of the Warranty. Changes to the warranty documents can only be effected by a written addendum, bearing the signature of an authorized officer of KSA.

Waterproofing is a complex and dynamic task, where change is a constant concern. Therefore, the waterproofing team is advised and urged to review current materials published by the various industry associations, institutes and organizations, including, but not limited to the following:

- **NRCA** (National Roofing Contractor Association)
- **SPRI** (Sheet Membrane and Component Suppliers to the Commercial Roofing Industry)
- **SMACNA** (Sheet Metal and Air Conditioning Contractor's National Association)
- **ARMA** (Asphalt Roofing Manufacturers Association)
- **NIST** (National Institute of Standards and Technology)
- **ASTM** (American Society for Testing and Materials)

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (210) 767-4304 | inquiry@kempersystem.net
**TABLE OF CONTENTS**

**ROOFING MEMBRANE SYSTEM**

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEMPEROL® 2K-PUR</td>
<td>Polyurethane membrane system</td>
</tr>
<tr>
<td>KEMPEROL® REFLECT 2K FR</td>
<td>Polyurethane reflective membrane system</td>
</tr>
<tr>
<td>KEMPEROL® AC</td>
<td>Polymethyl Methacrylate (PMMA) membrane system</td>
</tr>
</tbody>
</table>

**WATERPROOFING MEMBRANE SYSTEM**

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEMPEROL® 2K-PUR</td>
<td>Polyurethane, membrane system</td>
</tr>
<tr>
<td>KEMPEROL® AC</td>
<td>Polymethyl Methacrylate (PMMA) membrane system</td>
</tr>
<tr>
<td>KEMPEROL® V210M/BRM</td>
<td>Polyester membrane system</td>
</tr>
</tbody>
</table>

**TRAFFIC COATING SYSTEM**

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEMPERDUR® TC</td>
<td>Polyurethane Traffic Coating system</td>
</tr>
<tr>
<td>KEMPERDUR® AC</td>
<td>Polymethyl Methacrylate (PMMA) Traffic Coating system</td>
</tr>
</tbody>
</table>

*NOTE: SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.*
BASIC USE
The KEMPEROL® 2K-PUR, Polyurethane, membrane system is intended for use in roofing applications where an “odor-free” application is of paramount importance.

Typical applications include: green, white, and blue roofing, recover roofing, insulated roofing, IRMA roofing, and metal recover roofing.

PRODUCT DESCRIPTION
The Kemperol 2K-PUR roofing system is a fully reinforced, cold liquid-applied membrane system.

The Kemperol 2K-PUR system is based primarily upon advanced polyurethane, epoxy, and acrylic technology. Depending on the substrate, the primer component of the system is either a two-component epoxy or urethane. The membrane and flashing resin components of the system are two-component urethane. Depending on application, a two-component epoxy surfacing is applied when alkalinity resistant or adhesion key surfacing is required. A decorative urethane or acrylic finish can also be applied as either a smooth color coating or a textured aggregate surfacing.

The Kemperol 2K-PUR system includes the following components:
- Kempertec EP, EPS, D or R Primer
- Kemperol 2K-PUR Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kempertec EP Alkalinity Surfacing (If Required)
- Kemperdur DEKO 2KS-FR Finish or BSF-R Finish (If Required)

The Kemperol 2K-PUR membrane system components average under 10 g/l VOC with a non-solvent-based option.

TECHNICAL ADVANTAGE
The Kemperol 2K-PUR “odor-free” system is suitable for exterior applications where absence of odor during application is critical.

The Kemperol 2K-PUR system is exceptionally durable, reliable, and long-lasting, and has a combination of physical properties that makes it ideal for an exceptionally wide range of applications.

Unlike many other roofing systems, the Kemperol 2K-PUR system incorporates flashings that are made of the same materials as the roofing membrane itself, essentially creating a seamless, self-terminating monolithic membrane that readily adapts to the contours of the substrate.

The Kemperol 2K-PUR system bonds directly to the substrate, eliminating the possibility of water moving laterally beneath the roofing membrane. The system eliminates seams, pitch pockets, metal sleeves and termination bars, which are the locations where most leakage occurs.

Kemperol 2K-PUR bonds tenaciously to all common construction materials including concrete, CMU block, brick, wood, stainless steel, copper, galvanized steel, aluminum, cast iron, glass, fiberglass, cement board, treated gypsum board, and rigid PVC. The Kemperol 2K-PUR system can be used to transition from one material to another without need of intermediate separation flashings.

TYPICAL ASSEMBLIES

STANDARD ROOFING ASSEMBLY

INSULATED ROOFING ASSEMBLY

IRMA ROOFING ASSEMBLY

GREEN/LANDSCAPED ROOFING ASSEMBLY
Kemperol 2K-PUR is resistant to UV exposure, is root and rot resistant, and resists degradation by most oils, grease, and other common chemical substances. In addition, Kemperol 2K-PUR is unaffected by standing water and ice, and can be left submerged indefinitely.

**INSTALLATION OUTLINE**

*Refer to the Kemperol Technical Manual for Complete Installation Information.*

- **Substrate Preparation:** Ensure that the substrate is clean and dry. Remove all contaminants and existing coatings from all surfaces to allow proper adhesion of the Kemperol system. Roughen all metal surfaces by grinding.

- **Substrate Repair:** Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

- **Temporary Roof/Vapor Retarder:** As required, install a layer of mineral-surfaced base sheet to the structural deck.

- **Insulation/Cover Board:** For insulated assemblies, install approved isocyanurate foam insulation/cover board to the structural deck, either with urethane foam adhesive or mechanical fasteners.

- **Primer:** Apply Kempertec EP/EP5 epoxy-based primer to concrete and masonry substrates. Apply Kempertec D/R urethane-based primer to metal and wood substrates. Allow to fully cure.

- **Membrane:** Install Kemperol 2K-PUR membrane and flashing system to primed surfaces. All moving cracks and joints between plywood, insulation and cover boards are to be stripped in prior to application of the full system.

- **Surfacing:** For all applications where concrete or other cementitious overburden is to be installed, apply Kempertec EP/EPS primer over the entire area to be covered, and broadcast Kemperol Surfacing sand into the wet primer at 50 lbs/100 ft².

- **Coating:** For applications where a colored or reflective coating or aggregated surfacing is desired, apply Kemperdur DEKO 2KS-FR, or BSF-R Finish.

- **Overburden:** For IRMA and green/landscaped assemblies, install extruded polystyrene insulation, drainage board, concrete pavers, water retaingage mat, soil/growing media, plantings, or other specified and approved overburden materials.

All Kemper System America, Inc. (KSA) products are intended for professional use only.

**WARRANTY INFORMATION**

KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (20) years.

**TECHNICAL AND SALES SUPPORT**

KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call 1-800-541-5455, or visit our website at www.kempersystem.net.

All information and statements contained herein are believed to be accurate, but Kemper System America, Inc. (KSA), its agents and/or affiliates make no warranty with respect thereto, including but not limited to any results to be obtained or the infringement of any proprietary right. Improper and unauthorized use or application of such information or statements or the material or systems described herein is at user’s sole discretion and risk, and consequently user acknowledges that KSA shall bear no responsibility or liability for same. Nothing herein shall be construed as a license of or recommendation for use which infringes any proprietary right. All sales are subject to KSA’s Standard Terms and Conditions of Sale, including but not limited to its Limited Warranty.
BASIC USE
The KEMPEROL® REFLECT 2K FR, Polyurethane, reflective membrane system is intended for use in roofing applications where an "odor-free" reflective application is of paramount importance. Typical applications include: Cool roofing, recover roofing, insulated roofing, and metal recover roofing.

PRODUCT DESCRIPTION
The Kemperol REFLECT 2K FR is a cold liquid-applied, fully reinforced, highly reflective, fire rated Cool Roof membrane system.

The Kemperol REFLECT 2K FR system is based primarily upon advanced polyurethane and epoxy technology. Depending on the substrate, the primer component of the system is either a two-component epoxy or urethane. The membrane and flashing resin components of the system are two-component urethane. Depending on application, a two-component epoxy surfacing is applied when alkalinity resistant or adhesion key surfacing is required.

The Kemperol Reflect 2K FR system includes the following components:
- Kempertec EP, EPS, D or R Primer
- Kemperol Reflect 2K FR Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kempertec EP Alkalinity Surfacing (if required)

The Kemperol 2K-PUR membrane system components average under 10 g/l VOC with a non-solvent-based option.

TECHNICAL ADVANTAGE
The Kemperol Reflect 2K FR “odor-free” system is suitable for exterior roofing applications where a reflective and fire-rated assembly with the absence of odor during application is critical.

The Kemperol Reflect 2K FR system is exceptionally durable, reliable, and long-lasting. The system has been tested and is listed by Cool Roof Rating Council (www.coolroofs.org). Kemperol Reflect 2K FR boasts an initial SRI value of 110.

Unlike many other roofing systems, the Kemperol Reflect 2K FR system incorporates flashings that are made of the same materials as the roofing membrane itself, essentially creating a seamless, self-terminating monolithic membrane that readily adapts to the contours of the substrate.

Kemperol Reflect 2K FR bonds tenaciously to all common construction materials including concrete, CMU block, brick, wood, stainless steel, copper, galvanized steel, aluminum, cast iron, glass, fiberglass, cement board, treated gypsum board, and rigid PVC. The Kemperol Reflect 2K FR system can be used to transition from one material to another without need of intermediate separation flashings.

TYPICAL ASSEMBLIES

STANDARD ROOFING ASSEMBLY

INSULATED ROOFING ASSEMBLY

IRMA ROOFING ASSEMBLY

GREEN/LANDSCAPED ROOFING ASSEMBLY
Kemperol Reflect 2K FR is resistant to UV exposure, color stable, is root and rot resistant, and resists degradation by most oils, grease, and other common chemical substances.

INSTALLATION OUTLINE

REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.

• Substrate Preparation: Ensure that the substrate is clean and dry. Remove all contaminants and existing coatings from all surfaces to allow proper adhesion of the KEMPEROL system. Roughen all metal surfaces by grinding.

• Substrate Repair: Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

• Temporary Roof/Vapor Retarder: As required, install a layer of mineral-surfaced base sheet to the structural deck.

• Insulation/Cover Board: For insulated assemblies, install approved isocyanurate foam insulation/cover board to the structural deck, either with urethane foam adhesive or mechanical fasteners.


• Membrane: Install Kemperol Reflect 2K FR membrane and flashing system to primed surfaces. All moving cracks and joints between plywood, insulation and cover boards are to be stripped in prior to application of the full system.

• Surfacing: For all applications where concrete or other cementitious overburden is to be installed, apply Kempertec EP/EP5 primer over the entire area to be covered, and broadcast Kemperol Surfacing sand into the wet primer at 50 lbs/100 ft².

• Overburden: For IRMA and green/landscaped assemblies, install extruded polystyrene insulation, drainage board, concrete pavers, water retainage mat, soil/growing media, plantings, or other specified and approved overburden materials.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

WARRANTY INFORMATION

KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (20) years.

TECHNICAL AND SALES SUPPORT

KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; job-start, interim and final completion inspections.

For further assistance call 1-800-541-5455, or visit our website at www.kempersystem.net.

All information and statements contained herein are believed to be accurate, but Kemper System America, Inc. (KSA), its agents and/or affiliates make no warranty with respect thereto, including but not limited to any results to be obtained or the infringement of any proprietary right. Improper and unauthorized use or application of such information or statements or the material or systems described herein is at user’s sole discretion and risk, and consequently user acknowledges that KSA shall bear no responsibility or liability for same. Nothing herein shall be construed as a license of or recommendation for use which infringes any proprietary right. All sales are subject to KSA’s Standard Terms and Conditions of Sale, including but not limited to its Limited Warranty.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
KEMPcoura® AC, Polymethyl Methacrylate (PMMA) membrane system is intended for use in roofing applications where the quick-curing speed is of paramount importance.

Typical applications include: green, white, and blue roofing, recover roofing, insulated roofing, IRMA roofing, and metal recover roofing.

PRODUCT DESCRIPTION

The Kemperol AC roofing system is a fully reinforced, cold liquid-applied membrane system. The Kemperol AC system is based primarily upon Polymethyl Methacrylate (PMMA) technology, incorporating a liquid component and a powdered catalyst, with each component curing in approximately one hour. A decorative PMMA finish can be applied as either a smooth color coating or a textured aggregate surfacing.

The Kemperol AC system includes the following components:

- Kempertec AC Primer
- Kemperol AC Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kempertec AC Adhesion Key Surfacing (if Required)
- Kemperdur AC Finish (if Required)

The Kemperol AC membrane system components average under 35 g/l VOC and are not solvent-based.

TECHNICAL ADVANTAGE

The Kemperol AC same-day application system is suitable for exterior applications only where the speed of system application is critical.

The Kemperol AC system is exceptionally durable, reliable, and long-lasting, and has a combination of physical properties that makes it ideal for an exceptionally wide range of applications.

Unlike many other roofing systems, the Kemperol AC system incorporates flashings that are made of the same materials as the roofing membrane itself, essentially creating a seamless, self-terminating monolithic membrane that readily adapts to the contours of the substrate.

The Kemperol AC system bonds directly to the substrate, eliminating the possibility of water moving laterally beneath the roofing membrane. The system eliminates seams, pitch pockets, metal sleeves and termination bars, which are the locations where most leakage occurs.

Kemperol AC bonds tenaciously to all common construction materials including concrete, CMU block, brick, wood, stainless steel, copper, galvanized steel, aluminum, cast iron, glass, cement board, treated gypsum board, and rigid PVC.

The Kemperol AC system can be used to transition from one material to another without need of intermediate separation flashings.

Kemperol AC is resistant to UV exposure, is root and rot resistant, and resists degradation by most oils, grease, and other common chemical substances. In addition, Kemperol AC is unaffected by standing water and ice, and can be left submerged indefinitely.

TYPICAL ASSEMBLIES

STANDARD ROOFING ASSEMBLY

- Kemperol AC Flashing
- Kemperdur AC Finish (optional)
- Kemperol AC Membrane
- Kempertec AC Primer
- Approved Deck/Existing Roof Assembly

INSULATED ROOFING ASSEMBLY

- Kemperol AC Flashing
- Kemperdur AC Finish (optional)
- Kemperol AC Membrane
- Kempertec AC Primer
- Approved Cover Board
- Approved Isocyanurate Foam Insulation
- Approved Deck/Existing Roof Assembly

IRMA ROOFING ASSEMBLY

- Kemperol AC Flashing
- Stone or Precast Concrete Pavers with Pedestals
- Filter Fabric (typical)
- Extruded Polystyrene Insulation
- Drainage Board (optional)
- Kemperol AC Membrane
- Kempertec AC Primer
- Approved Deck

GREEN/LANDSCAPED ROOFING ASSEMBLY

- Kemperol AC Flashing
- Plantings
- Soil/Growing Media
- Filter Fabric
- Drainage Board
- Water Retainage Mat
- Kemperol AC Membrane
- Kempertec AC Primer
- Approved Deck
INSTALLATION OUTLINE
REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.

• Substrate Preparation: Ensure that the substrate is clean and dry. Remove all contaminates and existing coatings from all surfaces to allow proper adhesion of the Kemperol system. Roughen all metal flashing surfaces by grinding.

• Substrate Repair: Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

• Temporary Roof / Vapor Retarder: As required, install a layer of mineral-surfaced base sheet to the structural deck.

• Insulation/Cover Board: Install approved isocyanurate foam insulation/cover board to the structural deck, either with urethane foam adhesive or mechanical fasteners.

• Primer: Apply Kempertec AC primer to all substrate surfaces. Allow to fully cure.

• Membrane: Install Kemperol AC membrane and flashing system to primed surfaces. All moving cracks are to be stripped in prior to application of the full system.

• Surfacing: For all applications where an adhered overburden is to be applied, such as concrete, tile, stucco, asphalt pavement, etc., you may apply Kempertec AC primer over the entire area to be covered, and broadcast kilndried sand into the wet primer. This layer acts as an adhesion key and it not required.

• Coating: For applications where a colored coating or aggregated surfacing is desired, apply Kemperdur AC finish.

• Overburden: For IRMA and green landscaped assemblies, install extruded polystyrene insulation, drainage boards, concrete pavers, water retainage mat, soil/growing media, plantings, or other specified and approved overburden materials.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

WARRANTY INFORMATION
KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Authorized Applicators are eligible to apply for watertightness warranties issued by Kemper System that provide for repair at no charge to address covered leaking conditions due to defects in products or installation workmanship. Standard warranty duration is twenty (20) years.

TECHNICAL AND SALES SUPPORT
KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call our Service Center at 1-800-541-5455, or visit our website at www.kempersystem.net.

All information and statements contained herein are believed to be accurate, but Kemper System America, Inc. (KSA), its agents and/or affiliates make no warranty with respect thereto, including but not limited to any results to be obtained or the infringement of any proprietary right. Improper and unauthorized use or application of such information or statements or the material or systems described herein is at user’s sole discretion and risk, and consequently user acknowledges that KSA shall bear no responsibility or liability for same. Nothing herein shall be construed as a license of or recommendation for use which infringes any proprietary right. All sales are subject to KSA’s Standard Terms and Conditions of Sale, including but not limited to its Limited Warranty.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
BASIC USE

The KEMPEROL® 2K-PUR, Polyurethane, membrane system is intended for use in waterproofing applications where an “odor-free” application is of paramount importance.

Typical applications include: plaza decks, interior, water features, below-grade, secondary containment, and many other related uses.

PRODUCT DESCRIPTION

The Kemperol 2K-PUR waterproofing system is a fully reinforced, cold liquid-applied membrane system. It can be installed either as a complete edge-to-edge Kemperol membrane system, or in discrete locations to address localized conditions.

The Kemperol 2K-PUR system is based primarily upon polyurethane and epoxy technology. Depending on the substrate, the primer component of the system is either a two-component epoxy or urethane. The membrane and flashing resin components of the system are two-component urethane. Depending on application, a two-component epoxy surfacing is applied when alkalinity resistant or adhesion key surfacing is required. A decorative urethane or epoxy finish can also be applied as either a smooth color coating or a textured aggregate surfacing.

The Kemperol 2K-PUR system includes the following components:

- Kempertec EP, EPS, D or R Primer
- Kemperol 2K-PUR Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kempertec EP Alkalinity/Adhesion Key Surfacing (if Required)
- Kemperdur EP-FR Finish (if Required)

The Kemperol 2K-PUR membrane system components average under 10 g/l VOC and are not solvent-based.

TECHNICAL ADVANTAGE

The Kemperol 2K-PUR odor-free system is suitable for both exterior and interior applications where absence of odor during application is critical.

The Kemperol 2K-PUR system is exceptionally durable, reliable, and long-lasting, and has a combination of physical properties that makes it ideal for an exceptionally wide range of applications.

Unlike many other waterproofing systems, the Kemperol 2K-PUR system incorporates flashings that are made of the same materials as the waterproofing membrane itself, essentially creating a seamless, self-terminating monolithic membrane that readily adapts to the contours of the substrate.

The Kemperol 2K-PUR system bonds directly to the substrate, eliminating the possibility of water moving laterally beneath the waterproofing membrane. The system eliminates seams, pitch pockets, metal flashings and termination bars - the locations where most leakage occurs.

The Kemperol 2K-PUR system adheres tenaciously to all common construction materials including concrete, CMU block, brick, wood, stainless steel, copper, galvanized steel, aluminum, cast iron, glass, fiberglass, cement board, treated gypsum.

TYPICAL ASSEMBLIES

STANDARD WATERPROOFING ASSEMBLY

PLAZA DECK WATERPROOFING ASSEMBLY

BELOW-GRADE WATERPROOFING ASSEMBLY

SOLID OVERBURDEN WATERPROOFING ASSEMBLY
board, and rigid PVC. Because of its exceptional adhesion and flexibility, the Kemperol 2K-PUR system can be used to transition from one type of material to another without need of intermediate separation flashings.

Kemperol 2K-PUR is resistant to UV exposure, is root and rot resistant, and resists degradation by most oils, grease, and other common chemical substances. In addition, Kemperol 2K-PUR is unaffected by standing water and ice, and can be left submerged indefinitely.

**INSTALLATION OUTLINE**

REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.

- **Substrate Preparation:** Ensure that the substrate is clean and dry. Remove all contaminants and existing coatings from all surfaces to allow proper adhesion of the Kemperol 2K-PUR system. Roughen all metal flashing surfaces by grinding.

- **Substrate Repair:** Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

- **Primer:** Apply Kempertec EP/EP5 epoxy-based primer to concrete and masonry substrates. Apply Kempertec D/R urethane-based primer to metal and wood substrates. Allow to fully cure.

- **Membrane:** Install Kemperol 2K-PUR membrane and flashing system to primed surfaces. All moving cracks are to be reinforced with an initial strip of Kemperol 2K-PUR membrane prior to application of the full system.

- **Surfacing:** For all applications where concrete or other cementitious overburden is to be installed, and for all applications where an adhered overburden is to be applied, (e.g. concrete, tile, stucco, asphalt pavement, etc.), apply Kempertec EP/EP5 primer over the entire area to be covered, and broadcast kilndried sand into the wet primer.

- **Coating:** For applications where a colored coating or aggregated surfacing is desired, apply Kemperdur EP-FR or Deko Finish.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

**WARRANTY INFORMATION**

KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (20) years.

**TECHNICAL AND SALES SUPPORT**

KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call 1-800-541-5455, or visit our website at www.kempersystem.net.
KEMPEROL AC MEMBRANE SYSTEM FOR WATERPROOFING

BASIC USE
The KEMPEROL® AC, Polymethyl Methacrylate (PMMA) membrane system is intended for use in waterproofing applications where the quick-curing speed is of paramount importance.

Typical applications include: plaza decks, water features, below-grade, secondary containment, and many other related uses.

PRODUCT DESCRIPTION
The Kemperol AC waterproofing system is a fully reinforced, cold liquid-applied membrane system. It can be installed either as a complete edge-to-edge Kemperol membrane system, or in discrete locations to address localized conditions.

The Kemperol AC system is based primarily upon Polymethyl Methacrylate (PMMA) technology, incorporating a liquid component and a catalyst powder, with each component curing in approximately one hour.

The Kemperol AC system includes the following components:
• Kempertec AC Primer
• Kemperol AC Resin with Kemperol 165 Polyester Fleece Reinforcement
• Kempertec AC Adhesion Key Surfacing (Optional)
• Kemperdur AC Finish (If Required)

The Kemperol AC membrane system components average under 35 g/l VOC and are not solvent-based.

TECHNICAL ADVANTAGE
The Kemperol AC same-day application system is suitable for exterior applications only where the speed of system application is critical.

The Kemperol AC system is exceptionally durable, reliable, and long-lasting, and has a combination of physical properties that makes it ideal for an exceptionally wide range of applications.

Unlike many other waterproofing systems, the Kemperol AC system incorporates flashings that are made of the same materials as the waterproofing membrane itself, essentially creating a seamless, self-terminating monolithic membrane that readily adapts to the contours of the substrate.

The Kemperol AC system bonds directly to the substrate, eliminating the possibility of water moving laterally beneath the waterproofing membrane. The system eliminates seams, pitch pockets, metal flashings and termination bars - the locations where most leakage occurs.

The Kemperol AC system adheres tenaciously to all common construction materials including concrete, CMU block, brick, wood, stainless steel, copper, galvanized steel, aluminum, cast iron, glass, fiberglass, cement board, treated gypsum board, and rigid PVC. Because of its exceptional adhesion and flexibility, the AC system can be used to transition from one type of material to another without need of intermediate separation flashings.

Kemperol AC is resistant to UV exposure, is root and rot resistant, and resists degradation by most oils, grease, and other common chemical substances.

TYPICAL ASSEMBLIES

STANDARD WATERPROOFING ASSEMBLY

PLAZA DECK WATERPROOFING ASSEMBLY

BELOW-GRADE WATERPROOFING ASSEMBLY

SOLID OVERBURDEN WATERPROOFING ASSEMBLY
In addition, Kemperol AC is unaffected by standing water and ice, and can be left submerged indefinitely.

**INSTALLATION OUTLINE**

**REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.**

- **Substrate Preparation**: Ensure that the substrate is clean and dry. Remove all contaminants, and existing coatings from all surfaces to allow proper adhesion of the Kemperol AC system. Roughen all metal flashing surfaces by grinding.

- **Substrate Repair**: Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

- **Primer**: Apply Kempertec AC primer to all substrate surfaces. Allow to fully cure.

- **Membrane**: Install Kemperol AC membrane and flashing system to primed surfaces. All moving cracks are to be reinforced with an initial strip of Kemperol AC membrane prior to application of the full system.

- **Surfacing**: For all applications where an adhered overburden is to be applied (e.g. concrete, tile, stucco, asphalt pavement, etc.), apply Kempertec AC primer over the entire area to be covered, and broadcast kiln-dried sand into the wet primer.

- **Coating**: For applications where a colored coating or aggregated surfacing is desired, apply Kemperdur AC FINISH.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

**WARRANTY INFORMATION**

KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (20) years.

**TECHNICAL AND SALES SUPPORT**

KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call our Service Center at 1-800-541-5455, or visit our website at www.kempersystem.net.

---

All information and statements contained herein are believed to be accurate, but Kemper System America, Inc. (KSA), its agents and/or affiliates make no warranty with respect thereto, including but not limited to any results to be obtained or the infringement of any proprietary right. Improper and unauthorized use or application of such information or statements or the material or systems described herein is at user’s sole discretion and risk, and consequently user acknowledges that KSA shall bear no responsibility or liability for same. Nothing herein shall be construed as a license of or recommendation for use which infringes any proprietary right. All sales are subject to KSA’s Standard Terms and Conditions of Sale, including but not limited to its Limited Warranty.
BASIC USE
The KEMPEROL® V210/BRM Polyester membrane system is intended for use in waterproofing applications where the ultimate in proven system performance is of paramount importance. Typical applications include: plaza decks, water features, below-grade, secondary containment, and many other related uses.

PRODUCT DESCRIPTION
The Kemperol V210M/BRM waterproofing system is a fully reinforced, cold liquid-applied membrane system. It can be installed either as a complete edge-to-edge Kemperol membrane system, or in discrete locations to address localized conditions.

The Kemperol V210M/BRM system is based primarily upon a combination of advanced polyester, polyurethane, epoxy and polymethyl methacrylate (PMMA) technology. Depending on the substrate, the primer component of the system is either a two-component epoxy or urethane. The membrane and flashing resin components of the system are one or two liquid-component polyester with a catalyst powder.

Depending on application, a two-component PMMA surfacing is applied when an alkalinity resistant or adhesion key surfacing is required.

The Kemperol V210M/BRM system includes the following components:
- Kempertec EP, EPS D or R Primer
- Kemperol V210M/BRM Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kempertec AC Alkalinity/Adhesion Key Surfacing (If Required)

The Kemperol V210M/BRM membrane system components average under 25 g/l VOC and are not solvent-based.

TECHNICAL ADVANTAGE
The Kemperol V210M/BRM system is suitable for exterior applications where proven system longevity is critical.

The Kemperol V210M/BRM system is exceptionally durable, reliable, and long-lasting, and has a combination of physical properties that makes it ideal for an exceptionally wide range of applications.

Unlike many other waterproofing systems, the Kemperol V210M/BRM system incorporates flashings that are made of the same materials as the waterproofing membrane itself, essentially creating a seamless, self-terminating monolithic membrane that readily adapts to the contours of the substrate.

The Kemperol V210M/BRM system bonds directly to the substrate, eliminating the possibility of water moving laterally beneath the waterproofing membrane. The system eliminates seams, pitch pockets, metal flashings and termination bars - the locations where most leakage occurs.

The Kemperol V210M/BRM system adheres tenaciously to all common construction materials including concrete, CMU block, brick, wood, stainless steel, copper, galvanized steel, aluminum, cast iron, glass, fiberglass, cement board, treated gypsum board, and rigid PVC.

TYPICAL ASSEMBLIES

STANDARD WATERPROOFING ASSEMBLY
- KEMPEROL V210M/BRM FLASHING
- KEMPEROL V210M/BRM MEMBRANE
- KEMPERTEC PRIMER APPROVED FOR SUBSTRATE

APPROVED DECK

PLAZA DECK WATERPROOFING ASSEMBLY
- KEMPEROL V210M/BRM FLASHING
- PRECAST CONCRETE PAVERS WITH PEDESTALS (TYPICAL)
- EXTRUDED POLYSTYRENE INSULATION (OPTIONAL)
- DRAINAGE BOARD (OPTIONAL)
- KEMPEROL V210M/BRM MEMBRANE
- KEMPERTEC PRIMER APPROVED FOR SUBSTRATE

APPROVED DECK

BELOW-GRADE WATERPROOFING ASSEMBLY
- KEMPEROL V210M/BRM FLASHING
- CONCRETE/TILE/PAVEMENT (TYPICAL)
- KEMPERTEC AC PRIMER W/SAND
- DRAINAGE BOARD (OPTIONAL)
- KEMPEROL V210M/BRM MEMBRANE
- KEMPERTEC PRIMER APPROVED FOR SUBSTRATE

APPROVED DECK

SOLID OVERBURDEN WATERPROOFING ASSEMBLY
- KEMPEROL V210M/BRM FLASHING
- CONCRETE/TILE/PAVEMENT (TYPICAL)
- KEMPEROL V210M/BRM MEMBRANE
- KEMPERTEC PRIMER APPROVED FOR SUBSTRATE

APPROVED DECK
Because of its exceptional adhesion and flexibility, the Kemperol V210M/BRM system can be used to transition from one type of material to another without need of intermediate separation flashings.

The Kemperol V210M/BRM system is resistant to UV exposure without need of a separate protection layer. The Kemperol V210M/BRM system is root and rot resistant, and resists degradation by most oils, grease, and other common chemical substances. In addition, the Kemperol V210M/BRM system is unaffected by standing water and ice, and can be left submerged indefinitely.

**INSTALLATION OUTLINE**
REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.

- **Substrate Preparation:** Ensure that the substrate is clean and dry. Remove all contaminants and existing coatings from all surfaces to allow proper adhesion of the Kemperol V210M/BRM system. Roughen all metal flashing surfaces by grinding.

- **Substrate Repair:** Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

- **Primer:** Apply Kempertec EP/EP5 epoxy-based primer to concrete and masonry substrates. Apply Kempertec D/R urethane-based primer to metal and wood substrates. Allow to fully cure.

- **Membrane:** Install Kemperol V210M/BRM membrane and flashing system to primed surfaces. All moving cracks are to be reinforced with an initial strip of Kemperol V210M/BRM membrane prior to application of the full system.

- **Surfacing:** For all applications where concrete or other cementitious overburden is to be installed, and for all applications where an adhered overburden is to be applied, (e.g. concrete, tile, stucco, asphalt pavement, etc.), apply Kempertec AC primer over the entire area to be covered, and broadcast kiln-dried sand into the wet primer.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

**WARRANTY INFORMATION**
KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (20) years.

**TECHNICAL AND SALES SUPPORT**
KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call 1-800-541-5455, or visit our website at www.kempersystem.net.

All information and statements contained herein are believed to be accurate, but Kemper System America, Inc. (KSA), its agents and/or affiliates make no warranty with respect thereto, including but not limited to any results to be obtained or the infringement of any proprietary right. Improper and unauthorized use or application of such information or statements or the material or systems described herein is at user's sole discretion and risk, and consequently user acknowledges that KSA shall bear no responsibility or liability for same. Nothing herein shall be construed as a license of or recommendation for use which infringes any proprietary right. All sales are subject to KSA's Standard Terms and Conditions of Sale, including but not limited to its Limited Warranty.
BASIC USE
The KEMPERDUR® TC Traffic Coating, Polyurethane, system is intended for use as a water-proofing and surfacing system for vehicular and pedestrian applications where an “odor-free” application is of paramount importance.

PRODUCT DESCRIPTION
The Kemperdur TC Traffic Coating system combines a heavy-duty, impact and abrasion-resistant aggregated surfacing system with a Kemperol reinforced liquid-applied flashing system, or a complete edge-to-edge Kemperol reinforced liquid-applied membrane and flashing system, to provide a unique combination of waterproofing and traffic-resistant surfacing over concrete substrates.

The Kemperdur TC Traffic Coating system is based primarily upon polyurethane and epoxy technology. The primer component of the system is a two-component epoxy, and the membrane and surfacing resin components of the system are two-component urethane. Depending on application, the finish sealcoat is either a urethane, or a two-component epoxy.

The Kemperdur TC Traffic Coating system includes the following components:

- Kemperol EP/EP5 Primer
- Kemperol 2K-PUR Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kemperdur TC Coating with Aggregate
- Kemperdur EP-FR Finish, Deko Finish, or Finish (Transparent)

The Kemperdur TC Traffic Coating system components average under 25 g/l VOC with a non-solvent-based.

TECHNICAL ADVANTAGE
The Kemperdur TC Traffic Coating “odor-free” system is suitable for both exterior and interior applications where absence of odor during application is critical.

Unlike typical traffic coating systems, the Kemperdur TC Traffic Coating system incorporates a 80 mil thick reinforced waterproofing membrane/flashing at all critical areas. A complete edge-to-edge membrane and flashing system is used for exposed applications over occupied space, such as the top level of a parking garage or a terrace area.

A flashing-only system is used for protected applications or applications over unoccupied space, such as intermediate levels of a parking garage or an overhanging balcony.

In addition, the Kemperdur TC Traffic Coating system incorporates a self-leveling resin that is combined with a graded mineral filler to create a very hard and durable high-build surfacing layer that also serves to bond the broadcasted surfacing aggregate, resulting in a typical finished surfacing thickness of 100 mils.

The traffic systems can incorporate a broadcast of Ceramaquartz aggregate or kiln-dried aggregate with a sealcoat application of colored Kemperdur EP-FR, Deko Finish or Finish (Transparent). Ten standard Ceramaquartz aggregate color blends are available.

FM, UL, and other code approvals are available for specific assemblies and installations.
INSTALLATION OUTLINE

REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.

• Substrate Preparation: Ensure that the concrete substrate is clean and dry. Remove all contaminants and existing coatings from all surfaces to allow proper adhesion of the Kemperdur system. Roughen all metal flashing surfaces by grinding.

• Substrate Repair: Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

• Primer: Apply Kempertec EP/EP5 primer to the concrete substrate and all flashing surfaces at the perimeter, penetrations, expansion joints, and drain locations.

• Membrane: Install Kemperol 2K-PUR membrane and flashings as required for application type. All moving cracks are to be reinforced with an initial strip of Kemperol 2K-PUR membrane.

• Surfacing: Apply Kemperdur TC Traffic Coating over the entire area and allow to self-level and de-aerate with an HDPE spiked roller immediately. Broadcast the selected aggregate into the wet surfacing resin so as to fully cover the surface.

• Sealing: Remove all loose aggregate from the applied surfacing. Apply selected colored or transparent Kemperdur EP-FR Finsh, Kemperdur Deko Finish, or Kemperdur Finish to seal the aggregate surfacing.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

WARRANTY INFORMATION

KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness/surfacing performance warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship, and separation of surfacing from the membrane/substrate. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (10) years.

TECHNICAL AND SALES SUPPORT

KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call 1-800-541-5455, or visit our website at www.kempersystem.net.
KEMPERDUR AC TRAFFIC COATING SYSTEM

BASIC USE
The KEMPERDUR® AC, Traffic Coating, Polymethyl Methacrylate (PMMA), system is intended for use as a waterproofing and surfacing system for vehicular and pedestrian applications where the quick-curing speed is of paramount importance.

PRODUCT DESCRIPTION
The Kemperdur AC Traffic Coating system combines a heavy-duty, impact and abrasion-resistant aggregated surfacing system with a Kemperol reinforced liquid-applied flashing system, or a complete edge-to-edge Kemperol reinforced liquid-applied membrane and flashing system, to provide a unique combination of waterproofing and traffic-resistant surfacing over concrete substrates.

The Kemperdur AC Traffic Coating system is based upon Polymethyl Methacrylate (PMMA) technology. Each component of the system incorporates a liquid component and a catalyst powder, with each component curing in approximately one hour.

The Kemperdur AC Traffic Coating system includes the following components:

- Kempertec AC Primer
- Kemperol AC Resin with Kemperol 165 Polyester Fleece Reinforcement
- Kemperol AC Resin with Aggregate
- Kemperdur AC Finish

The Kemperdur AC Traffic Coating system components average under 35 g/l VOC and are not solvent-based, but there is a short-term odor associated with the materials until curing is achieved.

TECHNICAL ADVANTAGE
The Kemperdur AC Traffic Coating same-day application system is suitable for exterior applications only where the speed of system application is critical.

Unlike typical traffic coating systems, the Kemperdur AC Traffic Coating system incorporates a 70 mil thick reinforced waterproofing membrane/flashing at all critical areas. A complete edge-to-edge membrane and flashing system is used for exposed applications over occupied space, such as the top level of a parking garage or a terrace area. A flashing-only system is used for protected applications or applications over unoccupied space, such as intermediate levels parking garage or an overhanging balcony.

In addition, the Kemperdur AC Traffic Coating system incorporates a self-leveling resin that is combined with a graded mineral filler to create a very hard and durable high-build surfacing layer that also serves to bond the broadcasted surfacing aggregate, resulting in a typical finished surfacing thickness of 100 mils.

The traffic systems can incorporate a broadcast of Ceramaquartz aggregate or kiln-dried aggregate with a sealcoat application of transparent or gray colored Kemperdur AC Finish.

Ten standard Ceramaquartz aggregate color blends are available.

TYPICAL ASSEMBLIES

VEHICULAR TRAFFIC ASSEMBLY – FULL WATERPROOFING

- KEMPEROL AC FLASHING
- KEMPERDUR AC FINISH COLORED AGGREGATE
- KEMPERDUR AC SURFACING
- KEMPEROL AC MEMBRANE
- KEMPERTEC AC PRIMER
- CONCRETE DECK

VEHICULAR TRAFFIC ASSEMBLY – FLASHING ONLY

- KEMPEROL AC FLASHING
- KEMPERDUR AC FINISH COLORED AGGREGATE
- KEMPERDUR AC SURFACING
- KEMPERTEC AC PRIMER
- CONCRETE DECK

PEDESTRIAN TRAFFIC ASSEMBLY – FULL WATERPROOFING

- KEMPEROL AC FLASHING
- KEMPERDUR AC FINISH TRANSPARENT AGGREGATE BLEND
- KEMPERDUR AC SURFACING
- KEMPEROL AC MEMBRANE
- KEMPERTEC AC PRIMER
- CONCRETE DECK

PEDESTRIAN TRAFFIC ASSEMBLY – FLASHING ONLY

- KEMPEROL AC FLASHING
- KEMPERDUR AC FINISH TRANSPARENT AGGREGATE BLEND
- KEMPERDUR AC SURFACING
- KEMPERTEC AC PRIMER
- CONCRETE DECK
INSTALLATION OUTLINE
REFER TO THE KEMPEROL TECHNICAL MANUAL FOR COMPLETE INSTALLATION INFORMATION.

• **Substrate Preparation:** Ensure that the concrete substrate is clean and dry. Remove all contaminants and existing coatings from all surfaces to allow proper adhesion of the Kemperol system. Roughen all metal flashing surfaces by grinding.

• **Substrate Repair:** Route out all moving cracks and fill with urethane sealant. Non-moving cracks will be filled during priming application.

• **Primer:** Apply Kempertec AC primer to the concrete substrate and all flashing surfaces at the perimeter, penetrations, expansion joints, and drain locations.

• **Membrane:** Install Kemperol AC membrane and flashings as required for application type. All moving cracks are to be reinforced with an initial strip of Kemperol AC membrane.

• **Surfacing:** Apply Kemperol AC Traffic Coating over the entire area and allow to self-level and de-aerate with an HDPE spiked roller immediately. Broadcast the selected aggregate into the wet surfacing resin so as to fully cover the surface.

• **Sealing:** Remove all loose aggregate from the applied surfacing. Apply selected colored or transparent Kemperdur AC finish to seal the aggregate surfacing.

All Kemper System America, Inc. (KSA) products are intended for PROFESSIONAL USE ONLY.

WARRANTY INFORMATION
KSA warrants its products to be free of defects, and will provide replacement materials at no charge for any product proven to be defective.

KSA provides technical installation training to qualified contractors, who are then eligible to become Kemper System Authorized Applicators.

In addition, for qualified installations, Kemper System Approved Applicators are eligible to apply for (NDL) watertightness/surfacing performance warranties issued by Kemper System that provide repair for leaking conditions through the Kemperol system due to defects in products or installation workmanship, and separation of surfacing from the membrane/substrate. Projects must be registered, approved and inspected by the Technical Department prior to commencement of work. Typical warranty duration is twenty (10) years.

TECHNICAL AND SALES SUPPORT
KSA sales and technical representatives are available to support the proper specification and application of KSA products to ensure a long and successful performance life.

Services provided include: on-site evaluations; specification assistance; jobstart, interim and final completion inspections.

For further assistance call 1-800-541-5455, or visit our website at www.kempersystem.net.

All information and statements contained herein are believed to be accurate, but Kemper System America, Inc. (KSA), its agents and/or affiliates make no warranty with respect thereto, including but not limited to any results to be obtained or the infringement of any proprietary right. Improper and unauthorized use or application of such information or statements or the material or systems described herein is at user’s sole discretion and risk, and consequently user acknowledges that KSA shall bear no responsibility or liability for same. Nothing herein shall be construed as a license of or recommendation for use which infringes any proprietary right. All sales are subject to KSA’s Standard Terms and Conditions of Sale, including but not limited to its Limited Warranty.
## TABLE OF CONTENTS

- **KEMPEROL® 2K-PUR** System Application Procedures
- **KEMPEROL® REFLECT 2K FR** System Application Procedures
- **KEMPEROL® BRM/V210M** System Application Procedures
- **KEMPEROL® AC** System Application Procedures
- **KEMPEROL® Membrane Tie-In, Patching And Repair Guidelines**
- **KEMPER SYSTEM** Application Tips
- **KEMPEROL®** Maintenance And Repair Considerations

**NOTE: SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.**
KEMPEROL® 2K-PUR SYSTEM APPLICATION PROCEDURES

Design Evaluation

Review project specification to ensure conformance with Kemper System America, Inc. (KSA) requirements. Notify design professional and KSA Technical department of any discrepancies prior to the performance of any work.

Evaluate site and building conditions. It is recommended that test cuts and test cores be performed to determine the layer-by-layer composition of the substrate assembly that the KSA materials will be applied over.

The performance of a mock-up application is recommended if there is a question regarding substrate assembly moisture, or regarding adhesion to uncommon substrate surfaces. This will help ensure the best possible application method.

Material Storage

All KSA components will be delivered to the site in original sealed containers/packaging. Define a storage area for all components that is cool, dry, out of direct sunlight, and in accordance with recommendations of KSA and relevant regulatory agencies. Roll goods must be stored horizontally on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls with damaged ends. Store solvent-bearing solutions, resins, additives, inhibitors and adhesives in accordance with the MSDS and/or local fire and regulatory authorities. Materials should not be stored in quantities that will exceed design loads, damage substrate materials, hinder installation or drainage.

Optimum storage of materials is between 65 – 70 °F (18 – 21 °C) in a controlled environment. DO NOT store materials outside in cold weather, as the cooled materials will be difficult to mix and apply due to their thick consistency. DO NOT store materials outside in hot weather, as the heated materials will react more quickly and may result in reduced working time.

Work Place Safety

Provide and maintain positive ventilation and protection to workers for concealed and/or interior application or applications lacking sufficient natural air movements. Coordinate protective measures with the Owner or his designated Representative.

Comply with requirements of OSHA, NIOSH or governing local authority for work place safety. When required, provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or his designated Representative.

NOTE: Copies of all current MSDS for all components must be kept on site. Provide all crewmembers with appropriate safety data information and training as is related to the specific chemical compound he or she may be expected to deal with. Each crewmember shall be fully aware of first-aid measures to be undertaken in case of accidents.

Environmental Requirements

Application of Kemperol 2K-PUR system may proceed while ambient temperature is between 41 – 90 °F (5 – 32 °C) providing the substrate is a minimum of 5 degrees above the dew point. Consult with KSA Technical Department outside of this temperature range. Do not commence with the application of any KSA material during or with the threat of inclement weather and ensure that substrate materials are dry and free of contaminants.

Application of Kemptec primer, Kemperol 2K-PUR resin, and Kemperdur surfacing materials in ambient temperatures between 35 – 41°F (2 – 5 °C) is not recommended. Storage of materials in a warm location until application will help accelerate cure, as will the use of cold weather additives.

Application of Kemperol 2K-PUR system when ambient temperature is below 35 °F is discouraged due to the potential of a frozen deck and dew point issues.

Application of Kemperol 2K-PUR system in ambient temperature above 90 °F is possible, consult the KSA Technical Department for extreme weather application guidelines. Storage of materials in a cool location until application will retard cure, and application of materials in the late afternoon can alleviate the potential for blistering related to vapor drive.
**Protection**

Protect building adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Provide protection for Contractor personnel and occupants of the structure and surrounding buildings as required complying with requirements of OSHA, NIOSH and/or governing local authority.

**Odor Control**

Odor control and elimination measures are not typically necessary, but if required by the Owner or his designated Representative, implement odor control and elimination measures before and during the application of the roofing/waterproofing materials. Control/elimination measures must be field tested at off-hours and typically consists of one (1) or multiple of the following measures:

1. Sealing of air intakes with activated carbon filters, and at joints against building exterior walls to prevent leakage of unfiltered air into occupied spaces.
2. Sealing of doorways, windows, and skylights with duct tape and polyethylene sheeting to prevent leakage of air into the building.
3. Erection and use of moveable enclosure(s) sized to accommodate work area(s) and stationary enclosure for resin mixing station equipped with mechanical air intake/exhaust openings, odor control air cleaners, and activated carbon filter at exhaust openings as required to clean enclosed air volume and to prevent odor migration outside the enclosure. Placement of odor elimination stations inside and outside of the enclosure(s) as required.

The Kemper System is a four-step application:

1. Preparation and cleaning of the substrate;
2. Application of primer suitable for substrate;
3. Application of the membrane;
4. Application of surfacing, coating or overburden, if required.

Immediately before the application of any component of the system, the substrate shall be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth-wipe or a combination.

**NOTE:** Before opening the containers of any Kemper System Product, protect hands and wrists with gloves, and wear OSHA-approved eye protection. Use respiratory equipment if recommended by MSDS sheet for specific Kemper System material being applied.

**System Assemblies**

Kemper System materials are often installed in roofing and waterproofing assemblies that utilize additional materials not discussed in this Application Guide, including: asphaltic base and cap sheets; polyisocyanurate and extruded polyurethane foam insulation; high density polyisocyanurate foam and cementitious cover boards; drainage mats; water retention mats; concrete pavers; vegetated-type overburden. Please refer to individual Kemper System guide specifications for application information regarding the incorporation of these materials into a Kemper System assembly.

**Concrete**

New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by the KSA Technical Department. New or existing concrete shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5.

When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed ¼ inch (peak to valley). The substrate shall be sound and all spalls, voids and blow holes on vertical or horizontal surfaces must be repaired prior to placement of the primer coat. Areas of minor surface deterioration of ¼ inch or greater in depth shall be repaired to prevent possible ponding of the system, leading to excessive use of primer and resin. For concrete materials with a compressive strength of less than 3,000 psi contact the KSA Technical Department for substrate preparation requirements. Hollow-core panels, T-panels, and Twin-T panels shall have grouted joints between panels and shall be provided with mechanical securement from panel to panel.
Concrete shall be dry and confirmed by measuring the moisture level with the following methods:

- **ASTM F2170**: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.
- **ASTM F1869**: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. A maximum result is 3 lb/1,000 ft²/24-hour period.
- **ASTM D2216**: Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass. A maximum result is 6% moisture content by weight.
- **ASTM F2659**: Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter. Tramex Concrete Moisture Encounter Meter CME4 may be used to determine the moisture content of the top 3/4” of the concrete slab. A maximum acceptable reading is 5%.

**Masonry**
Walls shall be built with hard kiln dried brick or waterproof concrete block construction. Areas of soft or scaling brick or concrete, recessed or faulty mortar joints, or walls with broken, damaged or leaking coping shall be repaired prior to placement of the primer coat. Repair in a manner previously described for structural concrete repair. Walls shall be dry in accordance with the above referenced methods.

**Steel/Metal**
Clean and prepare metal surfaces to near white metal in accordance with SSPC - SP3 (power tool clean). Extend preparation a minimum of three (3) inches beyond the termination of the membrane flashing materials. In addition to cleaning, all metal surfaces shall be abraded to provide a rough open surface. **A WIRE BRUSH FINISH IS NOT ACCEPTABLE**. Wipe prepared metal surface with MEK or other acceptable solvent cleaner prior to application of primer.

**Wood/Plywood**
Plywood shall be identified with American Plywood Association (APA) grade trademarks and shall meet the requirements of product standard PS1. Strip plywood joints, cracks, knot holes with Kemperol fleece in primer or resin.

**Existing Modified Bitumen Waterproofing**
Perform an adhesion test to evaluate the compatibility with the existing membrane. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.

Granule-surfaced membrane shall have all loose granules removed from the surface by vacuuming and power brooming. Smooth-surfaced membrane with applied coating shall have all loose coating removed. Where the adhesion results dictate, adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

**Existing Gravel Surfaced Bituminous and Coal Tar Pitch Waterproofing**
Do not install Kemperol membrane directly to coal tar pitch roofing systems. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Gravel-surfaced membrane shall have all loose gravel removed. Adhere polyisocyanurate foam insulation (R=6 min. for bituminous or R=20 min. or greater for coal tar to prevent the pitch from reaching 85 °F) and ½” cementitious cover board over the roof surface.

**Existing Single Ply Roofing**
Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Mechanically fasten or adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

**Other Substrate Surfaces**
Substrates not listed in the Primer Selection Table will require adhesion testing or approval by the KSA Technical and R&D Departments for acceptance and preparation procedures.
Kempertec primer/sand mix are the preferred materials for all substrate leveling, crack and wall/deck repair and patching. Kempertec primer/sand mix is not intended to be used as a structural repair material.

Commercially-available cementitious repair mortars can also be used to make surface repairs to concrete, masonry, stone, and terra-cotta substrate surfaces. Commercially-available two-component polyurethane sealant can be used to fill and seal defects in wood and metal substrate surfaces. Gaps between materials are typically filled by the use of compressible backer rod, followed by application of polyurethane sealant.

A sound and even substrate surface shall be provided for all KSA material applications. Kemper System materials are not intended to span unsupported gaps and voids.

**Primer/Sand Options**

Kempertec EP or D primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol membrane may be applied following an 12-16 hour curing period, provided that primer is fully cured and tack free. EP Primer should be used for repairs to concrete and masonry surfaces; D Primer is recommended for repairs to metal and wood surfaces. In addition, primer slurry may be used for creating slope to drain to address localized drainage deficiencies.

Kempertec EP5 or R primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol membrane may be applied following a 3-4 hour curing period, provided that primer is fully cured and tack free. EP5 Primer is should be used for repairs to concrete and masonry surfaces; R Primer is recommended for repairs to metal and wood surfaces. These primer slurries may be used for vertical repairs due to fast-set time. In addition, they may also be used for creating slope to drain to address localized drainage deficiencies.

**Sand Aggregate Specification and Size**

Kemperol Sands are round/angular grain silica, washed, kiln-dried and dust-free. They are used for patching, broadcasting to increase the surface area to enhance adhesion or to create slip resistant surfaces. Silica sand must be kept absolutely dry during storage and handling.

- Mixing Sand (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S-Grade blend) for aesthetic color quartz finished surfacing.

**Substrate Leveling, Sloping and Patching**

Substrate conditions are to be evaluated by the Design Professional, Contractor, the Owner, or designated Representative.

**NOTE: Any surface to be leveled or patched with primer/sand must first be primed with an appropriate Kempertec primer.**

The ratio of primer to sand can be varied to create a mixture that provides the proper consistency for the intended application.

The leveling mixture typically consists of a slurry of primer and appropriate sand in a 1:2 resin/primer to sand ratio by volume. Spread and plane this compound with a squeegee or trowel to achieve a even surface.

The patching mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin/primer to sand ratio by volume. Fill cavities with this compound with a trowel to achieve a even surface.

The sloping mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin to sand ratio by volume. Create required slope (maximum 2” thickness in maximum 1” lifts) with a trowel to achieve an even surface.

**Preparation of Joints and Cracks**

Joints, cracks, and fractures in the structural deck shall be prepared before installation of waterproofing membrane. Clean out cracks by brushing and oil-free compressed air. Fill crack with Kempertec primer/sand slurry, or two component polyurethane sealant. Allow for a minimum of twelve (12) hours cure or as required by Sealant Manufacturer. Moving joints or cracks larger than 1/4” should be stripped in with a strip of membrane. Joints, cracks and fractures may telegraph through the waterproofing membrane.
All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, curing agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

After 72 hours the Contractor should perform random tests to determine tensile bond strength of membrane to substrate at the job site using an Elcometer Adhesion Tester Model 106 or similar device, or by the performance of a manual pull test. Contractor shall perform tests on completely cured membrane at the beginning of the Work, and at intervals as required assuring specified adhesion with a minimum of three (3) tests per 5000 ft² (464.5 m²).

KSA requires a tested tensile bond strength of membrane to substrate greater than or equal to 150 psi (1.0 N/mm²). Alternatively, a manual 135° peel bond strength of membrane to substrate must confirm that cohesive failure of substrate or membrane occurs before adhesive failure of primer/substrate interface.

This can be achieved through correct and proper surface preparation. Before priming of the surfaces, inspect and check the prepared substrate.

In the event the bond strengths are lower than the minimum specified and cohesive failure of the substrate is not the mode of failure, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation. Contractor shall immediately notify the KSA in the event tensile bond test results are below specified values.

Selection of Primer
Refer to the Substrate Primer Selection Table.

Mixing of D and EP/EP5 Primers
Step 1: Premix Component A thoroughly with a spiral agitator.

Step 2: Pour Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. DO NOT AERATE. DO NOT THIN PRIMER. The primer should be a uniform color, with no light or dark streaks present.

NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.

Mixing of R and EP/EP5 Primer Sachets
Step 1: Remove bag from the aluminum packaging. Knead cream-colored resin Component A thoroughly until a uniform color is achieved.

Step 2: Pull away the rubber cord separating the two components so that Components A and B can be mixed together. Knead the bag quickly and thoroughly for approximately 1 minute so that a homogenous primer is formed. The primer should be a uniform color, with no light or dark streaks present.

NOTE: Kempertec R primer is extremely fast curing. Excessive mixing time reduces the available working time for the primer. Apply primer within 5 minutes.

Primer Application
Determine proper primer and coverage for each substrate material/condition referencing the Primer Selection Table and appropriate product data sheets. Listed coverage rates are estimates and may vary dependent upon substrate characteristics.

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

Higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primers due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition. Where required, a second squeegee application of sand/primer slurry may be utilized. The primer slurry mixing ratio should be 25 lbs of Kemperol® Surfacing Sand and 12.5 lbs of Kemperol® Mixing Sand per 5 kg unit of primer.
For EP and EP5 Primer applications, broadcast Kemperol Surfacing sand (0, #18) to refusal, at the approximate rate of 50 lbs. / 100 ft² (2.4 kg/m²) into the wet primer to increase surface area and enhance adhesion. Remove excess sand after primer has fully cured prior to membrane application.

Curing time is approximately 12-16 hours for D and EP primers and approximately 3-4 hours for R and EP5 primers. Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.

**NOTE:** Exposure of primer in excess of eight (8) days or premature exposure to moisture may require abrasion of contaminated surface and application of new primer coat.

**Temporary Waterproofing:** Primers may be utilized to achieve temporary waterproofing. The contractor is responsible for ensuring proper night time tie-off and seal to prevent water infiltration into the new assembly.

**Mixing of 2K-PUR Two-Component Resin**

**Step 1:** Mix resin Component A (cream formulation) with a spiral agitator until the liquid is a uniform cream color.

**Step 2:** If the ambient temperature is below 50°F (10°C), A2K-PUR Accelerator, a cold weather additive, should be mixed into the Component A. The accelerator should be mixed with the spiral agitator for 2 minutes or until both liquids are thoroughly blended.

**Step 3:** Add hardener Component B (dark brown formulation) to Component A and mix with a spiral agitator for 2 minutes or until both liquids are thoroughly blended.

**NOTE:** DO NOT break down units into smaller quantities – mix the entire work pack.

**Resin/Fleece Application**

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

**Tool Use and Care**

Kemperol brushes and roller naps will remain supple and usable if they are kept moving in liquid resin. If allowed to sit, they will harden quickly as resin begins to cure. Roller naps must be discarded once they stiffen.

Brushes may be discarded or cleaned with MEK or acetone-based solvent. Roller handles can also be cleaned with MEK or acetone-based solvent. If solvent is used, the tool must air dry for 60 minutes before being reused for mixing and/or application. To minimize cleaning, wipe handle with clean, dry cloth every fifteen (15) to twenty (20) minutes and schedule work to avoid stopping.

**Laps, Seams and Tie-offs**

At all fleece seams, allow a 2" (5 cm) overlap for all side joints and a 4" (10 cm) overlap for all end joints. At membrane tie-offs, clean in-place membrane with MEK when resin has cured. Allow solvents to fully evaporate before application of new resin. DO NOT APPLY PRIMER TO EXISTING KEMPEROL MEMBRANE.

**Flashings**

Install membrane flashings in accordance with the requirements/recommendations of KSA and as depicted on standard drawings and details. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete edge-to-edge watertight system.

**Curing and Staging**

Protect all areas where membrane has been installed. Do not work off installed membrane during application of remaining work before forty-eight (48) hours of curing. Movement of materials and equipment across installed membrane is not acceptable. If movement is necessary, provide complete protection of affected areas. Protect finished membrane from damage by other trades by the use of a cushioning layer such as 1” thick extruded polystyrene insulation and an impact layer such as ½” thick exterior-grade plywood.
**General**
Wherever possible, install the flashings before installing the field membrane to minimize foot traffic over newly installed field membrane.

All membrane flashings shall be installed concurrently with the waterproofing membrane as the job progresses. Temporary flashings are not allowed without prior written approval from the KSA Technical Department. Should any water penetrate the new waterproofing membrane because of incomplete flashings, the affected area shall be removed and replaced at the contractor’s expense.

Provide a minimum vertical height of 8” for all flashing terminations. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope. **Do not flash over existing through-wall flashings, weep holes or overflow scuppers.**

**Metal Flashing – General**
Metal flashings shall be fabricated in accordance with the current recommendations of SMACNA and in accordance with standard drawings and project details.

Metal flashing flanges to which membrane is to be bonded shall be a minimum of four (4) inches in width, and secured to the structural deck, or to treated wood nailers secured to the structural deck, six (6) inches on center staggered with fasteners appropriate to the substrate type. The flanges shall be provided with a roughened surface that has been cleaned of all oil and other residue.

Metal edges that will be overlaid with membrane shall be provided with a 1/4” min. hemmed edge.

Apply primer, resin and fleece to metal flange, extending membrane to outside face of metal edging, and to vertical face of metal base/curb flashing.

**Membrane Flashing – General**
Membrane flashings shall be fabricated with primer appropriate for the substrate surface, resin of the same base chemical type as the field membrane, and fleece of the same weight as the field membrane unless specified otherwise.

Primer, resin, and fleece mixing and application methods as specified for field membranes are also suitable for membrane flashing.

Fleece shall overlap 2” (5 cm) minimum for all joints. Fleece shall be cut neatly to fit all flashing conditions without a buildup of multiple fleece layers. Work wet membrane with a brush or roller to eliminate blisters, openings, or lifting at corners, junctions, and transitions.

**Pipes, Conduits, and Unusually Shaped Penetrations**
Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Drains and Scuppers**
Acceptable drain and scupper materials are galvanized, galvalum, cast iron, cast aluminum, copper, hard PVC, and ABS.

**Flexible Penetrations**
Provide a weathertight gooseneck of round cross-section for each penetration or group of penetrations. Set in water cut-off mastic and secure to the structural substrate. Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Walls, Curbs and Base Flashings**
Wall, curb and base flashings shall be installed to solid substrate surfaces only. Adhering to cementitious stucco, synthetic stucco, wood siding or metal siding, and other similar materials is not acceptable.

Reinforce all transition locations and other potential wear areas with a membrane strip evenly positioned over the transition prior to installing the exposed flashing layer.

Reinforce all inside and outside corners with an additional reinforcing strip of membrane prior to installing the exposed flashing layer.

All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.

All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.
Extend flashing a minimum of four (4) inches onto the field substrate surface.

**Drip Edges and Gravel Stops**

Metal drip edges and gravel stops shall be installed to solid substrate surfaces or treated wood nailers only. Securement to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding or metal siding or coping, and other similar materials is not acceptable.

Before installing drip edges and gravel stops extend the membrane all the way to the edge of the structure. Once the membrane has fully cured install the drip edge or gravel stop over membrane. Prepare, prime and strip in the metal flange with a separate 8” wide strip of membrane adhered to both the securement flange and to the field membrane. Clean the field membrane prior to stripping in the flange. If the field membrane has been exposed for over 48 hour lightly abrade the surface of the membrane and clean with a solvent.

**Do not apply primer to the existing field membrane.**

For conditions where water infiltration behind the exposed drip edge or gravel stop face is possible, install a separate membrane bottom layer positioned behind the face area and extending a minimum of four (4) inches past the securement flange onto the field substrate prior to installing the drip edge or gravel stop.

**Field Fabricated Control or Expansion Joint Flashing**

Control or expansion joints in excess of two (2) inches in width and all joints subjected to vehicular traffic require the use of a separate engineered joint system.

Grind or otherwise bevel the inside edges of the joint opening to provide a smooth transition edge for the fleece. Apply bond breaker tape on both sides of the joint.

Flashing typically consists of a fully saturated membrane bottom layer looped into the joint as a cradle, a compressible foam or rubber insert at 25% compression fitted into the joint with half the compressible material protruding above the joint, and a membrane top layer applied over the joint. Extend both fleece layers four (4) inches minimum onto the field substrate on both sides of the joint. An alternate approach is to insert the compressible foam or rubber insert into the joint completely sitting in the membrane cradle and fill it with a urethane trafficable grade sealer.

For insulated assemblies, wood nailers of a thickness to match the insulation/cover board must be installed on either side of an expansion joint.

**Electrical Conduit, Gas Lines and Lightning Protection**

Supports for electrical conduit and gas lines greater than one (1) inch in diameter require the use of a separate engineered support system.

Supports for electrical conduit and gas lines one (1) inch or less in diameter, and bases for lightning protection rods and cable, can be adhered directly to the membrane surface with a single-component, high quality polyurethane sealant.

Approved urethane, acrylic, epoxy coatings and sealers, kiln-dried silica sand, or Ceramaquartz aggregate may be applied to Kemperol 2K-PUR membrane to achieve various performance and/or aesthetic purposes.

Polyurethane-based membrane resins develop a hard and smooth membrane surface as the material cures over time. IT IS RECOMMENDED that coatings and sealers be applied within 48 hours following membrane application in order to achieve the best bond. Once the membrane has developed a hard and smooth surface, DO NOT apply coatings and sealers directly to this surface. The membrane surface must be sanded or otherwise lightly abraded before coatings and sealers are applied. An MEK solvent wipe may be required to remove any abraded particles that remain.

When mixing coatings and sealers prior to application, DO NOT AERATE the material as this will result in bubbles and pinholes in the applied finish.

**Mixing of BSF-R Finish (water based acrylic)**

**Step 1:** Premix resin with a clean spiral agitator or stir stick until a uniform consistency is obtained.

**Mixing of Kemperdur Deko 2KS-FR Finish (solvent based urethane)**

**Step 1:** Premix resin Component B thoroughly with a spiral agitator. Resin solution should be a uniform color, with no light or dark streaks present.

**Step 2:** Pour entire contents of Mixed Component B into a clean empty five gallon pail and check the B side container for unmixed pigment. If unmixed pigment is present pour contents back and re-mix Component B.

**Step 3:** If unmixed pigment is not present split the Component B into two equal parts, using the new pail and the original container.
Step 4: Pour resin Component A equally into each pail of Component B and thoroughly mix the components with a clean spiral agitator. The Resin solution should be a uniform color, with no light or dark streaks present.

**Mixing of Kemperdur Deko Transparent (solvent based urethane)**

**Step 1:** Premix resin with a spiral agitator on slow speed or stir stick.

**Step 2:** For aggregate bonding, apply resin directly to the membrane surface.

**Step 3:** For aggregate sealing only, add 250 ml, half of unit, of Kempertec 1K Thinner into a 5 kg unit of Kemperdur Deko Transparent resin and mix for approximately two (2) minutes with a clean spiral agitator on slow speed or stir stick without creating any bubbles or streaks. This will thin the resin and allow for an even sealer application.

**Mixing of Kemperdur Deko Finish (solvent based urethane)**

**Step 1:** Premix resin Component A thoroughly with a spiral agitator on slow speed or stir stick.

**Step 2:** Add Component B (color pack) to Component A and thoroughly mix for two (2) minutes with a clean spiral agitator on slow speed or stir stick without creating any bubbles or streaks. During application continue to periodically mix the coating to avoid separation of resin and pigment.

**Mixing of Kemperdur Finish (solvent based urethane)**

**Step 1:** Agitate sealer in sealed container prior to use.

**Coatings**

For roof coating applications, the following are acceptable:

- Kemperdur BSF-R Finish.
- Kemperdur Deko 2KS-FR Finish.

For architectural detailing or submerged applications, apply Kemperdur Deko Finish.

**Smooth Coating Application**

Roller-apply Kemperdur coating over clean, cured membrane at the rate of approximately 100 ft²/gal. For larger area application 18” roller naps are recommended. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

Following minimum four (4) hour cure time for BSF-R finish and 12 hour cure time for 2KS-FR Finish, apply an additional coat at the rate of approximately 100 ft²/gal. Two coats are highly recommended to obtain uniform and full coverage, eliminating roller marks. For extended performance a third coat is required.

After completion of coating, avoid any traffic for a minimum of two (2) days.

**Aggregate Specification and Size**

All surfacing aggregates shall be washed, kiln-dried, dust-free, suitable for broadcast, round grain or angular, and sized as follows:

- Mixing Sand (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S Grade blend) for aesthetic color quartz finished surfacing.

**Aggregate Bonding and Sealing Resins**

For roof surfacing applications, the following combinations of bonding resin, aggregate, and sealing resin are acceptable:

- Kemperol 2K-PUR resin (w/o fleece) / aggregate / Kemperdur BSF-R or 2KS-FR Finish (2 coats min).
- Kemperdur BSF-R Finish / aggregate / BSF-R Finish (2 coats min).
- Kemperdur Deko Finish / aggregate / Deko Finish (2 coats min, not fire-rated).

For a low foot traffic color quartz finish application, the following combinations of bonding resin, aggregate, and sealing resin are acceptable:

- Kemperol 2K-PUR resin (w/o fleece) / Ceramaquartz / Kemperdur Finish
- Kemperdur Deko Transparent / Ceramaquartz / Kemperdur Deko Transparent or Kemperdur Finish
**Aggregate Surfacing Application**

Broadcast Kemperol Surfacing sand or color quartz in excess into the bonding resin coat applied over clean, cured membrane. Aggregate shall be applied at the rate of 50 lbs. / 100 ft². Obtain uniform and full coverage.

Following minimum 24 hour cure time remove loose/unembedded sand or color quartz by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean aggregate as required to provide full embedment and coverage of membrane.

Seal aggregate surface with a sealing coat application of appropriate Kemperdur coating, applied at the rate of approximately 100 ft²/gal. After completion, avoid any traffic for a minimum of two (2) days to allow for surfacing to fully cure.

**Alkalinity Protection Against Fresh Concrete**

Where placement of concrete or other cementitious material is required over sections of the membrane and flashings, apply a coat of primer at approximately 100 ft²/5 kg unit, with broadcast of Surfacing Sand at the rate of 50 lbs./100 ft² into wet primer. This provides a protective surfacing for the membrane from the alkalinity of fresh concrete and other cementitious materials.

**NOTE:** Provide temporary surface protection and continuous cleaning with water and brush (high-pressure water if necessary) to eliminate settlement of concrete residues on in-place roofing/waterproofing membrane adjacent to area of concrete placement.

**Adhesion Key Surfacing Application**

Where placement of asphalt pavement or other adhered-type overburden is required over sections of the roofing/waterproofing membrane and flashings, apply one coat of EP/EP5 primer at a 100 ft²/5 kg unit, with broadcast of Surfacing Sand at the rate of 50 lbs./100 ft² into wet primer. This provides a membrane surface profile for enhanced bonding capability.

**Mixing of Kemperdur EP-FR Finish (epoxy)**

**Step 1:** Premix resin Component A thoroughly with a spiral agitator or stir stick. Resin solution should be a uniform color, with no light or dark streaks present.

**Step 2:** Pour Component B into Component A thoroughly mix the components with a clean spiral agitator. The Resin solution should be a uniform color, with no light or dark streaks present.

**NOTE:** DO NOT break down units into smaller quantities – mix the entire work pack.

**Application of Kemperdur EP-FR Finish (epoxy)**

Roller-apply Kemperdur EP-FR Finish at the rate of approximately 120 ft²/6 kg unit evenly onto the clean, cured membrane or at the rate of approximately 80 ft²/6 kg directly over a primed substrate. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

Broadcast Kemperol Surfacing Sand into the wet resin at the rate of 50 lbs./100 ft². Obtain uniform and full coverage.

Following minimum 24 hour cure time remove loose/unembedded sand by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean aggregate as required to provide full embedment and coverage of membrane.

Seal aggregate surface with a sealing coat application Kemperdur EP-FR Finish, applied at the rate of approximately 80 ft²/6 kg. Ensure to lap each preceding path to erase squeeze out from the edge of roller. If necessary, a second coat may be applied after 6 hours.

After completion, avoid any traffic for a minimum of two (2) days to allow for surfacing to fully cure.
Concrete surfaces to receive the TC Traffic Coating system must be properly designed and constructed in order to assure effective coating performance. Determine whether the concrete contains sufficient expansion/cold-joints. If the joint design is not adequate, additional joints must be created in the TC Traffic Coating system, at minimum every 20’.

**Mixing of Kemperdur TC Traffic Coating**

**Step 1:** Pre-mix Component A (white formulation) with a spiral Kemperol agitator for 1 minute, until the liquid is a uniform color and all solids that may have settled to the bottom of the can have been mixed. When working on a sloped area, from 3-20%, such as a ramps, add approximately 90 g of Kempertec TX Thixotropic additive to Component A before adding Component B.

**Step 2:** Pour Component A (white formulation) in to a separate clean mixing pail, add Component B (dark brown formulation) and mix with a spiral agitator for 1 minute, until the liquid is a uniform dark beige color without light or dark streaks.

**Step 3:** Gradually add Component C (white mineral filler) to the liquid while mixing continuously for an additional 1 minute until a smooth, lump free mixture is produced.

*NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.*

**Application of Kemperdur TC Traffic Coating and Aggregate**

**Step 1:** Empty the pail of KEMPERDUR® TC Traffic Coating mixture onto the primed concrete surface or over fully cured membrane and spread with a ¼” x ¼” x ¼” square-notched steel trowel at the rate of approximately 40 ft²/12.5 kg unit. If applying over cured membrane follow membrane re-coating guidelines.

**Step 1a:** When applying the Kemperdur TC traffic coating on an incline with the TX Thixotropic additive ensure that the coating does not run down the slope. If the coating shows signs of sag add additional additive.

**Step 1b:** Due to the TX Thixotropic additive the coating will not longer self level. The flat side of the trowel must be used to level out the coating on sloped surfaces.

**Step 2:** Immediately de-aerate the coating in a cross direction with a porcupine (spiked) roller in order to release the air bubbles that may develop within the coating.

**Step 3:** Allow the Kemperdur TC Traffic Coating mix to self-level and reach an initial set for 10-20 minutes, depending on ambient and surface temperatures, until material will retain a peak after being touched by a finger.

**Step 4:** Broadcast selected aggregate to excess into TC Traffic Coating until a uniform dry aggregate layer has been achieved. Aggregate will initially sink into surfacing, requiring the application of additional aggregate. Sufficient aggregate application is achieved when there are no wet spots remaining. Aggregate application rate is typically 100 lbs./100 ft².

**Step 5:** Allow the aggregate-filled Kemperdur TC Traffic Coating to cure for approximately 4 hours. Times may vary depending on temperatures. Remove excess aggregate by brooming and vacuuming.

**Application of Kemperdur EP-FR Finish (epoxy)**

Roller-apply Kemperdur EP-FR Finish at approximately 80 ft²/6 kg unit evenly onto the surface. Ensure to lap each preceding path to erase squeeze out from the edge of roller. If necessary, a second coat may be applied after 6 hours.

**Application of Kemperdur Finish**

Apply transparent Kemperdur Finish over the desired Ceramaquartz aggregate at approximately 360 ft²/10 kg unit evenly onto the surface.

**Protection**

Protect finished application from all other contractors and activities during and after completion. Any damage to the system must be repaired as recommended by KSA Technical Department.

**Clean-Up & Disposal**

Remove all masking, protection, equipment, materials, and debris from the work and storage areas and leave those areas in an undamaged and acceptable condition.

Cured Kemper primers, resin, and surfacings may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

*NOTE: Uncured Kemper System primers, resins, and surfacings are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured primer, resin and surfacings away.*

**DISCLAIMER:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPEROL® REFLECT 2K FR SYSTEM APPLICATION PROCEDURES

**Design Evaluation**

Review project specification to ensure conformance with Kemper System America, Inc. (KSA) requirements. Notify design professional and KSA Technical department of any discrepancies prior to the performance of any work.

Evaluate site and building conditions. It is recommended that test cuts and test cores be performed to determine the layer-by-layer composition of the substrate assembly that the KSA materials will be applied over.

The performance of a mock-up application is recommended if there is a question regarding substrate assembly moisture, or regarding adhesion to uncommon substrate surfaces. This will help ensure the best possible application method.

**Material Storage**

All KSA components will be delivered to the site in original sealed containers/packaging. Define a storage area for all components that is cool, dry, out of direct sunlight, and in accordance with recommendations of KSA and relevant regulatory agencies. Roll goods must be stored horizontally on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls with damaged ends. Store solvent-bearing solutions, resins, additives, inhibitors and adhesives in accordance with the MSDS and/or local fire and regulatory authorities. Materials should not be stored in quantities that will exceed design loads, damage substrate materials, hinder installation or drainage.

Optimum storage of materials is between 65 – 70 °F (18 – 21 °C) in a controlled environment. DO NOT store materials outside in cold weather, as the cooled materials will be difficult to mix and apply due to their thick consistency. DO NOT store materials outside in hot weather, as the heated materials will react more quickly and may result in reduced working time.

**Work Place Safety**

Provide and maintain positive ventilation and protection to workers for concealed and/or interior application or applications lacking sufficient natural air movements. Coordinate protective measures with the Owner or his designated Representative.

Comply with requirements of OSHA, NIOSH or governing local authority for work place safety. When required, provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or his designated Representative.

**Environmental Requirements**

Application of Kemperol Reflect 2K FR system may proceed while ambient temperature is between 41 – 90 °F (5 – 32 °C) providing the substrate is a minimum of 5 degrees above the dew point. Consult with KSA Technical Department outside of this temperature range. Do not commence with the application of any KSA material during or with the threat of inclement weather and ensure that substrate materials are dry and free of contaminants.

Application of Kempertec primer, Kemperol 2K-PUR resin, and Kemperdur surfacing materials in ambient temperatures between 35 – 41°F (2 – 5 °C) is not recommended. Storage of materials in a warm location until application will help accelerate cure, as will the use of cold weather additives.

Application of Kemperol Reflect 2K FR system when ambient temperature is below 35 °F is discouraged due to the potential of a frozen deck and dew point issues.

Application of Kemperol Reflect 2K FR system when ambient temperature above 90 °F is possible, consult the KSA Technical Department for extreme weather application guidelines. Storage of materials in a cool location until application will retard cure, and application of materials in the late afternoon can alleviate the potential for blistering related to vapor drive.
**Protection**

Protect building adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Provide protection for Contractor personnel and occupants of the structure and surrounding buildings as required complying with requirements of OSHA, NIOSH and/or governing local authority.

**Odor Control**

Odor control and elimination measures are not typically necessary, but if required by the Owner or his designated Representative, implement odor control and elimination measures before and during the application of the roofing/waterproofing materials. Control/elimination measures must be field tested at off-hours and typically consists of one (1) or multiple of the following measures:

1. Sealing of air intakes with activated carbon filters, and at joints against building exterior walls to prevent leakage of unfiltered air into occupied spaces.
2. Sealing of doorways, windows, and skylights with duct tape and polyethylene sheeting to prevent leakage of air into the building.
3. Erection and use of moveable enclosure(s) sized to accommodate work area(s) and stationary enclosure for resin mixing station equipped with mechanical air intake/exhaust openings, odor control air cleaners, and activated carbon filter at exhaust openings as required to clean enclosed air volume and to prevent odor migration outside the enclosure. Placement of odor elimination stations inside and outside of the enclosure(s) as required.

**The Kemper System is a four-step application:**

1. Preparation and cleaning of the substrate;
2. Application of primer suitable for substrate;
3. Application of the membrane;
4. Application of surfacing, coating or overburden, if required.

Immediately before the application of any component of the system, the substrate shall be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth-wipe or a combination.

**NOTE:** Before opening the containers of any Kemper System Product, protect hands and wrists with gloves, and wear OSHA-approved eye protection. Use respiratory equipment if recommended by MSDS sheet for specific Kemper System material being applied.

**System Assemblies**

Kemper System materials are often installed in roofing and waterproofing assemblies that utilize additional materials not discussed in this Application Guide, including: asphaltic base and cap sheets; polyisocyanurate and extruded polyurethane foam insulation; high density polyisocyanurate foam and cementitious cover boards; drainage mats; water retention mats; concrete pavers; vegetated-type overburden. Please refer to individual Kemper System guide specifications for application information regarding the incorporation of these materials into a Kemper System assembly.

**Substrate Preparation**

**Concrete**

New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by the KSA Technical Department. New or existing concrete shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5.

When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed ¼ inch (peak to valley). The substrate shall be sound and all spills, voids and blow holes on vertical or horizontal surfaces must be repaired prior to placement of the primer coat. Areas of minor surface deterioration of ¼ inch or greater in depth shall be repaired to prevent possible ponding of the system, leading to excessive use of primer and resin. For concrete materials with a compressive strength of less than 3,000 psi contact the KSA Technical Department for substrate preparation requirements. Hollow-core panels, T-panels, and Twin-T panels shall have grouted joints between panels and shall be provided with mechanical securement from panel to panel.

Concrete shall be dry and confirmed by measuring the moisture level with the following methods:

- ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.
Masonry
Walls shall be built with hard kiln dried brick or waterproof concrete block construction. Areas of soft or scaling brick or concrete, recessed or faulty mortar joints, or walls with broken, damaged or leaking coping shall be repaired prior to placement of the primer coat. Repair in a manner previously described for structural concrete repair. Walls shall be dry in accordance with the above referenced methods.

Steel/Metal
Clean and prepare metal surfaces to near white metal in accordance with SSPC - SP3 (power tool clean). Extend preparation a minimum of three (3) inches beyond the termination of the membrane flashing materials. In addition to cleaning, all metal surfaces shall be abraded to provide a rough open surface. **A wire brush finish is not acceptable.** Wipe prepared metal surface with MEK or other acceptable solvent cleaner prior to application of primer.

Wood/Plywood
Plywood shall be identified with American Plywood Association (APA) grade trademarks and shall meet the requirements of product standard PS1. Strip plywood joints, cracks, knot holes with Kemperol fleece in primer or resin.

Existing Modified Bitumen Waterproofing
Perform an adhesion test to evaluate the compatibility with the existing membrane. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.

Granule-surfaced membrane shall have all loose granules removed from the surface by vacuuming and power brooming. Smooth-surfaced membrane with applied coating shall have all loose coating removed. Where the adhesion results dictate, adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

Existing Gravel Surfaced Bituminous and Coal Tar Pitch Waterproofing
Do not install Kemperol membrane directly to coal tar pitch roofing systems. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Gravel-surfaced membrane shall have all loose gravel removed. Adhere polyisocyanurate foam insulation (R=6 min. for bituminous or R=20 min. or greater for coal tar to prevent the pitch from reaching 85 ºF) and ½” cementitious cover board over the roof surface.

Existing Single Ply Roofing
Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Mechanically fasten or adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

Other Substrate Surfaces
Substrates not listed in the Primer Selection Table will require adhesion testing or approval by the KSA Technical and R&D Departments for acceptance and preparation procedures.

Kemperol primer/sand mix are the preferred materials for all substrate leveling, crack and wall/deck repair and patching. Kemperol primer/sand mix is not intended to be used as a structural repair material.

Commercially-available cementitious repair mortars can also be used to make surface repairs to concrete, masonry, stone, and terra cotta substrate surfaces. Commercially-available two-component polyurethane sealant can be used to fill and seal defects in wood and metal substrate surfaces. Gaps between materials are typically filled by the use of compressible backer rod, followed by application of polyurethane sealant.

A sound and even substrate surface shall be provided for all KSA material applications. Kemper System materials are not intended to span unsupported gaps and voids.
Primer/Sand Options
Kempertec EP or D primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol membrane may be applied following an 12-16 hour curing period, provided that primer is fully cured and tack free. EP Primer should be used for repairs to concrete and masonry surfaces; D Primer is recommended for repairs to metal and wood surfaces. In addition, primer slurry may be used for creating slope to drain to address localized drainage deficiencies.

Kempertec EP5 or R primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol membrane may be applied following a 3-4 hour curing period, provided that primer is fully cured and tack free. EP5 Primer should be used for repairs to concrete and masonry surfaces; R Primer is recommended for repairs to metal and wood surfaces. These primer slurries may be used for vertical repairs due to fast-set time. In addition, they may also be used for creating slope to drain to address localized drainage deficiencies.

Sand Aggregate Specification and Size
Kemperol Sands are round/angular grain silica, washed, kiln-dried and dust-free. They are used for patching, broadcasting to increase the surface area to enhance adhesion or to create slip resistant surfaces. Silica sand must be kept absolutely dry during storage and handling.

- Mixing Sand (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S-Grade blend) for aesthetic color quartz finished surfacing.

Substrate Leveling, Sloping and Patching
Substrate conditions are to be evaluated by the Design Professional, Contractor, the Owner, or designated Representative.

NOTE: Any surface to be leveled or patched with primer/sand must first be primed with an appropriate Kempertec primer.

The ratio of primer to sand can be varied to create a mixture that provides the proper consistency for the intended application.

The leveling mixture typically consists of a slurry of primer and appropriate sand in a 1:2 resin/primer to sand ratio by volume. Spread and plane this compound with a squeegee or trowel to achieve a even surface.

The patching mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin/primer to sand ratio by volume. Fill cavities with this compound with a trowel to achieve a even surface.

The sloping mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin to sand ratio by volume. Create required slope (maximum 2” thickness in maximum 1” lifts) with a trowel to achieve an even surface.

Preparation of Joints and Cracks
Joints, cracks, and fractures in the structural deck shall be prepared before installation of waterproofing membrane. Clean out cracks by brushing and oil-free compressed air. Fill crack with Kempertec primer/sand slurry, or two component polyurethane sealant. Allow for a minimum of twelve (12) hours cure or as required by Sealant Manufacturer. Moving joints or cracks larger than 1/4” should be stripped in with a strip of membrane. Joints, cracks and fractures may telegraph through the waterproofing membrane.

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, curing agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

After 72 hours the Contractor should perform random tests to determine tensile bond strength of membrane to substrate at the job site using an Elcometer Adhesion Tester Model 106 or similar device, or by the performance of a manual pull test. Contractor shall perform tests on completely cured membrane at the beginning of the Work, and at intervals as required assuring specified adhesion with a minimum of three (3) tests per 5,000 ft² (464.5 m²).
KSA requires a tested tensile bond strength of membrane to substrate greater than or equal to 150 psi (1.0 N/mm²). Alternatively, a manual 135° peel bond strength of membrane to substrate must confirm that cohesive failure of substrate or membrane occurs before adhesive failure of primer/substrate interface. This can be achieved through correct and proper surface preparation. Before priming of the surfaces, inspect and check the prepared substrate.

In the event the bond strengths are lower than the minimum specified and cohesive failure of the substrate is not the mode of failure, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation. Contractor shall immediately notify the KSA in the event tensile bond test results are below specified values.

### Selection of Primer
Refer to the Substrate Primer Selection Table.

### Mixing of D and EP/EP5 Primers
**Step 1:** Premix Component A thoroughly with a spiral agitator.

**Step 2:** Pour Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. DO NOT AERATE. DO NOT THIN PRIMER. The primer should be a uniform color, with no light or dark streaks present.

**NOTE:** DO NOT break down units into smaller quantities – mix the entire work pack.

### Mixing of R and EP/EP5 Primer Sachets
**Step 1:** Remove bag from the aluminum packaging. Knead cream-colored resin Component A thoroughly until a uniform color is achieved.

**Step 2:** Pull away the rubber cord separating the two components so that Components A and B can be mixed together. Knead the bag quickly and thoroughly for approximately 1 minute so that a homogenous primer is formed. The primer should be a uniform color, with no light or dark streaks present.

**NOTE:** Kempertec R primer is extremely fast curing. Excessive mixing time reduces the available working time for the primer. Apply primer within 5 minutes.

### Primer Application
Determine proper primer and coverage for each substrate material/condition referencing the Primer Selection Table and appropriate product data sheets. Listed coverage rates are estimates and may vary dependent upon substrate characteristics.

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

Higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primers due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition. Where required, a second squeegee application of sand/primer slurry may be utilized. The primer slurry mixing ratio should be 25 lbs of Kemperol® Surfacing Sand and 12.5 lbs of Kemperol® Mixing Sand per 5 kg unit of primer.

For EP and EP5 Primer applications, broadcast Kemperol Surfacing sand (0, #18) to refusal, at the approximate rate of 50 lbs./100 ft² (2.4 kg/m²) into the wet primer to increase surface area and enhance adhesion. Remove excess sand after primer has fully cured prior to membrane application.

Curing time is approximately 12-16 hours for D and EP primers and approximately 3-4 hours for R and EP5 primers. Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.

**NOTE:** Exposure of primer in excess of eight (8) days or premature exposure to moisture may require abrasion of contaminated surface and application of new primer coat.

### Temporary Waterproofing:
Primers may be utilized to achieve temporary waterproofing. The contractor is responsible for ensuring proper night time tie-off and seal to prevent water infiltration into the new assembly.
Mixing of Reflect 2K FR Two-Component Resin

Step 1: Mix resin Component A (white formulation) with a spiral agitator until the liquid is a uniform white color.

Step 2: If the ambient temperature is below 50°F (10°C), A2K-PUR Accelerator, a cold weather additive, should be mixed into the Component A. The accelerator should be mixed with the spiral agitator for 2 minutes or until both liquids are thoroughly blended.

Step 3: Add hardener Component B (clear formulation) to Component A and mix with a spiral agitator for 2 minutes or until both liquids are thoroughly blended.

NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.

Resin/Fleece Application

Step 1: After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

Step 2: Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. Dry spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

Step 3: Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

Tool Use and Care

Kemperol brushes and roller naps will remain supple and usable if they are kept moving in liquid resin. If allowed to sit, they will harden quickly and resin begins to cure. Roller naps must be discarded once they stiffen.

Brushes may be discarded or cleaned with MEK or acetone-based solvent. Roller handles can also be cleaned with MEK or acetone-based solvent. If solvent is used, the tool must air dry for 60 minutes before being reused for mixing and/or application. To minimize cleaning, wipe handle with clean, dry cloth every fifteen (15) to twenty (20) minutes and schedule work to avoid stopping.

Laps, Seams and Tie-offs

At all fleece seams, allow a 2” (5 cm) overlap for all side joints and a 4” (10 cm) overlap for all end joints. At membrane tie-offs, clean in-place membrane with MEK when resin has cured. Allow solvents to fully evaporate before application of new resin. DO NOT APPLY PRIMER TO EXISTING KEMPEROL MEMBRANE.

Flashings

Install membrane flashings in accordance with the requirements/recommendations of KSA and as depicted on standard drawings and details. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete edge-to-edge watertight system.

Curing and Staging

Protect all areas where membrane has been installed. Do not work off installed membrane during application of remaining work before forty-eight (48) hours of curing. Movement of materials and equipment across installed membrane is not acceptable. If movement is necessary, provide complete protection of affected areas. Protect finished membrane from damage by other trades by the use of a cushioning layer such as 1” thick extruded polystyrene insulation and an impact layer such as ½” thick exterior-grade plywood.

General

Wherever possible, install the flashings before installing the field membrane to minimize foot traffic over newly installed field membrane.

All membrane flashings shall be installed concurrently with the waterproofing membrane as the job progresses. Temporary flashings are not allowed without prior written approval from the KSA Technical Department. Should any water penetrate the new waterproofing membrane because of incomplete flashings, the affected area shall be removed and replaced at the contractor’s expense.

Provide a minimum vertical height of 8” for all flashing terminations. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope.

Do not flash over existing through-wall flashings, weep holes or overflow scuppers.
**Metal Flashing – General**

Metal flashings shall be fabricated in accordance with the current recommendations of SMACNA and in accordance with standard drawings and project details.

Metal flashing flanges to which membrane is to be bonded shall be a minimum of four (4) inches in width, and secured to the structural deck, or to treated wood nailers secured to the structural deck, six (6) inches on center staggered with fasteners appropriate to the substrate type. The flanges shall be provided with a roughened surface that has been cleaned of all oil and other residue.

Metal edges that will be overlaid with membrane shall be provided with a 1/4” min. hemmed edge.

Apply primer, resin and fleece to metal flange, extending membrane to outside face of metal edging, and to vertical face of metal base/curb flashing.

**Membrane Flashing – General**

Membrane flashings shall be fabricated with primer appropriate for the substrate surface, resin of the same base chemical type as the field membrane, and fleece of the same weight as the field membrane unless specified otherwise.

Primer, resin, and fleece mixing and application methods as specified for field membranes are also suitable for membrane flashing.

Fleece shall overlap 2” (5 cm) minimum for all joints. Fleece shall be cut neatly to fit all flashing conditions without a buildup of multiple fleece layers. Work wet membrane with a brush or roller to eliminate blisters, openings, or lifting at corners, junctions, and transitions.

**Pipes, Conduits, and Unusually Shaped Penetrations**

Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Drains and Scuppers**

Acceptable drain and scupper materials are galvanized, galvalum, cast iron, cast aluminum, copper, hard PVC, and ABS.

**Flexible Penetrations**

Provide a weathertight gooseneck of round cross-section for each penetration or group of penetrations. Set in water cut-off mastic and secure to the structural substrate.

Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Walls, Curbs and Base Flashings**

Wall, curb and base flashings shall be installed to solid substrate surfaces only. Adhering to cementitious stucco, synthetic stucco, wood siding or metal siding, and other similar materials is not acceptable.

Reinforce all transition locations and other potential wear areas with a membrane strip evenly positioned over the transition prior to installing the exposed flashing layer.

Reinforce all inside and outside corners with an additional reinforcing strip of membrane prior to installing the exposed flashing layer.

All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.

All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.

Extend flashing a minimum of four (4) inches onto the field substrate surface.

**Drip Edges and Gravel Stops**

Metal drip edges and gravel stops shall be installed to solid substrate surfaces or treated wood nailers only. Securement to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding or metal siding or coping, and other similar materials is not acceptable.

Before installing drip edges and gravel stops extend the membrane all the way to the edge of the structure. Once the membrane has fully cured install the drip edge or gravel stop over membrane. Prepare, prime and strip in the metal flange with a separate 8” wide strip of membrane adhered to both the securement flange and to the field membrane. Clean the field membrane prior to stripping in the flange. If the field membrane has been exposed for over 48 hour lightly abrade the surface of the membrane and clean with a solvent.

**Do not apply primer to the existing field membrane.**
For conditions where water infiltration behind the exposed drip edge or gravel stop face is possible, install a separate membrane bottom layer positioned behind the face area and extending a minimum of four (4) inches past the securement flange onto the field substrate prior to installing the drip edge or gravel stop.

**Field Fabricated Control or Expansion Joint Flashing**

Control or expansion joints in excess of two (2) inches in width and all joints subjected to vehicular traffic require the use of a separate engineered joint system.

Grind or otherwise bevel the inside edges of the joint opening to provide a smooth transition edge for the fleece. Apply bond breaker tape on both sides of the joint.

Flashing typically consists of a fully saturated membrane bottom layer looped into the joint as a cradle, a compressible foam or rubber insert at 25% compression fitted into the joint with half the compressible material protruding above the joint, and a membrane top layer applied over the joint. Extend both fleece layers four (4) inches minimum onto the field substrate on both sides of the joint. An alternate approach is to insert the compressible foam or rubber insert into the joint completely sitting in the membrane cradle and fill it with a urethane trafficable grade sealer.

For insulated assemblies, wood nailers of a thickness to match the insulation/cover board must be installed on either side of an expansion joint.

**Electrical Conduit, Gas Lines and Lightning Protection**

Supports for electrical conduit and gas lines greater than one (1) inch in diameter require the use of a separate engineered support system.

Supports for electrical conduit and gas lines one (1) inch or less in diameter, and bases for lightning protection rods and cable, can be adhered directly to the membrane surface with a single-component, high quality polyurethane sealant.

Approved urethane, acrylic, epoxy coatings and sealers, kiln-dried silica sand, or Ceramaquartz aggregate may be applied to Kemperol Reflect 2K FR membrane to achieve various performance and/or aesthetic purposes.

Polyurethane-based membrane resins develop a hard and smooth membrane surface as the material cures over time. IT IS RECOMMENDED that coatings and sealers be applied within 48 hours following membrane application in order to achieve the best bond. Once the membrane has developed a hard and smooth surface, DO NOT apply coatings and sealers directly to this surface. The membrane surface must be sanded or otherwise lightly abraded before coatings and sealers are applied. An MEK solvent wipe may be required to remove any abraded particles that remain.

When mixing coatings and sealers prior to application, DO NOT AERATE the material as this will result in bubbles and pinholes in the applied finish.

**Mixing of BSF-R Finish (water based acrylic)**

**Step 1:** Premix resin with a clean spiral agitator or stir stick until a uniform consistency is obtained.

**Mixing of Kemperdur Deko 2KS-FR Finish (solvent based urethane)**

**Step 1:** Premix resin Component B thoroughly with a spiral agitator. Resin solution should be a uniform color, with no light or dark streaks present.

**Step 2:** Pour entire contents of Mixed Component B into a clean empty five gallon pail and check the B side container for unmixed pigment. If unmixed pigment is present pour contents back and re-mix Component B.

**Step 3:** If unmixed pigment is not present split the Component B into two equal parts, using the new pail and the original container.

**Step 4:** Pour resin Component A equally into each pail of Component B and thoroughly mix the components with a clean spiral agitator. The Resin solution should be a uniform color, with no light or dark streaks present.

**Coatings**

For roof coating applications, the following are acceptable:

Kemperdur BSF-R Finish.
Kemperdur Deko 2KS-FR Finish.

**Smooth Coating Application**

Roller-apply Kemperdur coating over clean, cured membrane at the rate of approximately 100 ft²/gal. For larger area application 18” roller naps are recommended. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.
Following minimum four (4) hour cure time for BSF-R finish and 12 hour cure time for 2KS-FR Finish, apply an additional coat at the rate of approximately 100 ft²/gal. Two coats are highly recommended to obtain uniform and full coverage, eliminating roller marks. For extended performance a third coat is required.

After completion of coating, avoid any traffic for a minimum of two (2) days.

**Aggregate Specification and Size**
All surfacing aggregates shall be washed, kiln-dried, dust-free, suitable for broadcast, round grain or angular, and sized as follows:

- **Mixing Sand (00) #35 (0.3 – 0.6 mm)** for patching voids less than 1”.
- **Surfacing Sand (0) #18 (0.5 – 1.2 mm)** for patching voids from 1” – 2” or broadcasting purposes.
- **Surfacing Sand (1) #14 (0.8 – 1.5 mm)** for coarse surfaces.

**Aggregate Bonding and Sealing Resins**
For roof surfacing applications, the following combinations of bonding resin, aggregate, and sealing resin are acceptable:

- Kemperol Reflect 2K FR resin (w/o fleece) / aggregate / Kemperdur BSF-R or 2KS-FR Finish (2 coats min).
- Kemperdur BSF-R Finish / aggregate / BSF-R Finish (2 coats min).

For a low foot traffic color quartz finish application, the following combinations of bonding resin, aggregate, and sealing resin are acceptable:

- Kemperol Reflect 2K FR resin (w/o fleece) / Ceramaquartz / Kemperdur Finish

**Aggregate Surfacing Application**
Broadcast Kemperol Surfacing sand or color quartz in excess into the bonding resin coat applied over clean, cured membrane. Aggregate shall be applied at the rate of 50 lbs. / 100 ft². Obtain uniform and full coverage.

Following minimum 24 hour cure time remove loose/unembedded sand or color quartz by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean aggregate as required to provide full embedment and coverage of membrane.

Seal aggregate surface with a sealing coat application of appropriate Kemperdur coating, applied at the rate of approximately 100 ft²/gal. After completion, avoid any traffic for a minimum of two (2) days to allow for surfacing to fully cure.

**Alkalinity Protection Against Fresh Concrete**
Where placement of concrete or other cementitious material is required over sections of the membrane and flashings, apply a coat of primer at approximately 100 ft²/5 kg unit, with broadcast of Surfacing Sand at the rate of 50 lbs./100 ft² into wet primer. This provides a protective surfacing for the membrane from the alkalinity of fresh concrete and other cementitious materials.

*NOTE: Provide temporary surface protection and continuous cleaning with water and brush (high-pressure water if necessary) to eliminate settlement of concrete residues on in-place roofing/waterproofing membrane adjacent to area of concrete placement.*

Protect finished application from all other contractors and activities during and after completion. Any damage to the system must be repaired as recommended by KSA Technical Department.

Remove all masking, protection, equipment, materials, and debris from the work and storage areas and leave those areas in an undamaged and acceptable condition.

Cured Kemper primers, resin, and surfacings may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

*NOTE: Uncured Kemper System primers, resins, and surfacings are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured primer, resin and surfacings away.*
Application Procedures

KEMPEROL® BRM/V210M SYSTEM APPLICATION PROCEDURES

**Design Evaluation**
Review project specification to ensure conformance with Kemper System America, Inc. (KSA) requirements. Notify design professional and KSA Technical department of any discrepancies prior to the performance of any work.

Evaluate site and building conditions. It is recommended that test cuts and test cores be performed to determine the layer-by-layer composition of the substrate assembly that the KSA materials will be applied over.

The performance of a mock-up application is recommended if there is a question regarding substrate assembly moisture, or regarding adhesion to uncommon substrate surfaces. This will help ensure the best possible application method.

**Material Storage**
All KSA components will be delivered to the site in original sealed containers/packaging. Define a storage area for all components that is cool, dry, out of direct sunlight, and in accordance with recommendations of KSA and relevant regulatory agencies. Roll goods must be stored horizontally on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls with damaged ends. Store solvent-bearing solutions, resins, additives, inhibitors and adhesives in accordance with the MSDS and/or local fire and regulatory authorities. Materials should not be stored in quantities that will exceed design loads, damage substrate materials, hinder installation or drainage.

Optimum storage of materials is between 65 – 70 °F (18 – 21 °C) in a controlled environment. DO NOT store materials outside in cold weather, as the cooled materials will be difficult to mix and apply due to their thick consistency. DO NOT store materials outside in hot weather, as the heated materials will react more quickly and may result in reduced working time.

Provide and maintain positive ventilation and protection to workers for concealed and/or interior application or applications lacking sufficient natural air movements. Protect air intake path(s) of the building to prevent odor infiltration to the building interior. Coordinate protective measures with the Owner or his designated Representative.

Comply with requirements of OSHA, NIOSH or governing local authority for work place safety. When required, provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or his designated Representative. Contractor must be familiar with and observe OSHA Regulations CFR 1926/1910 (current issue) for use and handling of polyester resins, catalysts (organic peroxide).

**NOTE:** Copies of all current MSDS for all components must be kept on site. Provide all crewmembers with appropriate safety data information and training as is related to the specific chemical compound he or she may be expected to deal with. Each crewmember shall be fully aware of first-aid measures to be undertaken in case of accidents.

**Work Place Safety**
Application of Kemperol polyester system may proceed while air temperature is between 35 – 105 °F (2 – 40 °C) providing the substrate is a minimum of 5 degrees above the dew point. Consult with KSA Technical Department outside of this temperature range. Do not commence with the application of any KSA material during or with the threat of inclement weather and ensure that substrate materials are dry and free of contaminants.

Application of Kemperol polyester system when ambient temperature is below 35 °F is discouraged due to the potential of a frozen deck and dew point issues.

Application of Kemperol polyester system in temperatures above 105°F is possible, consult the KSA Technical Department for extreme weather application guidelines. Application in hot weather increase the potential for blistering from substrate vapor drive and reduced working times. Storage of materials in a cool location until application will retard cure, and application of materials in the late afternoon can alleviate the potential for blistering.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Protect building adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Provide protection for Contractor personnel and occupants of the structure and surrounding buildings as required complying with requirements of OSHA, NIOSH and/or governing local authority.

Where required by the Owner or his designated Representative, implement odor control and elimination measures before and during the application of the roofing/waterproofing materials. Control/elimination measures must be field tested at off-hours and typically consists of one (1) or multiple of the following measures:

1. Sealing of air intakes with activated carbon filters, and at joints against building exterior walls to prevent leakage of unfiltered air into occupied spaces.
2. Sealing of doorways, windows, and skylights with duct tape and polyethylene sheeting to prevent leakage of air into the building.
3. Erection and use of moveable enclosure(s) sized to accommodate work area(s) and stationary enclosure for resin mixing station equipped with mechanical air intake/exhaust openings, odor control air cleaners, and activated carbon filter at exhaust openings as required to clean enclosed air volume and to prevent odor migration outside the enclosure. Placement of odor elimination stations inside and outside of the enclosure(s) as required.

The Kemper System is a four-step application:

1. Preparation and cleaning of the substrate;
2. Application of primer suitable for substrate;
3. Application of the membrane;
4. Application of overburden, if required.

Immediately before the application of any component of the system, the substrate shall be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth-wipe or a combination.

NOTE: Before opening the containers of any Kemperol material, protect hands and wrists with gauntlet-style neoprene gloves, and wear OSHA-approved eye protection. Use respiratory equipment if recommended by MSDS sheet for specific Kemperol material being applied.

Kemper System materials are often installed in roofing and waterproofing assemblies that utilize additional materials not discussed in this Application Guide, including: asphaltic base and cap sheets; polyisocyanurate and extruded polyurethane foam insulation; high density polyisocyanurate foam and cementitious cover boards; drainage mats; water retention mats; concrete pavers; vegetated-type overburden. Please refer to individual Kemper System guide specifications for application information regarding the incorporation of these materials into a Kemper System assembly.

Concrete

New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by the KSA Technical Department. New or existing concrete shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5.

When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed ¼ inch (peak to valley). The substrate shall be sound and all spalls, voids and blow-holes on vertical or horizontal surfaces must be repaired prior to placement of the primer coat. Areas of minor-surface deterioration of 0.25” or greater in depth shall be repaired to prevent possible ponding of the system, leading to excessive usage of primer and resin. For concrete materials with a compressive strength of less than 3,000 psi contact the KSA Technical Department for substrate preparation requirements.

Hollow-core panels, T-panels, and Twin-T panels shall have grouted joints between panels and shall be provided with mechanical securement from panel to panel.

Concrete shall be dry and confirmed by measuring the moisture level with the following methods:

- ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.
• ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. A maximum result is 3 lb/1,000 ft²/24-hour period.
• ASTM D2216: Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass. A maximum result is 6% moisture content by weight.
• ASTM F2659: Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter. Tramex Concrete Moisture Encounter Meter CME4 may be used to determine the moisture content of the top 3/4” of the concrete slab. A maximum acceptable reading is 5%.

Masonry
Walls shall be built with hard kiln dried brick or waterproof concrete block construction. Areas of soft or scaling brick or concrete, recessed or faulty mortar joints, or walls with broken, damaged or leaking coping shall be repaired prior to placement of the primer coat. Repair in a manner previously described for structural concrete repair. Walls shall be dry in accordance with the above referenced methods.

Steel/Metal
Clean and prepare metal surfaces to near white metal in accordance with SSPC - SP3 (power tool clean). Extend preparation a minimum of three (3) inches beyond the termination of the membrane flashing materials. Notch steel surfaces to provide a rust-stop. In addition to cleaning, all metal surfaces shall be abraded to provide a rough open surface. A WIRE BRUSH FINISH IS NOT ACCEPTABLE. Wipe prepared metal surface with MEK or other acceptable solvent cleaner prior to application of primer.

Wood/Plywood
Plywood shall be identified with American Plywood Association (APA) grade trademarks and shall meet the requirements of product standard PS1. Strip plywood joints, cracks, knot holes with Kemperol fleece in primer or resin.

Existing Modified Bitumen Waterproofing
Perform an adhesion test to evaluate the compatibility with the existing membrane. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.

Granule-surfaced membrane shall have all loose granules removed from the surface by vacuuming and power brooming. Smooth-surfaced membrane with applied coating shall have all loose coating removed. Where the adhesion results dictate, adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

Existing Gravel Surfaced Bituminous and Coal Tar Pitch Waterproofing
Do not install Kemperol membrane directly to coal tar pitch roofing systems. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Gravel-surfaced membrane shall have all loose gravel removed. Adhere polyisocyanurate foam insulation (R=6 min. for bituminous or R=20 min. or greater for coal tar to prevent the pitch from reaching 85 °F) and ½” cementitious cover board over the roof surface.

Existing Single Ply Roofing
Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Mechanically fasten or adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

Other Substrate Surfaces
Substrates not listed in the Primer Selection Table will require adhesion testing or approval by the KSA Technical and R&D Departments for acceptance and preparation procedures.

Kemperotec primer/sand mix are the preferred materials for all substrate leveling, crack and wall/deck repair and patching. Kemperotec primer/sand mix is not intended to be used as a structural repair material.

Commercially-available cementitious repair mortars can also be used to make surface repairs to concrete, masonry, stone, and terra cotta substrate surfaces. Commercially-available two-component polyurethane sealant can be used to fill and seal defects in wood and metal substrate surfaces. Gaps between materials are typically filled by the use of compressible backer rod, followed by application of polyurethane sealant.

A sound and even substrate surface shall be provided for all KSA material applications. Kemper System materials are not intended to span unsupported gaps and voids.
Primer/Sand Options
Kemperol EP or D primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol membrane may be applied following an 12-16 hour curing period, provided that primer is fully cured and tack free. EP Primer should be used for repairs to concrete and masonry surfaces; D Primer is recommended for repairs to metal and wood surfaces. In addition, primer slurry may be used for creating slope to drain to address localized drainage deficiencies.

Kemperol EP5 or R primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol membrane may be applied following a 3-4 hour curing period, provided that primer is fully cured and tack free. EP5 Primer is should be used for repairs to concrete and masonry surfaces; R Primer is recommended for repairs to metal and wood surfaces. These primer slurries may be used for vertical repairs due to fast-set time. In addition, they may also be used for creating slope to drain to address localized drainage deficiencies.

Sand Aggregate Specification and Size
Kemperol Sands are round/angular grain silica, washed, kiln-dried and dust-free. They are used for patching, broadcasting to increase the surface area to enhance adhesion or to create slip resistant surfaces. Silica sand must be kept absolutely dry during storage and handling.

- Mixing Sand (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S-Grade blend) for aesthetic color quartz finished surfacing.

Substrate Leveling, Sloping and Patching
Substrate conditions are to be evaluated by the Design Professional, Contractor, the Owner, or designated Representative.

NOTE: Any surface to be leveled or patched with primer/sand must first be primed with an appropriate Kemperol primer.

The ratio of primer to sand can be varied to create a mixture that provides the proper consistency for the intended application.

The leveling mixture typically consists of a slurry of primer and appropriate sand in a 1:2 resin/primer to sand ratio by volume. Spread and plane this compound with a squeegee or trowel to achieve a even surface.

The patching mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin/primer to sand ratio by volume. Fill cavities with this compound with a trowel to achieve a even surface.

The sloping mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin to sand ratio by volume. Create required slope (maximum 2” thickness in maximum 1” lifts) with a trowel to achieve an even surface.

Preparation of Joints and Cracks
Joints, cracks, and fractures in the structural deck shall be prepared before installation of waterproofing membrane. Clean out cracks by brushing and oil-free compressed air. Fill crack with Kemperol primer/sand slurry, or two component polyurethane sealant. Allow for a minimum of twelve (12) hours cure or as required by Sealant Manufacturer. Moving joints or cracks larger than 1/4” should be stripped in with a strip of membrane. Joints, cracks and fractures may telegraph through the waterproofing membrane.

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, curing agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

After 72 hours the Contractor should perform random tests to determine tensile bond strength of membrane to substrate at the job site using an Elcometer Adhesion Tester Model 106 or similar device, or by the performance of a manual pull test. Contractor shall perform tests on completely cured membrane at the beginning of the Work, and at intervals as required assuring specified adhesion with a minimum of three (3) tests per 5000 ft² (464.5 m²).
KSA requires a tested tensile bond strength of membrane to substrate greater than or equal to 150 psi (1.0 N/mm²). Alternatively, a manual 135° peel bond strength of membrane to substrate must confirm that cohesive failure of substrate or membrane occurs before adhesive failure of primer/substrate interface.

This can be achieved through correct and proper surface preparation. Before priming of the surfaces, inspect and check the prepared substrate.

In the event the bond strengths are lower than the minimum specified and cohesive failure of the substrate is not the mode of failure, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation. Contractor shall immediately notify the KSA in the event tensile bond test results are below specified values.

**Selection of Primer**

Refer to the Substrate Primer Selection Table.

**Mixing of D and EP/EP5 Primers**

**Step 1:** Premix Component A thoroughly with a spiral agitator.

**Step 2:** Pour Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. DO NOT AERATE. DO NOT THIN PRIMER. The primer should be a uniform color, with no light or dark streaks present.

**NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.**

**Mixing of R and EP/EP5 Primer Sachets**

**Step 1:** Remove bag from the aluminum packaging. Knead cream-colored resin Component A thoroughly until a uniform color is achieved.

**Step 2:** Pull away the rubber cord separating the two components so that Components A and B can be mixed together. Knead the bag quickly and thoroughly for approximately 1 minute so that a homogenous primer is formed. The primer should be a uniform color, with no light or dark streaks present.

**NOTE: Kempertec R primer is extremely fast curing. Excessive mixing time reduces the available working time for the primer. Apply primer within 5 minutes.**

**Mixing of AC Primer**

**Step 1:** Premix Component A thoroughly with a clean spiral agitator.

**Step 2:** Determine the correct amount of catalyst powder, Component B, based upon ambient temperature (see table) Add catalyst powder Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed. DO NOT AERATE. DO NOT THIN PRIMER.

For 5 kg primer work packs, the following catalyst quantities are recommended:

<table>
<thead>
<tr>
<th>Material Temperature °F</th>
<th>Kempertec Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>35°F - 50°F</td>
<td>2 bags</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>50°F - 65°F</td>
<td>2 bags</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>65°F - 85°F</td>
<td>1 bag</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>&gt;85°F</td>
<td>1/2 bag</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

**NOTE: Kempertec AC primer is extremely fast curing. Excessive mixing time reduces the available working time for the primer. DO NOT break down units into smaller quantities – mix the entire work pack.**

**Primer Application**

Determine proper primer and coverage for each substrate material/condition referencing the Primer Selection Table and appropriate product data sheets. Listed coverage rates are estimates and may vary dependent upon substrate characteristics.

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.
Higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primers due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition. Where required, a second squeegee application of sand/primer slurry may be utilized. The primer slurry mixing ratio should be 25 lbs of Kemperol® Surfacing Sand and 12.5 lbs of Kemperol® Mixing Sand per 5 kg unit of primer.

For EP and EPS Primer applications, broadcast Kemperol Surfacing sand (0, #18) to refusal, at the approximate rate of 50 lbs / 100 ft² (2.4 kg/m²) into the wet primer to increase surface area and enhance adhesion. Remove excess sand after primer has fully cured prior to membrane application.

Curing time is approximately 12-16 hours for D and EP primers, approximately 3-4 hours for R and EP5 primers and approximately 1 hour for AC primer. Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.

NOTE: Exposure of primer in excess of eight (8) days (AC Primer in excess of 48 hours) and or premature exposure to moisture may require abrasion of contaminated surface and application of new primer coat.

Temporary Waterproofing: Primers may be utilized to achieve temporary waterproofing. The contractor is responsible for ensuring proper night time tie-off and seal to prevent water infiltration into the new assembly.

Kemperol Resin Mixing and Application

Higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primers due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition. Where required, a second squeegee application of sand/primer slurry may be utilized. The primer slurry mixing ratio should be 25 lbs of Kemperol® Surfacing Sand and 12.5 lbs of Kemperol® Mixing Sand per 5 kg unit of primer.

For EP and EPS Primer applications, broadcast Kemperol Surfacing sand (0, #18) to refusal, at the approximate rate of 50 lbs / 100 ft² (2.4 kg/m²) into the wet primer to increase surface area and enhance adhesion. Remove excess sand after primer has fully cured prior to membrane application.

Curing time is approximately 12-16 hours for D and EP primers, approximately 3-4 hours for R and EP5 primers and approximately 1 hour for AC primer. Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.

NOTE: Exposure of primer in excess of eight (8) days (AC Primer in excess of 48 hours) and or premature exposure to moisture may require abrasion of contaminated surface and application of new primer coat.

Temporary Waterproofing: Primers may be utilized to achieve temporary waterproofing. The contractor is responsible for ensuring proper night time tie-off and seal to prevent water infiltration into the new assembly.

Mixing of BRM/V210M Two-Component Resin

Step 1: Mix the liquid resin with a spiral KEMPEROL® agitator until the liquid is a uniform color, with no light or dark streaks present. If the ambient temperature is below 50 ºF (10 ºC) or above 75 ºF (24 ºC) add and mix a weather-related additive to the liquid resin.

KEMPEROL® UP-A Cold Activator should be added to the liquid resin when the ambient temperature is below 50 ºF (10 ºC). The activator should be mixed with the spiral agitator for 5 minutes or until both liquids are thoroughly blended.

KEMPEROL® UP-I Inhibitor should be added to the liquid resin when the temperature exceeds 75 ºF (24 ºC). The mixing instructions are the same as the cold activator.

Step 2: Add the Catalyst Powder to the liquid resin and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin.

NOTE: DO NOT break down units into smaller quantities – mix the entire work pack. It is not necessary to wait for the catalyst powder to dissolve before using the BRM Resin.

Resin/Fleece Application

Step 1: After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

Step 2: Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

Step 3: Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

Tool Use and Care

Brushes and rollers will remain supple and usable if they are kept moving in liquid resin. If allowed to sit, they will harden quickly as resin begins to cure. Rollers must be discarded once they stiffen. Brushes may be discarded or cleaned with MEK or acetone-based solvent. Roller handles can also be cleaned with MEK or acetone-based solvent. If solvent is used, the tool must air dry for twenty-four (24) hours before being reused for mixing and/or application. To minimize cleaning, wipe handle with clean, dry cloth every fifteen (15) to twenty (20) minutes and schedule work to avoid stopping.

Laps, Seams and Tie-offs

At all fleece seams, allow a 2" (5 cm) overlap for all side joints and a 4" (10 cm) overlap for all end joints. At membrane tie-offs, clean in-place membrane with MEK when resin has cured. Allow solvents to fully evaporate before application of new resin. DO NOT PRIME EXISTING KEMPEROL MEMBRANE.
**Flashings**
Install membrane flashings in accordance with the requirements/recommendations of KSA and as depicted on standard drawings and details. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete watertight system. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Assure full resin saturation of fleece.

**Curing and Staging**
Polyester resins cure most quickly and completely when exposed to UV light. For nighttime or concealed applications where exposure to natural light cannot be obtained, exposure to a UV light source or a supplemental source of hot air blown over the membrane surface will improve membrane cure.

Once the Kemperol membrane is in place, a minimum of one hour exposure at a distance of 24 inches (from the surface of the membrane to the face of the protective grill) using a UV source that casts a minimum of 6.5% UV-B is recommended.

Protect all areas where membrane has been installed. Do not work off installed membrane during application of remaining work before forty-eight (48) hours of curing. Movement of materials and equipment across installed membrane is not acceptable. If movement is necessary, provide complete protection of affected areas.

Protect finished membrane from damage by other trades by the use of a cushioning layer such as 1” thick extruded polystyrene insulation and an impact layer such as ½” thick exterior-grade plywood.

**General**
Wherever possible, install the flashings before installing the field membrane to minimize foot traffic over newly installed field membrane.

All membrane flashings shall be installed concurrently with the waterproofing membrane as the job progresses. Temporary flashings are not allowed without prior written approval from the Membrane manufacturer. Should any water penetrate the new waterproofing membrane because of incomplete flashings, the affected area shall be removed and replaced at the contractor's expense.

Provide a minimum vertical height of 8” for all flashing terminations. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope. **Do not flash over existing through-wall flashings, weep holes and overflow scuppers.**

**Metal Flashing – General**
Metal flashings shall be fabricated in accordance with the current recommendations of SMACNA and in accordance with standard drawings and project details.

Metal flashing flanges to which membrane is to be bonded shall be a minimum of four (4) inches in width, and secured to the structural deck, or to treated wood nailers secured to the structural deck, six (6) inches on center staggered with fasteners appropriate to the substrate type. The flanges shall be provided with a roughened surface that has been cleaned of all oil and other residue.

Metal edges that will be overlaid with membrane shall be provided with a 1/4” min. hemmed edge.

Apply primer, resin and fleece to metal flange, extending membrane to outside face of metal edging, and to vertical face of metal base/curb flashing.

**Membrane Flashing – General**
Membrane flashings shall be fabricated with primer appropriate for the substrate surface, resin of the same base chemical type as the field membrane, and fleece of the same weight as the field membrane unless specified otherwise.

Primer, resin, and fleece mixing and application methods as specified for field membranes are also suitable for membrane flashing.

Fleece shall overlap 2” (5 cm) minimum for all joints. Fleece shall be cut neatly to fit all flashing conditions without a buildup of multiple fleece layers. Work wet membrane with a brush or roller to eliminate blisters, openings, or lifting at corners, junctions, and transitions.

**Pipes, Conduits, and Unusually Shaped Penetrations**
Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Drains and Scuppers**
Acceptable drain and scupper materials are galvanized, galvalum, cast iron, cast aluminum, copper, hard PVC, and ABS.
Flashing material shall extend four (4) inches minimum onto drain or scupper flange and into drain/scupper body.

Install clamping ring if provided as part of the drain or scupper design. Install a strainer basket to prevent debris from clogging the drainage line.

**Hot Stacks**
Protect the membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 170 °F (76 °C). In all such cases flash to an intermediate “cool” sleeve.

Fabricate “cool” sleeve in the form of a flanged metal cone using galvanized metal, mechanically attached to the structure or wood nailers.

Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Flexible Penetrations**
Provide a weathertight gooseneck of round cross-section for each penetration or group of penetrations. Set in water cut-off mastic and secure to the structural substrate.

Acceptable gooseneck material is copper, of a sheet weight appropriate for the application.

Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

**Walls, Curbs and Base Flashings**
Wall, curb and base flashings shall be installed to solid substrate surfaces only. Adhering to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding or metal siding, and other similar materials is not acceptable.

Reinforce all transition locations and other potential wear areas with a four (4) inch wide membrane strip evenly positioned over the transition prior to installing the exposed flashing layer.

Reinforce all inside and outside corners with a four (4) inch diameter conical piece of membrane prior to installing the exposed flashing layer.

All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.

Extend flashing a minimum of four (4) inches onto the field substrate surface.

**Drip Edges and Gravel Stops**
Metal drip edges and gravel stops shall be installed to solid substrate surfaces or treated wood nailers only. Securement to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding or metal siding or coping, and other similar materials is not acceptable.

Before installing drip edges and gravel stops extend the membrane all the way to the edge of the structure. Once the membrane has fully cured install the drip edge or gravel stop over membrane. Prepare, prime and strip in the metal flange with a separate 8” wide strip of membrane adhered to both the securement flange and to the field membrane. Clean the field membrane prior to stripping in the flange. If the field membrane has been exposed for over 48 hour lightly abrade the surface of the membrane and clean with a solvent.

**Do not apply primer to the existing field membrane.**

For conditions where water infiltration behind the exposed drip edge or gravel stop face is possible, install a separate membrane bottom layer positioned behind the face area and extending a minimum of four (4) inches past the securement flange onto the field substrate prior to installing the drip edge or gravel stop.

**Field Fabricated Control or Expansion Joint Flashing**
Control or expansion joints in excess of two (2) inches in width and all joints subjected to vehicular traffic require the use of a separate engineered joint system.

Grind or otherwise bevel the inside edges of the joint opening to provide a smooth transition edge for the fleece. Apply bond breaker tape on both sides of the joint.

Flash typically consists of a fully saturated membrane bottom layer looped into the joint as a cradle, a compressible foam or rubber insert at 25% compression fitted into the joint with half the compressible material protruding above the joint, and a membrane top layer applied over the joint. Extend both fleece layers four (4) inches minimum onto the field substrate on both sides of the joint. An alternate approach is to insert the compressible foam or rubber insert into the joint completely sitting in the membrane cradle and fill it with a urethane trafficable grade sealer.
For insulated assemblies, wood nailers of a thickness to match the insulation/cover board must be installed on either side of an expansion joint.

**Electrical Conduit, Gas Lines and Lightning Protection**

Supports for electrical conduit and gas lines greater than one (1) inch in diameter require the use of a separate engineered support system.

Supports for electrical conduit and gas lines one (1) inch or less in diameter, and bases for lightning protection rods and cable, can be adhered directly to the membrane surface with a single-component, high quality polyurethane sealant.

**Alkalinity Protection Against Fresh Concrete**

Where placement of concrete or other cementitious material is required over sections of the roofing/waterproofing membrane and flashings, apply a coat of AC, EP or EP5 primer at approximately 100 ft² / 5 KG unit, with broadcast of kiln-dried silica sand at the rate of 50 lbs. / 100 SF into wet primer. This provides a protective surfacing for the membrane from the alkalinity of fresh concrete and other cementitious materials.

**NOTE:** Provide temporary surface protection and continuous cleaning with water and brush (high-pressure water if necessary) to eliminate settlement of concrete residues on in-place roofing/waterproofing membrane adjacent to area of concrete placement.

**Adhesion Key Surfacing Application**

Where placement of asphalt pavement or other adhered-type overburden is required over sections of the roofing/waterproofing membrane and flashings, apply one coat of AC, EP or EP5 primer at approximately 100 ft² / 5 kg unit, with broadcast of kiln-dried silica sand at the rate of 50 lbs./100 ft² into wet primer. This provides a membrane surface profile for enhanced bonding capability.

Protect finished application from all other contractors and activities during and after completion. Any damage to the system must be repaired as recommended by KSA Technical Department.

Remove all masking, protection, equipment, materials, and debris from the work and storage areas and leave those areas in an undamaged and acceptable condition.

Cured Kemper primers, resins, and surfacings may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

**NOTE:** Uncured Kemper primers, resins, and surfacings are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured primer, resin and surfacing away.
KEMPEROL® AC SYSTEM APPLICATION PROCEDURES

**Design Evaluation**

Review project specification to ensure conformance with Kemper System America, Inc. (KSA) requirements. Notify design professional and KSA Technical Department of any discrepancies prior to the performance of any work.

Evaluate site and building conditions. It is recommended that test cuts and test cores be performed to determine the layer-by-layer composition of the substrate assembly that the KSA materials will be applied over.

The performance of a mock-up application is recommended if there is a question regarding substrate assembly moisture, or regarding adhesion to uncommon substrate surfaces. This will help ensure the best possible application method.

**Material Storage**

All KSA components will be delivered to the site in original sealed containers/packaging. Define a storage area for all components that is cool, dry, out of direct sunlight, and in accordance with recommendations of KSA and relevant regulatory agencies. Roll goods must be stored horizontally on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls with damaged ends. Store solvent-bearing solutions, resins, additives, inhibitors and adhesives in accordance with the MSDS and/or local fire and regulatory authorities. Materials should not be stored in quantities that will exceed design loads, damage substrate materials, hinder installation or drainage.

Optimum storage of materials is between 65 – 70 °F (18 – 21 °C) in a controlled environment to facilitate mixing and fleece saturation. DO NOT store materials outside in cold weather, as the cooled materials will be difficult to mix and apply due to their thick consistency. DO NOT store materials outside in hot weather, as the heated materials will react too quickly and reduce working times significantly.

**Work Place Safety**

Provide and maintain positive ventilation and protection to workers for concealed and/or interior application or applications lacking sufficient natural air movements. Protect air intake path(s) of the building to prevent odor infiltration to the building interior. Coordinate protective measures with the Owner or his designated Representative.

Comply with requirements of OSHA, NIOSH or governing local authority for work place safety. When required, provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or his designated Representative. Contractor must be familiar with and observe OSHA Regulations CFR 1926/1910 (current issue) for use and handling of catalysts (organic peroxide).

**Environmental Requirements**

Application of Kemperol AC system may proceed while air temperature is between 35 – 105 °F (2 – 41 °C) providing the substrate is a minimum of 5 degrees above the dew point. Consult with KSA outside of this temperature range. Do not commence with the application of any KSA material during or with the threat of inclement weather and ensure that substrate materials are dry and free of contaminants.

Application of Kemperdur mineral-filled surfacing materials in temperatures between 35 – 40 °F is possible but not recommended due to poor self-leveling properties. Storage of materials in a warm location until application will help accelerate cure somewhat, as will the use of cold weather additives.

Application of Kemperol AC system when ambient temperature is below 35 °F is discouraged due to the potential of a frozen deck and dew point issues.

Application of Kemperol AC system in temperatures above 105 °F is possible but not recommended due to the potential for blistering from substrate vapor drive and reduced working times.

---

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Storage of materials in a cool location until application will retard cure, and application of materials in the late afternoon can alleviate the potential for blistering related to vapor drive.

Provide and maintain positive airflow over freshly applied Kemperol AC materials during entire curing period to facilitate complete cure. Natural airflow is typically sufficient for exterior applications, but locations such as beneath large mechanical units, at inside corners, at the base of high walls, and other similar areas where stagnant air may occur should be provided with powered fans.

**NOTE: Interior applications are not recommended due to odor and curing considerations.**

Protect building adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Provide protection for Contractor personnel and occupants of the structure and surrounding buildings as required complying with requirements of OSHA, NIOSH and/or governing local authority.

Where required by the Owner or his designated Representative, implement odor control and elimination measures before and during the application of the roofing/waterproofing materials. Control/elimination measures must be field tested at off-hours and typically consists of one (1) or multiple of the following measures:

1. Sealing of air intakes with activated carbon filters, and at joints against building exterior walls to prevent leakage of unfiltered air into occupied spaces.
2. Sealing of doorways, windows, and skylights with duct tape and polyethylene sheeting to prevent leakage of air into the building.
3. Erection and use of moveable enclosure(s) sized to accommodate work area(s) and stationary enclosure for resin mixing station equipped with mechanical air intake/exhaust openings, odor control air cleaners, and activated carbon filter at exhaust openings as required to clean enclosed air volume and to prevent odor migration outside the enclosure. Placement of odor elimination stations inside and outside of the enclosure(s) as required.

The Kemper System is a four-step application:

1. Preparation and cleaning of the substrate;
2. Application of primer suitable for substrate;
3. Application of the membrane;
4. Application of surfacing, coating or overburden, if required.

Immediately before the application of any component of the system, the substrate shall be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth-wipe or a combination.

**NOTE: Before opening the containers of any Kemperol material, protect hands and wrists with gauntlet-style neoprene gloves, and wear OSHA-approved eye protection. Use respiratory equipment if recommended by MSDS sheet for specific Kemperol material being applied.**

Kemper System America, Inc. materials are often installed in roofing and waterproofing assemblies that utilize additional materials not discussed in this Application Guide, including: asphaltic base and cap sheets; polyisocyanurate and extruded polyurethane foam insulation; high density polyisocyanurate foam and cementitious cover boards; drainage mats; water retention mats; concrete pavers; vegetated-type overburden. Please refer to individual Kemper System America, Inc. guide specifications for application information regarding the incorporation of these materials into a Kemper System assembly.

**Concrete**

New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by the KSA Technical Department. New or existing concrete shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5.

When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed ¼ inch (peak to valley). The substrate shall be sound and all spalls, voids and blow holes on vertical or horizontal surfaces must be repaired prior to placement of the primer coat. Areas of minor surface deterioration of ¼ inch (6 mm) or greater in depth shall be repaired to prevent possible ponding of the system, leading to excessive use of primer and resin. For concrete materials with a compressive strength of less than 3,000 psi contact the KSA Technical Department for substrate preparation requirements. Hollow-core panels, T-panels, and Twin-T panels shall have grouted joints between panels and shall be provided with mechanical securement from panel to panel.
Concrete shall be dry and confirmed by measuring the moisture level with the following methods:

- **ASTM F2170**: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.
- **ASTM F1869**: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. A maximum result is 3 lb/1,000 ft²/24-hour period.
- **ASTM D2216**: Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass. A maximum result is 6% moisture content by weight.
- **ASTM F2659**: Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter. Tramex Concrete Moisture Encounter Meter CME4 may be used to determine the moisture content of the top 3/4” of the concrete slab. A maximum acceptable reading is 5%.

**Masonry**

Walls shall be built with hard kiln dried brick or waterproof concrete block construction. Areas of soft or scaling brick or concrete, recessed or faulty mortar joints, or walls with broken, damaged or leaking coping shall be repaired prior to placement of the primer coat. Repair in a manner previously described for structural concrete repair. Walls shall be dry in accordance with the above referenced methods.

**Steel/Metal**

Clean and prepare metal surfaces to near white metal in accordance with SSPC - SP3 (power tool clean). Extend preparation a minimum of three (3) inches beyond the termination of the membrane flashing materials. Notch steel surfaces to provide a rust-stop. In addition to cleaning, all metal surfaces shall be abraded to provide a rough open surface. **A WIRE BRUSH FINISH IS NOT ACCEPTABLE.** Wipe prepared metal surface with MEK or other acceptable solvent cleaner prior to application of primer.

**Wood/Plywood**

Plywood shall be identified with American Plywood Association (APA) grade trademarks and shall meet the requirements of product standard PS1. Strip plywood joints, cracks, knot holes with Kemperol fleece in primer or resin.

**Existing Modified Bitumen Waterproofing**

Perform an adhesion test to evaluate the compatibility with the existing membrane. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.

Granule-surfaced membrane shall have all loose granules removed from the surface by vacuuming and power brooming. Smooth-surfaced membrane with applied coating shall have all loose coating removed. Where the adhesion results dictate, adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

**Existing Gravel Surfaced Bituminous and Coal Tar Pitch Waterproofing**

Do not install Kemperol membrane directly to coal tar pitch roofing systems. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Gravel-surfaced membrane shall have all loose gravel removed. Adhere polyisocyanurate foam insulation (R=6 min. for bituminous or R=20 min. or greater for coal tar to prevent the pitch from reaching 85 ˚F) and ½” cementitious cover board over the roof surface.

**Existing Single Ply Roofing**

Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind. Mechanically fasten or adhere polyisocyanurate foam insulation (R=6 min.) and ½” cementitious cover board over the roof surface.

**Other Substrate Surfaces**

Substrates not listed in the Primer Selection Table will require adhesion testing or approval by the KSA Technical and R&D Departments for acceptance and preparation procedures.

Kempertec primer/sand mix is the preferred material for all substrate leveling, crack and wall/deck repair and patching. Kempertec primer/sand mix is not intended to be used as a structural repair material.

Commercially-available NON-POLYMER MODIFIED cementitious repair mortars can also be used to make surface repairs to concrete, masonry, stone, and terra cotta substrate surfaces. Commercially-available two-component sealant can be used to fill and seal defects in wood and metal substrate surfaces. Gaps between materials are typically filled by the use of compressible backer rod, followed by application of polyurethane sealant.
A sound and even substrate surface shall be provided for all KSA material applications. Kemper System materials are not intended to span unsupported gaps and voids.

**Primer/Sand Options**
Kempertec AC primer/sand patching mix allows patching to be conducted as part of the priming operation. Kemperol AC membrane may be applied following a 1 hour curing period. Recommended for vertical repairs due to fast-set time. In addition, recommended for creating slope to drain to address localized drainage deficiencies.

**Sand Aggregate Specification and Size**
Kemperol Sands are round/angular grain silica, washed, kiln-dried and dust-free. They are used for patching, broadcasting to increase the surface area to enhance adhesion or to create slip resistant surfaces. Silica sand must be kept absolutely dry during storage and handling.

- Mixing Sand (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S-Grade blend) for aesthetic color quartz finished surfacing.

**Substrate Leveling, Sloping and Patching**
Substrate conditions are to be evaluated by the Design Professional, Contractor, the Owner, or designated Representative.

**NOTE: Any surface to be leveled or patched with primer/sand must first be primed with Kempertec AC primer.**

The ratio of primer to sand can be varied to create a mixture that provides the proper consistency for the intended application.

The patching mixture typically consists of a slurry of primer and appropriate sand in a 1:4 resin/primer to sand ratio by volume. Fill cavities with this compound with a trowel to achieve a even surface.

**Preparation of Joints and Cracks**
Joints, cracks, and fractures in the structural deck shall be prepared before installation of waterproofing membrane. Clean out cracks by brushing and oil-free compressed air. Fill crack with Kempertec primer/sand slurry, or two component polyurethane sealant. Allow for a minimum of twelve (12) hours cure or as required by Sealant Manufacturer. Moving joints or cracks larger than 1/4" should be stripped in with a strip of membrane. Joints, cracks and fractures may telegraph through the waterproofing membrane.

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, curing agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

After 72 hours the Contractor should perform random tests to determine tensile bond strength of membrane to substrate at the job site using an Elcometer Adhesion Tester Model 106 or similar device, or by the performance of a manual pull test. Contractor shall perform tests on completely cured membrane at the beginning of the Work, and at intervals as required assuring specified adhesion with a minimum of three (3) tests per 5,000 ft² (464.5 m²).

KSA requires a tested tensile bond strength of membrane to substrate greater than or equal to 150 psi (1.0 N/mm²). Alternatively, a manual 135° peel bond strength of membrane to substrate must confirm that cohesive failure of substrate or membrane occurs before adhesive failure of primer/substrate interface. This can be achieved through correct and proper surface preparation. Before priming of the surfaces, inspect and check the prepared substrate.

In the event the bond strengths are lower than the minimum specified and cohesive failure of the substrate is not the mode of failure, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation. Contractor shall immediately notify the KSA in the event tensile bond test results are below specified values.
Selection of Primer
Refer to the Substrate Primer Selection Table.

Mixing of AC Primer
Step 1: Premix Component A thoroughly with a clean spiral agitator.

Step 2: Determine the correct amount of catalyst powder, Component B, based upon ambient temperature (see table) Add catalyst powder Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed. DO NOT AERATE. DO NOT THIN PRIMER.

For 5 kg primer work packs, the following catalyst quantities are recommended:

<table>
<thead>
<tr>
<th>Material Temperature °F</th>
<th>Kemperol Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>35°F - 50°F</td>
<td>2 bags</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>50°F - 65°F</td>
<td>2 bags</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>65°F - 85°F</td>
<td>1 bag</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>&gt;85°F</td>
<td>1/2 bag</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

NOTE: Kempertec AC primer is extremely fast curing. Excessive mixing time reduces the available working time for the primer. DO NOT break down units into smaller quantities – mix the entire work pack.

Primer Application
Listed coverage rates are estimates and may vary dependent upon substrate characteristics.

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

Higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primers due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition.

Curing time is approximately 1 hour for AC primer. Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.

NOTE: Exposure of primer in excess of 48 hours or premature exposure to moisture may require removal and application of new primer. Primer application past the Kemperol membrane terminations requires surfacing with an approved material.

Temporary Waterproofing: Primers may be utilized to achieve temporary waterproofing. The contractor is responsible for ensuring proper night time tie-off and seal to prevent water infiltration into the new assembly.

Mixing of AC Resin
Step 1: Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color, with no light or dark streaks present.

Step 2: Add the Catalyst Powder, Component B, to resin Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin. The amount of Catalyst Powder must be adjusted according to the temperature (see table).

NOTE: Kemperol AC resin is extremely fast curing. Excessive mixing time reduces the available working time for the primer. DO NOT break down units into smaller quantities – mix the entire work pack.

For 10 kg resin work packs, the following catalyst quantities are recommended:

<table>
<thead>
<tr>
<th>Material Temperature °F</th>
<th>Kemperol Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>23°F - 35°F</td>
<td>4 bags</td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td>35°F - 50°F</td>
<td>4 bags</td>
<td>35</td>
<td>80</td>
</tr>
<tr>
<td>50°F - 70°F</td>
<td>4 bags</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>65°F - 85°F</td>
<td>2 bag</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>&gt;85°F</td>
<td>1 bag</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>
**Resin/Fleece Application**

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

**Tool Use and Care**

Brushes and rollers will remain supple and usable if they are kept moving in liquid resin. If allowed to sit, they will harden quickly as resin begins to cure. Rollers must be discarded once they stiffen. Brushes may be discarded or cleaned with MEK or acetone-based solvent. Roller handles can also be cleaned with MEK or acetone-based solvent. If solvent is used, the tool must air dry for twenty-four (24) hours before being reused for mixing and/or application. To minimize cleaning, wipe handle with clean, dry cloth every fifteen (15) to twenty (20) minutes and schedule work to avoid stopping.

**Laps, Seams and Tie-offs**

At all fleece seams, allow a 2” (5 cm) overlap for all side joints and a 4” (10 cm) overlap for all end joints. At membrane tie-offs, clean in-place membrane with MEK when resin has cured. Allow solvents to fully evaporate before application of new resin. **DO NOT PRIME EXISTING KEMPEROL MEMBRANE.**

**Flashings**

Install membrane flashings in accordance with the requirements/recommendations of KSA and as depicted on standard drawings and details. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete watertight system. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Assure full resin saturation of fleece.

**Curing and Staging**

Protect all areas where membrane has been installed. Do not work off installed membrane during application of remaining work before two (2) hours of curing. Movement of materials and equipment across installed membrane is not acceptable. If movement is necessary, provide complete protection of affected areas.

Protect finished membrane from damage by other trades by the use of a cushioning layer such as 1” thick extruded polystyrene insulation and an impact layer such as ½” thick exterior-grade plywood.

**General**

Wherever possible, install the flashings before installing the field membrane to minimize foot traffic over newly installed field membrane.

All membrane flashings shall be installed concurrently with the waterproofing membrane as the job progresses. Temporary flashings are not allowed without prior written approval from the Membrane manufacturer. Should any water penetrate the new waterproofing membrane because of incomplete flashings, the affected area shall be removed and replaced at the contractor’s expense.

Provide a minimum vertical height of 8” for all flashing terminations. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope. **Do not flash over existing through-wall flashings, weep holes and overflow scuppers.**

**Metal Flashing – General**

Metal flashings shall be fabricated in accordance with the current recommendations of SMACNA and in accordance with standard drawings and project details.

Metal flashing flanges to which membrane is to be bonded shall be a minimum of four (4) inches in width, and secured to the structural deck, or to treated wood nailers, six (6) inches on center staggered with fasteners appropriate to the substrate type. The flanges shall be provided with a roughened surface that has been cleaned of all oil and other residue.

Metal edges that will be overlaid with membrane shall be provided with a 1/4” min. hemmed edge.

Apply primer, resin and fleece to metal flange, extending membrane to outside face of metal edging, and to vertical face of metal base/curb flashing.
Membrane Flashing – General
Membrane flashings shall be fabricated with primer appropriate for the substrate surface, resin of the same base chemical type as the field membrane, and fleece of the same weight as the field membrane unless specified otherwise.

Primer, resin, and fleece mixing and application methods as specified for field membranes are also suitable for membrane flashing.

Fleece shall overlap 2” (5 cm) minimum for all joints. Fleece shall be cut neatly to fit all flashing conditions without a buildup of multiple fleece layers. Work wet membrane with a brush or roller to eliminate blisters, openings, or lifting at corners, junctions, and transitions.

Pipes, Conduits, and Unusually Shaped Penetrations
Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

Drains and Scuppers
Acceptable drain and scupper materials are galvanized, galvalum, cast iron, cast aluminum, copper, hard PVC, and ABS.

Flashing material shall extend four (4) inches minimum onto drain or scupper flange and into drain/scupper body.

Install clamping ring if provided as part of the drain or scupper design. Install a strainer basket to prevent debris from clogging the drainage line.

Hot Stacks
Protect the membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 170 °F. In all such cases flash to an intermediate “cool” sleeve.

Fabricate “cool” sleeve in the form of a flanged metal cone using galvanized metal, mechanically attached to the structure or wood nailers.

Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

Flexible Penetrations
Provide a weathertight gooseneck of round cross-section for each penetration or group of penetrations. Set in water cut-off mastic and secure to the structural substrate.

Acceptable gooseneck material is copper, of a sheet weight appropriate for the application.

Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

Walls, Curbs and Base Flashings
Wall, curb and base flashings shall be installed to solid substrate surfaces only. Adhering to gypsum-based panels, cementitious stucco, synthetic stucco, wood or metal siding, and other similar materials is not acceptable.

Reinforce all transition locations and other potential wear areas with a four (4) inch wide membrane strip evenly positioned over the transition prior to installing the exposed flashing layer.

Reinforce all inside and outside corners with a four (4) inch diameter conical piece of membrane prior to installing the exposed flashing layer.

All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.

Extend flashing a minimum of four (4) inches onto the field substrate surface.

Drip Edges and Gravel Stops
Metal drip edges and gravel stops shall be installed to solid substrate surfaces or treated wood nailers only. Securement to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding or metal siding or coping, and other similar materials is not acceptable.

Before installing drip edges and gravel stops extend the membrane all the way to the edge of the structure. Once the membrane has fully cured install the drip edge or gravel stop over membrane.
Prepare, prime and strip in the metal flange with a separate 8” wide strip of membrane adhered to both the securement flange and to the field membrane. Clean the field membrane prior to stripping in the flange. If the field membrane has been exposed for over 48 hour lightly abrade the surface of the membrane and clean with a solvent. **Do not apply primer to the existing field membrane.**

For conditions where water infiltration behind the exposed drip edge or gravel stop face is possible, install a separate membrane bottom layer positioned behind the face area and extending a minimum of four (4) inches past the securement flange onto the field substrate prior to installing the drip edge or gravel stop.

**Field Fabricated Control or Expansion Joint Flashing**

Control or expansion joints in excess of two (2) inches in width and all joints subjected to vehicular traffic require the use of a separate engineered joint system.

Grind or otherwise bevel the inside edges of the joint opening to provide a smooth transition edge for the fleece. Apply bond breaker tape on both sides of the joint.

Flashing typically consists of a fully saturated membrane bottom layer looped into the joint as a cradle, a compressible foam or rubber insert at 25% compression fitted into the joint with half the compressible material protruding above the joint, and a membrane top layer applied over the joint. Extend both fleece layers four (4) inches minimum onto the field substrate on both sides of the joint. An alternate approach is to insert the compressible foam or rubber insert into the joint completely sitting in the membrane cradle and fill it with a urethane trafficable grade sealer.

For insulated assemblies, wood nailers of a thickness to match the insulation/cover board must be installed on either side of an expansion joint.

**Electrical Conduit, Gas Lines and Lightning Protection**

Supports for electrical conduit and gas lines greater than one (1) inch in diameter require the use of a separate engineered support system.

Supports for electrical conduit and gas lines one (1) inch or less in diameter, and bases for lightning protection rods and cable, can be adhered directly to the membrane surface with a single-component, high quality polyurethane sealant.

Approved coatings, sealers, Surfacing Sand, or Ceramaqaurtz surfacing may be applied to Kemperol AC membranes to achieve various performance and/or aesthetic purposes.

IT IS RECOMMENDED that coatings and sealers be applied within 48 hours following membrane application in order to achieve the optimum bond. After 48 hours the membrane surface must be sanded or lightly abraded before the coatings may be applied. An MEK solvent wipe will be required to remove any abraded particles that remain.

When mixing coatings and sealers prior to application, DO NOT AERATE the material as this will result in bubbles and pinholes in the applied finish.

**Mixing of AC Finish Coating**

**Step 1:** Mix Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color, with no streaks present.

**Step 2:** Add the Catalyst Powder, Component B, to Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin. The amount of Catalyst Powder must be adjusted according to the ambient temperature (see table). For 5 kg primer work packs, the following catalyst quantities are recommended:

<table>
<thead>
<tr>
<th>Material Temperature °F</th>
<th>Kemperol Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>35°F - 50°F</td>
<td>2 bags</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>50°F - 65°F</td>
<td>2 bags</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>65°F - 85°F</td>
<td>1 bag</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>&gt;85°F</td>
<td>1/2 bag</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

**NOTE:** Kemperdur AC finish is extremely fast curing. Excessive mixing time reduces the available working time for the primer. **DO NOT break down units into smaller quantities – mix the entire work pack.**
**Smooth Coating Application**

Pour and spread the Kemperdur AC finish with a roller or brush over clean, cured membrane at the rate of approximately 100 \( \text{ft}^2/5 \text{ kg unit.} \\) Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

Following minimum one (1) hour cure time, apply an additional coat at the rate of approximately 100 \( \text{ft}^2/5 \text{ kg unit.} \\) Two coats are highly recommended to obtain uniform and full coverage, eliminating roller marks.

After completion of coating, avoid any traffic for a minimum of 6 hours.

**Aggregate Specification and Size**

All surfacing aggregates shall be washed, kiln-dried, dust-free, suitable for broadcast, round grain or angular, and sized as follows:

- **Mixing Sand** (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
- **Surfacing Sand** (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- **Surfacing Sand** (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- **Ceramaquartz** (30 mesh) (S Grade blend) for aesthetic color quartz finished surfacing.

**Aggregate Bonding and Sealing Resins**

For roof surfacing applications, the following combinations of bonding resin, aggregate, and sealing resin are acceptable:

- Kemperol AC Resin (w/o fleece)/aggregate/Kemperdur AC Finish.
- Kemperdur AC Finish/aggregate/AC Finish.

For adhesion key, apply Kemupertec AC Primer/kiln-dried sand.

**Roofing and Flashing Aggregate Surfacing Application**

**Step 1:** Apply a bonding coat of Kemperol AC Resin or Kemperdur AC Finish at the rate of approximately 100 \( \text{ft}^2/5 \text{ kg unit.} \\)

**Step 2:** Broadcast Surfacing Sand or Ceramaquartz in excess into a bonding coat application at the rate of 50 lbs./100 ft².

**Step 3:** Following minimum 1 hour cure time remove loose/unembedded mineral aggregate by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean mineral aggregate as required to provide full embedment and coverage of membrane.

**Step 4:** Seal aggregate surface with a sealing coat application of Kemperdur AC Finish at the rate of approximately 100 \( \text{ft}^2/5 \text{ kg unit.} \\) After completion of mineral aggregate broadcasting, avoid any traffic for a minimum of six (6) hours to allow for surfacing to cure.

**Alkalinity Surfacing System Against Fresh Concrete**

Kemperol AC resins are resistant to the alkalinity of fresh concrete and other cementitious materials. An additional protective surfacing treatment is not required.

**Adhesion Key Surfacing Application**

Where placement of asphalt pavement or other adhered-type overburden is required over sections of the roofing/waterproofing membrane and flashings, apply one (1) coat of AC Finish or Primer at 125 \( \text{ft}^2/5 \text{ kg unit, with} \\) broadcast of kiln-dried silica sand at the rate of 50 lbs./100 ft² into the wet resin. This provides a membrane surface profile for enhanced bonding capability.

Concrete surfaces to receive the AC Traffic Coating system must be properly designed and constructed in order to assure effective coating performance. Determine whether the concrete contains sufficient expansion/cold joints. If the joint design is not adequate, additional joints must be created in the AC Traffic Coating system, at minimum every 20’.

**Mixing of AC Traffic Coating**

**Step 1:** Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color, with no light or dark streaks present. For applications on ramps and other sloped surfaces only, KEMPEROL® TX Thixotropic additive shall be added to directly into Component A and mixed in. The amount of Thixotropic additive is to be adjusted based on percent of the incline (see table).
Step 2: Add the Catalyst Powder, Component B, to resin Component A and mix with the same agitator for 1 minute. The amount of Catalyst Powder must be adjusted according to the temperature (see table).

For 10 kg resin/23 kg mineral filler work packs, the following catalyst quantities are recommended:

<table>
<thead>
<tr>
<th>Incline Slope</th>
<th>TX Thixotropic Quantity to Add to Comp A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 5%</td>
<td>10 g</td>
</tr>
<tr>
<td>5 - 7%</td>
<td>20 g</td>
</tr>
<tr>
<td>7 - 10%</td>
<td>30 g</td>
</tr>
<tr>
<td>11 - 20%</td>
<td>60 g</td>
</tr>
</tbody>
</table>

Step 3: Transfer the catalyzed mixture in to a large clean separate pail and gradually add Component C (23 kg filler) to the liquid while mixing continuously with a spiral agitator for an additional 1 minute until a smooth, lump free mix is produced.

**NOTE:** Kemperdur AC traffic coating is extremely fast curing. Excessive mixing time reduces the available working time for the primer. DO NOT break down units into smaller quantities – mix the entire work pack.

### Application of Kemperdur AC Surfacing and Aggregate

**Step 1:** Empty the pail of KEMPERDUR® AC Traffic Coating mixture onto the primed concrete surface or over fully cured membrane and spread with a ¼” x ¼” x ¼” square-notched steel trowel at the rate of approximately 100 ft²/33 kg unit. If applying over cured membrane follow membrane re-coating guidelines.

**Step 2:** Immediately de-aerate the coating in a cross direction with a porcupine (spiked) roller in order to release the air bubbles that develop within the coating.

**Step 3:** Broadcast selected aggregate to excess into AC Traffic Coating until a uniform dry aggregate layer has been achieved. Aggregate will initially sink into surfacing, requiring the application of additional aggregate. Sufficient aggregate application is achieved when there are no wet spots remaining. Aggregate application rate is typically 100 lbs./100ft².

**Step 4:** Allow the aggregate-filled Kemperdur AC Traffic Coating to cure for approximately 60 minutes. Times may vary depending on temperatures. Remove excess aggregate by brooming and vacuuming.

### Application of Sealer

Pour and spread the Kemperdur AC finish with a roller or brush over the aggregate at the rate of approximately 60 ft²/5 kg unit. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

After completion of mineral aggregate surfacing and sealing, avoid any traffic for a minimum of six (6) hours.

### Protection

Protect finished application from all other contractors and activities during and after completion. Any damage to the system must be repaired as recommended by KSA Technical Department.

### Clean-Up & Disposal

Remove all masking, protection, equipment, materials, and debris from the work and storage areas and leave those areas in an undamaged and acceptable condition.

Cured Kemper primers, resin, and surfacings may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

**NOTE:** Uncured Kemper primers, resins and surfacings are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured primer, resin and surfacing away.

**DISCLAIMER:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
General
When two plies of Kemperol membrane overlap, the membrane plies should be installed wet-in-wet wherever possible. This principle applies to all membrane overlaps including two-ply applications, overlaps, joints, seams, patches and repairs. When this is not possible due to weather, jobsite conditions or other unforeseen circumstances, or damage to an existing in-place Kemperol membrane system, a second ply of membrane may be installed as follows:

Original Installation
New Kemperol membrane can be adhered directly to in-place membrane to accomplish overnight tie-ins, allow completion of flashings prior to field membrane installation, and other similar installation conditions, by means of the following procedure:

Step 1: Thoroughly clean the in-place membrane with MEK (methyl ethyl ketone) to achieve a minimum 2” (5 cm) overlap area.

Step 2: After the solvent has been allowed time to fully evaporate, apply the new Kemperol membrane directly to the in-place membrane.

NOTE: DO NOT apply primer to the in-place Kemperol membrane surface.

Membrane Patching and Repairs

Step 1: Check the membrane area to determine the extent of repair. Cut and remove the blistered/damaged membrane back to a securely bonded point to the substrate.

Step 2: Mechanically grind off any remaining resin and primer and prepare the substrate.

Step 3: Apply tape around the area to be primed and apply the appropriate Kempertec primer to the exposed substrate surface.

DO NOT apply primer to the existing Kemperol membrane.

Step 4: Cut a rectangular or circular piece of Kemperol fleece a minimum of 2” (5 cm) larger in all directions of the repair area.

Step 5: Thoroughly pre-clean the existing membrane with MEK to remove dirt and other similar contaminants and mechanical abrade the area. Allow the solvent to fully evaporate.

Step 6: Apply tape to the existing membrane around the area to receive the new membrane patch.

Step 7: Apply the Kemperol resin to the taped-off area, imbed the fleece and complete the membrane saturation.

Step 8: After the patch has thoroughly cured, re-apply membrane coating/surfacing as needed to match the existing in-place system.
KEMPER SYSTEM APPLICATION TIPS

**General Installation DO’S**
1. **Do** mask off and protect all areas not scheduled to receive the membrane system. Primers and Resins may not be removed from porous surfaces.
2. **Do** use personal protection equipment, such as gloves, safety glasses and others required by local, state and federal regulations.
3. **Do** make sure the temperature is always five (5) degrees above the dew point before application.
4. **Do** use Kemper System supplied tools and naps, as they are engineered for the application. Commodity naps will not work with the Kemperol system.
5. **Do** keep mixing area fully shaded from sun throughout the day and protected from extreme heat and cold.
6. **Do** keep tools moving in the liquid resins. If the tools sit still for even a short while, they will quickly stiffen and have to be discarded.
7. **Do** wipe tools, power drills and hands frequently with clean, dry rags to maintain tools and avoid messy work.

**General Installation DONT’S**
1. **Do Not** store product in extreme temperatures and direct sunlight, as that may affect the curing.
2. **Do Not** apply product in inclement weather, including fog, or when any moisture source is present.
3. **Do Not** break work packs. The product comes pre-packed and all components must be fully mixed.
4. **Do Not** store any foreign materials near the mixing area.
5. **Do Not** throw uncured resins away. Uncured resins must be handled as a hazardous material, in accordance with local, state and federal regulations.

**Primer Installation DO’S**
1. **Do** conduct a substrate moisture test before priming. If there is moisture present, primer may bubble and vapor drive may cause pin holes. If this happens, primer will have to be re-applied.
2. **Do** apply primer in a cross directional method to fully cover and saturate the surface.
3. **Do** extend primer a maximum of 1/4” beyond where the membrane will terminate.
4. **Do** allow primer to cure fully before applying membrane. In cold temperatures, primer may require a longer time to cure.
5. **Do** allow all remaining primer to cure in their original containers before disposing of the cans.
6. **Do** use Kempertec primer/sand mix for substrate repair, patching and leveling.

**Primer Installation DONT’S**
1. **Do not** allow primed surface to become dirty or dusty because it will greatly reduce adhesion to the membrane, requiring repriming.
2. **Do not** leave primed surfaces exposed for more than 8 days.
Membrane Installation

**DO’S**

1. **Do** pre-cut fleece as much as practical to provide a consistent treatment of similar items and to maximize an overall uniform appearance.

2. **Do** add weather-related additives, when required. UP-I Inhibitor for BRM/V210M when ambient temperature is above 75°F (24 ºC). UP-A Cold Activator for BRM/V210M when ambient temperature is below 50 °F (10 ºC). And A2K-PUR Accelerator for 2K-PUR when ambient temperature is below 50 °F (10 ºC).

3. **Do** install all flashings and detail work first, then do the field.

4. **Do** use a chalk line to mark fleece sections parallel to each other, and ensure even 2” (5 cm) overlaps and straight edges at the terminations. The minimum laps onto the substrate are 4” (10 cm) for horizontal terminations and 8” (20 cm) for vertical terminations.

5. **Do** make sure all air bubbles are worked out and no under-saturated dry spots remain. Correct saturation will leave no dry spots and a slight texture of the fleece. Pay careful attention to corners and junctions to avoid air pockets and small openings. It is easier to check your work as you go and correct deficiencies before the resin begins to cure, than to cut out and re-apply membrane later.

6. **Do** flood the fleece edges at terminations with enough additional resin to provide a resin cant (without dripping).

7. **Do** allow membrane to cure completely before applying a topcoat. In cold temperatures membrane may require a longer time to cure.

---

**DON’T’S**

1. **Do not** store catalyst powder near the UP-A Cold Activator, UP-I Inhibitor, or water. The combination of the materials will result in a violent, corrosive chemical reaction.

2. **Do not** cut the fleece with dull or inadequate scissors. This results in distorted edges and sloppy details. Use a straight edge and pencil to provide clean, straight lines for cutting.

3. **Do not** apply membrane to a moist surface -- this will lead to membrane failure.

4. **Do not** use wet or soiled fleece. Using wet or soiled fleece will cause membrane failure.

5. **Do not** use resin that has started to gel. Once it begins to gel, it will not saturate the fleece properly.

---

**DISCLAIMER:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.

Rev 07/2015
KEMPEROL® MAINTENANCE AND REPAIR CONSIDERATIONS

Maintenance Program

Kemper System membranes are typically maintenance-free. However, problems with other building components, mechanical equipment, etc., can occur, so a maintenance program involving periodic inspections is recommended:

1. Inspect the portion of the building where Kemperol waterproofing materials have been installed at least twice a year to remove debris from drains and scuppers to ensure proper drainage.

2. For applications where physical or chemical abuse of the Kemper System materials is anticipated, inspect all visible Kemperol waterproofing materials for indications of damage.

3. Inspect metalwork, masonry walls, copings, sealants, mechanical equipment, etc., for deterioration and make repairs as required.

Do’s and Don’t’s

Kemperol membranes are tough and durable, and are chemically resistant to most materials encountered in normal building environments.

However, the following conditions can result in damage to the Kemperol membrane:

1. Vehicular traffic directly over Kemperol membrane, dragging of equipment and materials over the Kemperol membrane, and other types of similar physical abuse may damage Kemperol membrane. Patching of the membrane may be sufficient, but replacement of the membrane for aesthetic considerations may be necessary.

2. Kemperdur mineral-filled surfacings are generally unaffected by normal rubber-tired vehicular and pedestrian traffic, provided that the entire waterproofing and substrate assembly has been specifically designed for this type of service. Deterioration of the surfacing aggregate by fracturing, crushing, or erosion is considered normal wear and tear and is not indicative of surfacing failure. Even mineral-filled surfacings can be damaged; mechanical abuse is excluded from warranty coverage.

3. The use of a separating layer such as rubber pads or feet is recommended when furniture, planters, mechanical equipment, etc. will be placed directly onto mineral-filled surfacing.

4. Depending on concentration and dwell time, alkaline and acidic solutions, and aggressive solvents will damage Kemper System materials. Replacement of the damaged membrane area is usually required in these instances.

5. Kemper System materials will not be affected by incidental contact with ethylene glycol, machine oil, lubricating grease, cooking grease, fuel oil, gasoline and aviation fuel, and low-solvent pH neutral cleaning materials. Pooling of contaminants on the KSA materials may result in deterioration depending on concentration, dwell time, and contaminant type, so prompt removal of spilled contaminants is always recommended. Chemical damage due to prolonged contact is excluded from warranty coverage.

Repair Methods

In the event that repairs to Kemper System materials are required, the following repair methods are recommended:

1. In an emergency, if it is obvious that water infiltration through the Kemper System materials is occurring, temporary repairs can be made by building maintenance personnel with urethane sealant/caulking without affecting warranty coverage.

2. Permanent repairs, flashing of new penetrations, and other building modifications that require work to the Kemperol membrane system must be performed by an Authorized Applicator skilled in the application of Kemperol waterproofing materials.

3. Surfacing materials are considered to be wearing surfaces, and are expected to require periodic maintenance, repair, and possible reapplication depending on the extent of traffic to which the Kemperol membrane system is exposed. This type of work must be performed by an Authorized Applicator skilled in the application of Kemperdur surfacing materials.
Maintenance of Kemperdur surfacing materials is typically required to address one of the following two conditions - staining, and localized damage.

Stains can be caused by food, wine, flower blossoms, rusting furniture, airborne contaminants, etc. Some stains can be removed in their entirety, but others can only be partially removed or lightened.

Whenever practical, stain-causing materials should not be placed directly on the surfacing.

Of course, stains will eventually occur. When they do, the following cleaning procedure is suggested:

1. Use a solution of a pH-neutral or mildly acidic cleaner such as Simple Green or Orange Crystal Concentrate and water. Follow manufacturer’s instructions regarding dilution ratio.

2. Pretreat problem stains with a full-strength cleaner application; allow cleaner to remain on the stained area for a few minutes.

3. Lightly scrub the surfacing with a medium-stiff natural bristle brush to loosen contaminants. DO NOT scrub so hard as to remove surfacing aggregate or coating.

4. Thoroughly rinse the surfacing to remove all cleaner residue and contaminants.

5. Pressure washing will enhance this cleaning procedure, but care must be taken so that damage to the surfacing or membrane does not occur.

As with all cleaning methods, excessive chemical, mechanical or abrasive cleaning methods can bleach or damage the Kemperdur surfacing materials, so reasonable care is required.

It is recommended that alternative cleaning materials such as Oxi-Clean or other oxidizing cleaners be applied first in an inconspicuous area to determine their effectiveness and the degree, if any, change in surface appearance caused by their use.

Kemperdur surfacing materials that are scraped, chipped, or otherwise damaged are best repaired by the use of Kemperdur sealers or coatings. For best results, this type of work must be performed by an Authorized Applicator skilled in the application of Kemperdur surfacing materials.

Even with the best cleaning and repair methods, it is often difficult to blend cleaned/repaired areas into the surrounding surfacing material so that there is no difference in appearance.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>KEMPEROL® Substrate Preparation Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substrate Repair and Patching Materials</td>
</tr>
</tbody>
</table>

| KEMPERTEC® Primers                         |
| Substrate Primer Selection Table           |

| KEMPEROL® Waterproofing and Roofing Resins |

| KEMPEROL® Additives                        |

| KEMPEROL® Reinforcing Fleece               |

| KEMPERDUR® Surfacing Materials             |
| Surfacing Selection Table                  |

| KEMPEROL® Application Tools                |

**NOTE:** SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.
# Product Information

## SUBSTRATE PREPARATION MATERIALS

<table>
<thead>
<tr>
<th>Material</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cementitious Repair Mortars</strong></td>
<td>Quick-dry modified Portland cement-based mortars are typically used to repair surface defects in concrete and masonry substrates, and to re-pitch substrate surfaces. Repairs in excess of 1&quot; in depth often utilize pea gravel mixed with the mortar. Similar products are available that can be used to repair stone, terra cotta, and brick. A selection of materials is listed.</td>
</tr>
<tr>
<td><strong>Polyurethane Sealant</strong></td>
<td>Two-component, polyurethane sealant is typically used to seal cracks and voids in a variety of substrates. Urethane sealant can also be used with backer rod to fill gaps between building components, and to achieve a smooth transition at uneven locations. A selection of materials is listed.</td>
</tr>
<tr>
<td><strong>KEMPERTEC® EP and EP5 Primers With Kiln-Dried Sand</strong></td>
<td>A repair mortar or slurry can be created by mixing KEMPERTEC® epoxy-based primers with kiln-dried mixing sand. The mix ratio can be varied to suit the site condition, eg., from 1:4 (1 part primer to 4 parts sand) for repair of surface defects such as spalls, to a ratio of 1:1 for a slurry repair over an uneven substrate surface. <strong>NOTE: Intended for use with concrete, masonry, and stone substrates.</strong></td>
</tr>
<tr>
<td><strong>KEMPERTEC® D and R Primers With Kiln-Dried Sand</strong></td>
<td>A repair mortar or slurry can be created by mixing KEMPERTEC® urethane-based primers with kiln-dried mixing sand. The mix ratio can be varied to suit the site condition, eg., from 1:4 (1 part primer to 4 parts sand) for repair of deep surface defects such as gaps and gouges, to a ratio of 1:1 for a slurry repair over an uneven substrate surface. <strong>NOTE: Intended for use with metal and wood substrates.</strong></td>
</tr>
<tr>
<td><strong>Mixing Sand</strong></td>
<td>Kiln-dried #00, #35 (0.3 – 0.6 mm) graded sand suitable for mixing with epoxy and urethane primers to create repair mortars and slurries for use in substrate preparation. <strong>NOTE: Do not use as surfacing sand.</strong></td>
</tr>
</tbody>
</table>

SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.
Substrate damage that may be structural in nature must be evaluated by a licensed professional architect or engineer. Repair of structural damage is not addressed by this manual and is not the responsibility of Kemper System America, Inc.

The substrate repair and patching materials described below have been used by the trade in the field in conjunction with KEMPEROL® materials, and been found to be acceptable for substrate leveling and patching. The cure times shown are minimum days required, and may vary depending upon temperature and relative humidity. This is not intended to be a comprehensive list; other repair materials of similar composition are likely to provide acceptable results. After placement of the patch or infill materials, most surfaces must be mechanically ground, bartered, sandblasted or scarified to remove any cementitious laitance (the weak surface which occurs during the placement and setting process) and other contaminants.

Repair of concrete substrate is dependent on the type of extent of the deterioration. The following are basic types of repair materials, a combination of which may be required to achieve proper repair.

**Bonding Agent/Rebar Coating**

MasterEmaco P124 (BASF)

Requires subsequent application of Manufacturer's surfacing or repair mortar.

Level Set Primer (ProSpec)

Requires subsequent application of Manufacturer's surfacing or repair mortar.

**Profiling/Surface Repair Mortar**

MasterEmaco N 300CI (BASF)

Single-component polymer modified repair mortar for surface repairs of minimum 1/8", maximum 1/4" thickness. Typical 3-7-day curing required prior to KEMPERTEC® primer application.

Concrete Resurfacer (ProSpec)

Single-component polymer modified, cement based repair mortar for surface repairs of minimum 1/8", maximum 1/2" thickness. Typical 1-3-day curing required prior to KEMPERTEC® primer application.

**Horizontal/Vertical Repair Mortar**

MasterEmaco T 310CI (BASF)

Single-component polymer modified repair mortar for surface repairs of minimum 1/4", maximum 1" (per lift) thickness. Can be extended 3/8" pea gravel for repairs of greater depth. Typical 3-7-day curing required prior to KEMPERTEC® primer application.

Vinyl Concrete Patch (ProSpec)

One-component modified repair mortar for surface repairs of minimum 1/16", maximum 2" (per lift) thickness. Can be extended 3/8" pea gravel for repairs of greater depth. Typical 1-3-day curing required prior to KEMPERTEC® primer application.
Brick, Stone, & Terra Cotta Patching Materials

Universal Repair Materials/Sealant

MasterEmaco T 1061 Rapid Mortar (BASF)
Single-component modified repair mortar for surface repairs of minimum 1/2”, maximum 2” (per lift) thickness. Can be extended 3/8” pea gravel for repairs of greater depth. Typical 24 hour curing required prior to KEMPERTEC® primer application.

Premium Patch 200 (ProSpec)
Single-component polymer modified, fiber reinforced repair mortar for surface repairs of minimum 1/2”, maximum 2” (per lift) thickness. Can be extended 3/8” pea gravel for repairs of greater depth. Typical 1-3 days curing required prior to KEMPERTEC® primer application.

Vertical/Overhead Repair Mortar

MasterEmaco N 350CI (BASF)
Single-component polymer modified repair mortar for surface repairs of minimum 1/8”, maximum 2-3/4” (per lift) thickness. Typical 3-7-day curing required prior to KEMPERTEC® primer application.

BlendCrete (ProSpec)
One-component modified repair mortar for surface repairs of minimum 1/4”, maximum 2” (per lift) thickness. Typical 1-3-day curing required prior to KEMPERTEC® primer application.

Repair of brick, stone, and terra cotta substrate is dependent on the type of substrate material, the extent of the deterioration, and whether or not the repair needs to match the appearance of the substrate.

Repair materials indeed for use with concrete substrates are normally not appropriate for use with brick, stone, and terra cotta.

The following are basic types of repair and restoration materials recommended by the listed manufacturers for each substrate type. However, as these are specialty materials, close consultation with the material manufacturers is recommended. The use of associated surface cleaners and bonding agents may be required to achieve satisfactory results.

Limestone/Sandstone Repair Mortar
Jahn M70 (Cathedral Stone Products)
Custom System 45 (Edison Coatings)

Brick/Terra Cotta Repair Mortar
Jahn M100 (Cathedral Stone Products)
Custom System 45 (Edison Coatings)

Marble Repair Mortar
Jahn M120 (Cathedral Stone Products)
Custom System 45 (Edison Coatings)

Granite/Bluestone Repair Mortar
Jahn M160 (Cathedral Stone Products)
Custom System 45 (Edison Coatings)

Repair of small cracks, gaps and joints in most substrate materials can be made by using a high-quality single component gun-grade urethane sealant. Silicone-based sealants are not acceptable.

Deep cracks will require the use of a backer rod prior to the application of the urethane sealant material. The sealant must be smoothed out flush with the substrate; tooling is not required.

The intent is to prevent the loss of liquid primer and resin materials, and to achieve a continuous substrate surface that will provide full support of the Kemper membrane system.

Urethane Sealant
Sonneborn NP1 (Sonneborn)
DynaTrol 1-XL (Pecora)

Note: Any products not listed above must be reviewed and approved by KSA Technical Department.
SURFACING AND MIXING SAND

Product Description

<table>
<thead>
<tr>
<th>U.S. Sieve No.</th>
<th>Sieve Opening mm/inch</th>
<th>% RET</th>
<th>% PASS</th>
<th>% RET</th>
<th>% Pass</th>
<th>% RET</th>
<th>%Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>1.68/</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.1</td>
<td>98.4</td>
</tr>
<tr>
<td>14</td>
<td>1.4/0.555</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>100.0</td>
<td>23.4</td>
<td>75.5</td>
</tr>
<tr>
<td>16</td>
<td>1.18/0.469</td>
<td>-</td>
<td>-</td>
<td>1.6</td>
<td>98.4</td>
<td>48.1</td>
<td>27.4</td>
</tr>
<tr>
<td>18</td>
<td>1.00/0.394</td>
<td>-</td>
<td>-</td>
<td>22.8</td>
<td>75.5</td>
<td>14.3</td>
<td>13.1</td>
</tr>
<tr>
<td>20</td>
<td>0.850/0.331</td>
<td>-</td>
<td>-</td>
<td>32.3</td>
<td>27.4</td>
<td>6.9</td>
<td>6.2</td>
</tr>
<tr>
<td>25</td>
<td>0.710/0.278</td>
<td>0</td>
<td>100.0</td>
<td>28.2</td>
<td>13.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>0.600/0.234</td>
<td>2.3</td>
<td>97.7</td>
<td>8.8</td>
<td>6.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>35</td>
<td>0.500/0.197</td>
<td>33.8</td>
<td>63.9</td>
<td>3.1</td>
<td>3.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>40</td>
<td>0.425/0.165</td>
<td>23.3</td>
<td>40.6</td>
<td>1.1</td>
<td>2.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>45</td>
<td>0.355/0.139</td>
<td>24.9</td>
<td>15.7</td>
<td>.7</td>
<td>1.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>50</td>
<td>0.300/0.0117</td>
<td>11.6</td>
<td>41.4</td>
<td>8</td>
<td>.7</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Composition (Wt%)

<table>
<thead>
<tr>
<th></th>
<th>SiO₂</th>
<th>Al₂O₃</th>
<th>CaO</th>
<th>Fe₂O₃</th>
<th>K₂O</th>
<th>TiO₂</th>
<th>Na₂O</th>
<th>MgO</th>
<th>L.O.I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
<td>99.40</td>
<td>0.13</td>
<td>0.03</td>
<td>0.03</td>
<td>0.02</td>
<td>0.02</td>
<td>0.01</td>
<td>0.01</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Hardness on Moh’s scale: 6-8
Specific Gravity: 2.65

Use (Surfacing Sand)

Used with EP/EP5 primers to enhance the bond between the primer and resin layers. Also, used with EP/EP5/AC primers to create an alkaline resistant or adhesion key surfacing. Can also be used as a utility grade surfacing aggregate for use with KEMPERDUR® aggregate bonding and sealing resin. Refer to individual data sheets for usage information.

Use (Mixing Sand)

Used in with resins and primers to create a repair mortar or slurry.

Storage

Store in a dry and cool environment.

Ordering Information

Item #:
- Surfacing Sand #0 700-AG-001 50 lb bag
- Surfacing Sand #1 700-AG-106 100 lb bag

Mixing Sand #00 700-AG-002 50 lb bag

Rev. 07/2015
Product Information

KEMPETEC® PRIMERS

KEMPETEC® D PRIMER  Two-component urethane primer intended for use with metal, wood, and mineral-surfaced cap sheet substrates. Provides typical 30 minute pot life and 12 hour cure time.

KEMPETEC® R PRIMER  Two-component, quick-cure, urethane primer intended for use with metal, wood, and mineral-surfaced cap sheet substrates. Provides typical 5-10 minute pot life and 3 hour cure time.

KEMPETEC® EP PRIMER  Two-component epoxy primer intended for use with concrete, masonry, and stone substrates. Requires broadcast of kiln-dried Surfacing sand. Provides typical 30 minute pot life and 16 hour cure time.

KEMPETEC® EPS PRIMER  Two-component, quick-cure, epoxy primer intended for use with concrete, masonry, and stone substrates. Requires broadcast of kiln-dried Surfacing sand. Provides typical 20 minute pot life and 4 hour cure time.

KEMPETEC® AC PRIMER  Two-component, quick-cure, polymethyl methacrylate (PMMA) primer intended for use with concrete, masonry, stone, metal and wood substrates. Provides typical 15 minute pot life and 30 minute cure time.

NOTE: Times will be shorter in hot weather and longer in cold weather.

NOTE: SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.
The following table provides recommendations for priming of properly prepared substrates, and should be used as a guideline when specifying KEMPETEC® primer. KEMPETEC® primers are used to improve the adhesion of KEMPEROL® membranes to substrate surfaces. The primer application rate will vary and should be adjusted depending on the substrate absorbency. See individual KSA product data sheets, material safety data sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA primers.

Note: All substrates must be prepared as necessary prior the application of primers. Surface must be free from gross irregularities, loose, unsound or foreign materials such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate.

### Substrate Primer Selection Table

<table>
<thead>
<tr>
<th>Substrate Preparation For Priming</th>
<th>D/R Primers</th>
<th>EP/EP5 Primers</th>
<th>AC Primer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cementitious and Masonry Substrates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Structural Concrete, Lightweight Structural Concrete  Scarify, shot blast, grind to remove laitance and open up pores</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Granite, Marble  Scarify, shot blast, grind to remove polished surface and open up pores</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Sandstone, Limestone, Synthetic Stone  Scarify, shot blast, grind to open up pores</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Porous/Air-Entrained Concrete, Concrete Masonry Block  Scarify, shot blast, grind to open up pores</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Repair and Leveling Mortars  Scarify, shot blast, grind to open up pores</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Clay Brick, Terra Cotta, Tile  Scarify, shot blast, grind to remove glazed surface and open up pores</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Metal Substrates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bare Aluminum, Lead, Copper, Zinc  Grind to remove corrosion, then MEK/Acetone Wipe</td>
<td>Y</td>
<td>T</td>
<td>Y</td>
</tr>
<tr>
<td>Patina Copper  MEK/Acetone Wipe</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>De-Rusted Steel, Galvanized Steel  Grind to remove corrosion, then MEK/Acetone Wipe</td>
<td>Y</td>
<td>T</td>
<td>Y</td>
</tr>
<tr>
<td>Black Pipe, Cast Iron  Grind to remove corrosion and coating, then MEK/Acetone Wipe</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Stainless Steel  Grind to open up pores, then MEK/Acetone Wipe</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Kynar Finish, Ceramic Coated, and Painted Metal  Grind to remove coating, then MEK/Acetone Wipe</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td><strong>Wood Substrates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plywood  Exterior grade only</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Wood Plank  Requires insulation, cover board, or cap sheet</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Dimensional Lumber  Direct application for flashings only</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Y - Recommended  N - Not Recommended  T - Adhesion Test Required  O - Optional with 2K-PUR for Most Applications

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224  
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net

Rev. 07/2015
<table>
<thead>
<tr>
<th>Substrate Preparation For Priming</th>
<th>D/R Primers</th>
<th>EP/EP5 Primers</th>
<th>AC Primer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Glass and Plastic Substrates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glass</td>
<td>Y</td>
<td>Y</td>
<td>T</td>
</tr>
<tr>
<td>Sand to roughen surface, then MEK/Acetone Wipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acrylic</td>
<td>T</td>
<td>T</td>
<td>N</td>
</tr>
<tr>
<td>Sand to roughen surface, then Dry Wipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiberglass</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Sand to roughen surface, then MEK/Acetone Wipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABS, PVC - Rigid</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Sand to roughen surface, then MEK/Acetone Wipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existing Bituminous Roofing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modified Bitumen Roofing - Smooth APP Surfaced</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Power wash to remove contaminants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modified Bitumen Roofing - Smooth SBS Surfaced</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Power wash to remove contaminants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bituminous Roofing - Aluminum Coated</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Power wash to remove contaminants and loose coating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bituminous Roofing - Granular Surfaced</td>
<td>Y (O)</td>
<td>Y (O)</td>
<td>T</td>
</tr>
<tr>
<td>Power wash to remove contaminants and loose granules</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bituminous Roofing - Flood Coat and Aggregate</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Requires insulation or cover board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal Tar Pitch Roofing - Flood Coat and Aggregate</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Requires insulation or cover board</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hot-Melt Bituminous Waterproofing</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Requires application of compatible mineral-surfaced cap sheet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylene-Faced Bituminous (Bituthane) Roofing</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Requires torch-application of compatible mineral-surfaced cap sheet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Existing Membrane Roofing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVC Single-Ply Roofing (weathered)</td>
<td>T</td>
<td>N</td>
<td>T</td>
</tr>
<tr>
<td>Power wash to remove contaminants, then MEK/Acetone Wipe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPDM Single-Ply Roofing (weathered)</td>
<td>T</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>EPDM Manufacturer’s splice cleaner and splice adhesive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPO Single-Ply Roofing (weathered)</td>
<td>T</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Special order TPO Primer Available or TPO Manufacturer’s splice cleaner and splice adhesive or</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Insulation and Cover Boards</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isocyanurate Foam Insulation - Coated Glass Facer, non-perforated</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Isocyanurate Foam Insulation - Standard Felt Facer</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Requires cover board or cap sheet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EPS/XEPS Foam Insulation</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Requires cover board or cap sheet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Board (Securock, PermaBase, DexCell)</td>
<td>N</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Silicone Treated Gypsum Board - Fiberglass-faced (Dens-Deck Prime, Dens-Glass Gold) Not acceptable over existing roofing or direct to concrete</td>
<td>N</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Silicone Treated Gypsum Board - Unfaced (SecureRo)</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Not acceptable over existing roofing or direct to concrete</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Y - Recommended  N - Not Recommended  T - Adhesion Test Required  O - Optional with 2K-PUR for Most Applications

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System-America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
## KEMPETEC® D Primer

**Two component work pack includes:**

**Component A: Base Resin, Component B: Hardener**

### Product Description

KEMPETEC® D Primer is a high bonding primer used between acceptable prepared substrates and KEMPEROL® cold liquid-applied reinforced membrane and coating systems.

### Composition & Materials

KEMPETEC® D Primer is a solvent free, high solids, 2-part, cold-applied liquid polyurethane primer.

### Use

KEMPETEC® D Primer is used to prime a wide range of substrates including bitumen roofing, coated-glass faced high density polyiso cover board, plywood, steel, galvanized steel, aluminum, lead, copper, zinc, glass and other substrates. Please see the Substrate Primer Selection Table for a complete list.

### Limitations

Primer may be applied only when the ambient temperature is 41 °F (5 °C) or rising, and the substrate temperature is a minimum of 5 degrees above the dew point.

KEMPEROL® membrane must be applied to primer within 8 days of primer application. Primer exposed for more than 8 days must be re-primed in accordance with KSA Technical Department requirements.

### Yield

125 ft² (11.6 m²) / 5 kg work pack.

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

### Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life 24 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

### Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

### Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to SSPC-SP3 standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

*Note: Prior to opening the containers of KEMPETEC® D Primer, wear appropriate safety glasses and protect hands and wrists by wearing gloves.*

### Mixing of Primer

**Step 1:** Premix Component A thoroughly with a spiral agitator.

**Step 2:** Pour Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. DO NOT AERATE. DO NOT THIN PRIMER. The primer solution should be a uniform color, with no light or dark streaks present.

*NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.*
After the Primer Resin is mixed, apply approximately 125 ft²/5 kg work pack. The Resin should be rolled or brushed evenly onto the surface in a cross directional method to fully cover the substrate in one application. Allow primer to set approximately 12 hours prior to application of the KEMPEROL® membrane.

Note: KEMPEROL® membrane may be applied when the primer is completely dry and without tack. Do not apply KEMPEROL® membrane to tacky or wet primer.

Cured KEMPERTEC® D Primer may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPERTEC® D Primer Resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

KEMPERTEC® D Primer Work pack:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>525-00-055</td>
<td>1.23 US GAL (4.67 L) • 5.0 kg</td>
</tr>
</tbody>
</table>

---

**Sustainability Information**

<table>
<thead>
<tr>
<th>Rapidly Renewable Resource</th>
<th>60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Buffalo, NY, USA</td>
</tr>
</tbody>
</table>

**Primer Properties**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Translucent/Amber</td>
</tr>
<tr>
<td>Physical State</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>VOC Contents</td>
<td>3 g/l</td>
</tr>
<tr>
<td>Usage Time*</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Water Resistant After*</td>
<td>3 hours</td>
</tr>
<tr>
<td>Cures After*</td>
<td>12 hours</td>
</tr>
<tr>
<td>Apply Membrane/Coating After*</td>
<td>12 hours</td>
</tr>
</tbody>
</table>

*values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

**Disclaimer:** No warranty, express or implied, is made in this document. The product is not claimed to be merchantable or fit for any particular purpose. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.

**Rev. 07/2015**
KEMPETEC® R Primer

Two component work pack includes:
Component A: Base Resin, Component B: Hardener

Product Description
KEMPETEC® R Primer is a quick-curing, high bonding primer used between acceptable prepared substrates and KEMPEROL® cold liquid-applied reinforced membrane and coating systems.

Composition & Materials
KEMPETEC® R Primer is a solvent free, high solids, 2-part, cold-applied liquid polyurethane resin.

Use
KEMPETEC® R Primer is used to prime a wide range of substrates including bitumen roofing, coated-glass faced high-density polyiso cover board, plywood, steel, galvanized steel, aluminum, lead, copper, zinc, glass and other substrates. Please see the Substrate Primer Selection Table for a complete list.

Limitations:
Primer may be applied only when the ambient temperature is 41 ºF (5 ºC) or rising, and the substrate temperature is a minimum of 5 degrees above the dew point.

KEMPEROL® membrane must be applied to primer within 8 days of primer application. Primer exposed for more than 8 days must be re-primed in accordance with KSA Technical Department requirements.

Yield
25 ft² (2.3 m²) per 1 kg work pack.

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage
Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 ºF (1.7 ºC) or above 80 ºF (27 ºC). Approximate shelf life 12 months with proper storage.

Precautions
Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation
All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to SSPC-SP3 standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

Note: Prior to opening the containers of KEMPETEC® R Primer Resin, wear appropriate safety glasses and protect hands and wrists by wearing gloves.

Mixing of Primer
Step 1: Remove bag from the aluminum packaging. Knead cream-colored resin Component A thoroughly until a uniform color is achieved.

Step 2: Pull away the rubber cord separating the two components so that Components A and B can be mixed together. Knead the bag quickly and thoroughly for approximately 1 minute so that a homogenous primer is formed. The primer should be a uniform color, with no light or dark streaks present.

NOTE: Kempertec R primer is extremely quick-curing. Apply immediately after mixing.
After the KEMPERTEC® R Primer is mixed, cut off one corner of the bag and pour all of the primer onto the substrate surface or into a clean new mixing pail. Working quickly, apply approximately 25 ft² / 1 kg work pack. The primer should be rolled or brushed evenly onto the surface in a cross directional method to fully cover to the substrate in one application. Allow to set approximately 3 hours prior to application of the KEMPEROL® membrane.

Note: KEMPEROL® membrane may be applied when the primer is completely dry and without tack. Do not apply KEMPEROL® membrane to tacky or wet primer.

Cured KEMPERTEC® R Primer may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPERTEC® R Primer resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

KEMPERTEC® R Primer Work pack:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>326-00-010</td>
<td>1.0 kg bag</td>
</tr>
</tbody>
</table>

Application

Disposal

Ordering Information

Sustainability Information

<table>
<thead>
<tr>
<th>Rapidly Renewable Resource</th>
<th>60%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Buffalo, NY, USA</td>
</tr>
</tbody>
</table>

Primer Properties

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Translucent/Amber</td>
</tr>
<tr>
<td>Physical State</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>VOC Contents</td>
<td>3 g/l</td>
</tr>
<tr>
<td>Usage Time*</td>
<td>5-10 minutes</td>
</tr>
<tr>
<td>Water Resistant After*</td>
<td>2 hours</td>
</tr>
<tr>
<td>Cures After*</td>
<td>3 hours</td>
</tr>
<tr>
<td>Apply Membrane/Coating After*</td>
<td>3 hours</td>
</tr>
</tbody>
</table>

* values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPERTEC® EP Primer

Two component work pack includes:
Component A: Base Resin, Component B: Hardener

Product Description

KEMPERTEC® EP Primer is a penetrating high bonding primer used between acceptable prepared substrates and KEMPEROL® cold liquid-applied reinforced membrane and coating systems.

Composition & Materials

KEMPERTEC® EP Primer is a solvent free, 2-part, cold-applied liquid epoxy resin.

Use

KEMPERTEC® EP Primer is used to prime a wide range of substrates including bitumen roofing, concrete, brick, plywood, steel, glass and other substrates. Adhesion test is required to confirm adequate adhesion for aluminum, lead, copper, or zinc. Please see the Substrate Primer Selection Table for a complete list. Primer is also used to provide alkalinity protection for Kemperol 2K-PUR membrane prior to concrete or cementitious mortar/adhesive application.

Limitations

Primer may be applied only when the ambient temperature is 50 °F (10 ºC) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. Kemperol membrane must be applied to primer within 8 days of primer application. Primer exposed for more than 8 days must be re-primed in accordance with Kemper System Technical Department requirements.

Yield

85 ft² (7.9 m²) per 5 kg work pack.

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 ºC) or above 80 °F (27 ºC). Approximate shelf life 24 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 ºC).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to SSPC-SP3 standards.

New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by the KSA Technical Department. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5 by means of scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

Concrete shall be dry and confirmed by measuring the moisture level with the following methods:
- ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
• ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. A maximum requirement is 3 lb/1,000 ft²/24-hour period.

• ASTM D2216: Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass. A maximum requirement is 6% moisture content by weight.

• ASTM F2659: Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter. Tramex Concrete Moisture Encounter Meter CME4 may be used to determine the moisture content of the top 3/4” of the concrete slab only. A maximum requirement is a 5% reading.

Note: Prior to opening the containers of KEMPERTEC® EP Primer, wear appropriate safety glasses and protect hands and wrists by wearing gloves.

**Step 1:** Premix Component A thoroughly with a spiral agitator.

**Step 2:** Pour Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. DO NOT AERATE. DO NOT THIN PRIMER. The primer should be a uniform color, with no light or dark streaks present.

**NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.**

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

In warm climates, higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primer due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition. Where required, a second squeegee application of sand/primer slurry may be utilized. The primer slurry mixing ratio should be 25 lbs of Kemperol® Surfacing Sand and 12.5 lbs of Kemperol® Mixing Sand per 5 kg unit of primer.

After applying the primer, immediately broadcast Surfacing Sand (O), #18, (0.5 – 1.2 mm) to refusal, at the approximate rate of 50 lbs./100 ft² (2.4 kg/m²). Allow to set approximately 16 hours prior to application of the KEMPEROL® membrane.

Note: KEMPEROL® membrane may be applied when the primer is completely dry and without tack. Do not apply KEMPEROL® membrane to tacky or wet primer.

**Alkalinity Barrier**

KEMPERTEC EP Primer is used as an alkalinity barrier/adhesion key over completed membrane and flashing systems. Refer to specific application procedures and project requirements.

**Disposal**

Cured KEMPERTEC® EP Primer may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPERTEC® EP Primer Resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**Ordering Information**

KEMPERTEC® EP Primer Work pack:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>523-00-010</td>
<td>.25 US GAL (2.83L) • 1 kg</td>
</tr>
<tr>
<td>523-00-105</td>
<td>1.24 US GAL (4.71L) • 5 kg</td>
</tr>
</tbody>
</table>

**Sustainability Information**

<table>
<thead>
<tr>
<th>Rapidly Renewable Resource</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Packaged Location</td>
<td>Buffalo, NY, USA</td>
</tr>
</tbody>
</table>

**Primer Properties**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Translucent/Amber</td>
</tr>
<tr>
<td>Physical State</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>VOC Contents</td>
<td>8 g/l</td>
</tr>
<tr>
<td>Usage Time*</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Water Resistant After*</td>
<td>6 hours</td>
</tr>
<tr>
<td>Cures After*</td>
<td>16 hours</td>
</tr>
<tr>
<td>Apply Membrane/Coating After*</td>
<td>16 hours</td>
</tr>
</tbody>
</table>

* values obtained at 73°F, 50% relative humidity; may vary depending upon air flow, humidity and temperature.

**DISCLAIMER:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPHERTEC® EP5 Primer

Two component work pack includes:
Component A: Base Resin, Component B: Hardener

Product Description

KEMPHERTEC® EP5 Primer is a quick-curing, penetrating, high bonding, primer used between acceptable prepared substrates and KEMPEROL® cold liquid-applied reinforced membrane and coating systems.

Composition & Materials

KEMPHERTEC® EP5 Primer is a solvent free, 2-part, cold liquid-applied epoxy resin.

Use

KEMPHERTEC® EP5 Primer is used to prime a wide range of substrates including bitumen roofing, concrete, brick, plywood, steel, glass and other substrates. Adhesion test is required to confirm adequate adhesion for aluminum, lead, copper, or zinc. Please see the Substrate Primer Selection Table for a complete list. Primer is also used to provide alkalinity protection for Kemperol 2K-PUR membrane prior to concrete or cementitious mortar/adhesive application.

Limitations

Primer may be applied only when the ambient temperature is 41 °F (5 °C) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. Kemperol membrane must be applied to primer within 8 days of primer application. Primer exposed for more than 8 days must be re-primed in accordance with KSA Technical Department requirements.

Yield

85 ft² (7.9m²) per 5 kg work pack.
Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life 24 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and substrate. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to SSPC-SP3 standards.

New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by the KSA Technical Department. Where required, concrete shall be abrassively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5 by means of scarifying, sand-blasting or grinding in some cases to achieve a suitable substrate.

Concrete shall be dry and confirmed by measuring the moisture level with the following methods:
• ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes. A 75% or greater is an indication of high moisture content and will require additional priming.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
• ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride. A maximum requirement is 3 lb/1,000 ft²/24-hour period.

• ASTM D2216: Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass. A minimum requirement is 6% moisture content by weight.

• ASTM F2659: Standard Guide for Preliminary Evaluation of Comparative Moisture Condition of Concrete, Gypsum Cement and other Floor Slabs and Screeds Using a Non-Destructive Electronic Moisture Meter. Tramex Concrete Moisture Encounter Meter CME4 may be used to determine the moisture content of the top 3/4” of the concrete slab only. A minimum requirement is a 5% reading.

Note: Prior to opening the containers of KEMPERTEC® EP Primer, wear appropriate safety glasses and protect hands and wrists by wearing gloves.

**Mixing of Primer**

**Step 1:** Premix Component A thoroughly with a spiral agitator.

**Step 2:** Pour Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. DO NOT AERATE. DO NOT THIN PRIMER. The primer should be a uniform color, with no light or dark streaks present.

**NOTE:** DO NOT break down units into smaller quantities – mix the entire work pack.

**Application**

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

In warm climates, higher contents of moisture or vapor within a concrete substrate may cause pin-holing of the primer due to vapor drive. Application of primer during a later portion of the day, when temperatures subside can improve this condition. Where required, a second squeegee application of sand/primer slurry may be utilized. The primer slurry mixing ratio should be 25 lbs of Kemperol® Surfacing Sand and 12.5 lbs of Kemperol® Mixing Sand per 5 kg unit of primer.

After applying the primer, immediately broadcast Surfacing Sand (0), #18, (0.5 – 1.2 mm) to refusal, at the approximate rate of 50 lbs./100 ft². (2.4 kg/m²). Allow to set approximately 4 hours prior to application of the KEMPEROL® membrane.

Note: KEMPEROL® membrane may be applied when the primer is completely dry and without tack. Do not apply KEMPEROL® membrane to tacky or wet primer.

**Alkalinity Barrier**

KEMPERTEC EP Primer is used as an alkalinity barrier/adhesion key over completed membrane and flashing systems. Refer to specific application procedures and project requirements.

**Disposal**

Cured KEMPERTEC® EPS Primer may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPERTEC® EPS Primer Resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**Ordering Information**

KEMPERTEC® EP Primer Work pack:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>520-00-033</td>
<td>.25 US GAL (2.83L) • 1 kg</td>
</tr>
<tr>
<td>520-00-055</td>
<td>1.18 US GAL (4.7L) • 5 kg</td>
</tr>
</tbody>
</table>

**DISCLAIMER:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
# KEMPERTEC® AC Primer

**Product Information**

**KEMPERTEC® AC Primer**

**Work pack includes:**
Component A: Base Resin, Component B: Catalyst Powder

## Product Description
**KEMPERTEC® AC PRIMER** is a quick-curing, high bonding Polymethyl Methacrylate (PMMA) primer used between acceptable prepared substrates and KEMPEROL® cold liquid-applied reinforced membrane and coating systems.

## Composition & Materials
KEMPERTEC® AC Primer is a 2-part, cold liquid-applied Polymethyl Methacrylate resin consisting of Component A (resin), and Component B (catalyst powder).

## Use
KEMPERTEC® AC Primer is used to prime a variety of substrates. Please check the current Substrate Primer Selection Table for a complete list of approved substrates.

## Limitations
Kemperol AC Primer may be applied when the ambient temperature is between 35°F (2°C) and rising. The substrate temperature must be a minimum of 5 degrees above the dew point. Kemperol membrane must be applied to primer within 48 hours of primer application. Primer exposed for more than 48 hours must be re-primed.

Provide and maintain positive airflow over freshly applied KEMPEROL® AC materials during entire curing period to facilitate complete cure. Natural airflow is typically sufficient for exterior applications, but locations such as beneath large mechanical units, at inside corners, at the base of high walls, and other similar areas where stagnant air may occur should be provided with powered fans.

**Yield**
125 ft² (11.6 m²) per 5 kg work pack.

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

## Storage
Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35°F (1.7°C) or above 80°F (27°C). Approximate shelf life 12 months with proper storage. Catalyst Powder must be stored seperately.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70°F (18-21°C).

## Precautions
Review Safety Data Sheets before handling, available online at kempersystem.net.

## Surface Preparation
All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

*Note: Prior to opening the containers of KEMPERTEC® AC Primer, wear appropriate safety glasses and protect hands and wrists by wearing gloves.*

## Mixing of Primer
**Step 1:** Mix Component A with a spiral KEMPEROL® agitator or stir stick, until the liquid is a uniform color, with no streaks present.
Step 2: Add the Catalyst Powder, Component B, to Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin. The amount of Catalyst Powder must be adjusted according to the ambient temperature (see table).

**NOTE: Kempertec® AC Primer is extremely fast curing. Excessive mixing time reduces the available working time for the Primer.**

<table>
<thead>
<tr>
<th>Material Temperature °F</th>
<th>Kemperol Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>35°F - 50°F</td>
<td>2 bags</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>50°F - 65°F</td>
<td>2 bags</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>65°F - 85°F</td>
<td>1 bag</td>
<td>15</td>
<td>30</td>
</tr>
<tr>
<td>&gt;85°F</td>
<td>1/2 bag</td>
<td>10</td>
<td>15</td>
</tr>
</tbody>
</table>

After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

*Note: Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.*

**Application**

Cured KEMPERTEC® AC Primer may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPERTEC® AC Primer resin and hardener are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin or hardener away.

**Disposal**

KEMPETEC® AC Primer Work pack:
- Item #: 524-00-005
  - Size: 5.0 kg can resin
  - 100 g Catalyst Powder plastic bag

Additional Catalyst Powder:
- AKZO-77-251
  - 100 g Catalyst Powder plastic bag

**Sustainability Information**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Transparent</td>
</tr>
<tr>
<td>Physical State</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>VOC Contents</td>
<td>62 g/l</td>
</tr>
<tr>
<td>Usage Time*</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Water Resistant After*</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Cures After*</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Apply Membrane/Coating After*</td>
<td>30 minutes</td>
</tr>
</tbody>
</table>

*values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.*

**Disclaimer:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPEROL® WATERPROOFING AND ROOFING RESINS

**KEMPEROL® 2K-PUR RESIN**
Two-component polyurethane resin, gray-yellow color, Low VOC, solvent-free and “odor-free”. Intended for waterproofing, roofing, flashings and interior use where “odor-free” application is required. Provides an excellent substrate for the application of finish surfacing, both coating and aggregated finishes. Provides an approximate 30 minute pot life, 16 hour cure time and rain-resistant in 2 hours.

**KEMPEROL® REFLECT 2K FR RESIN**
Two-component polyurethane resin, white color, highly reflective, color stable, Low VOC, solvent-free and “odor-free”. Intended for reflective roofing, waterproofing and flashing use where highly reflective and “odor-free” application is required. Provides an approximate 30 minute pot life, 16 hour cure time and rain-resistant in 2 hours.

**KEMPEROL® AC RESIN**
Two-component Polymethyl Methacrylate (PMMA) resin including a catalyst, gray color. Intended for exterior use; waterproofing, roofing and flashings, where same day application is required. Provides an excellent substrate for the application of finish surfacing, both coating and aggregated finishes. Provides an approximate 15 minute pot life, 60 minutes cure time and rain-resistant in 30 minutes.

**KEMPEROL® V210M RESIN**
Two-component polyester resin including a catalyst, light gray color, Low VOC. Intended for exterior use; waterproofing, roofing and flashing applications. Provides an approximate 15 minute pot life, 4-6 hour cure time and rain-resistant in 30 minutes.

**KEMPEROL® BRM RESIN**
Two-component polyester resin including a catalyst, amber color. Low VOC. Intended for exterior use; waterproofing, roofing and flashing applications. Provides an approximate 15 minute pot life, 4-6 hour cure time and rain-resistant in 30 minutes.

**KEMPEROL® 1K-PUR RESIN**
Single-component, moisture-cured polyurethane resin, gray color. Intended for exterior use; roofing, waterproofing and flashing applications. Single-component resin is convenient for performing roof repairs. Provides an approximate 45 minute pot life, 24 hour cure time and rain-resistant in 1 hour.

**KEMPEROL® 1K-SF RESIN**

**KEMPEROL® 022 RESIN**
Two-component synthetic resin. Solvent free and Low VOC. Gray color. Intended for interior waterproofing use beneath tile; bathrooms, kitchens, and other wet room applications. To be used in conjunction with 500 (50 gram) fleece only. One day application with ability to install tile the next day. Provides a 25 minute pot life and 16 hour cure time.

*NOTE: Times will be shorter in hot weather and longer in cold weather.*

*NOTE: SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.*
KEMPEROL® 2K-PUR

Product Description

KEMPEROL® 2K-PUR is a two-component, UV-stable, “odor-free,” solvent free, Low VOC, high performance cold liquid-applied waterproofing and roofing resin.

KEMPEROL® 2K-PUR reinforced membrane system can be surfaced with traffic coatings, reflective coatings, aggregate surfacing coatings and other granular materials to achieve a desired function and appearance.

Composition & Materials

A monolithic membrane is created in the field by combining the KEMPEROL® 2K-PUR two-part, cold liquid-applied reactive-cure polyurethane resin with KEMPEROL® polyester reinforcing fleece. Membrane may be applied using standard fleece available in 4, 8, 10, 13, 20, 27, and 41-inch nominal widths.

Use

KEMPEROL® 2K-PUR membrane is suitable for a wide range of interior and exterior applications including roofs, plazas, planters, foundations, mechanical rooms and other waterproofing applications.

Limitations

Interior or exterior applications of KEMPEROL® 2K-PUR membrane exposed to UV-light may yellow or discolor. Use of a coating or aggregate surfacing systems are recommended where colorfast applications are required.

KEMPEROL® 2K-PUR may be applied when the ambient temperature is 41 °F (5 °C) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. The maximum application temperature is approximately 90 °F (32 °C).

Note: Viscosity increases with falling temperature. For temperatures below 50 °F (10 °C), KEMPEROL® A 2K-PUR Accelerator should be added to component A to reduce set time.

Yield

Using 165 Fleece: 38 ft² (3.53 m²) per 12.5 kg work pack.
Using 120 Fleece: 45 ft² (4.20 m²) per 12.5 kg work pack.

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

Priming

After substrate preparation, temporary watertightness may be achieved with the application of KEMPERPTEC® D Primer or EP Primer and temporary joint filler. Alternatively, the use of quick-dry KEMPERPTEC® R or EP5 Primer may allow same-day membrane application. Refer to the appropriate KEMPERPTEC® primer data sheet for application instructions.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Mixing of Resin

**Application (165 Fleece)**

**Step 1:** Mix resin Component A (cream formulation) with a spiral agitator until the liquid is a uniform cream color.

**Step 2:** If the ambient temperature is below 50°F (10°C), A2K-PUR Accelerator, a cold weather additive, should be mixed into the Component A. The accelerator should be mixed with the spiral agitator for 2 minutes or until both liquids are thoroughly blended.

**Step 3:** Add hardener Component B (dark brown formulation) to Component A and mix with a spiral agitator for 2 minutes or until both liquids are thoroughly blended.

**NOTE:** DO NOT break down workpacks into smaller quantities – mix the entire workpack.

**Surfacing**

KEMPEROL® 2K-PUR Membrane accepts a wide variety of KEMPERDUR® topcoats and aggregate surfacings for aesthetic or mechanical wear. The KEMPEROL® 2K-PUR membrane must be surfaced within 16-48 hours of membrane application to ensure proper bond between the membrane and surfacing. After the 48 hour window the membrane will require surface abrasion.

**Disposal**

Cured 2K-PUR resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured 2K-PUR resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**Ordering Information**

KEMPEROL® 2K-PUR Work pack:

<table>
<thead>
<tr>
<th>Item#</th>
<th>Size:</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>327-47-025</td>
<td>0.51 US GAL (1.93L) • 2.5 kg</td>
<td></td>
</tr>
<tr>
<td>327-47-055</td>
<td>1.03 US GAL (3.90L) • 5.0 kg</td>
<td></td>
</tr>
<tr>
<td>327-47-105</td>
<td>2.41 US GAL (9.12L) • 12.5 kg</td>
<td></td>
</tr>
</tbody>
</table>

**Sustainability Information**

<table>
<thead>
<tr>
<th>Sustainability Information</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapidly Renewable Resource</td>
<td>80%</td>
</tr>
<tr>
<td>Recycled Content % (post/pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Buffalo, NY, USA</td>
</tr>
</tbody>
</table>

**Membrane Properties**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Test Method</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Yellow-Gray</td>
<td></td>
</tr>
<tr>
<td>Physical State</td>
<td>Cures to Solid</td>
<td></td>
</tr>
<tr>
<td>Thickness (165 Fleece)</td>
<td>80 mils</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>6 g/l</td>
<td></td>
</tr>
<tr>
<td>Peak Load @ 73 ºF, avg.</td>
<td>DS147 &gt;70 lbf/in</td>
<td></td>
</tr>
<tr>
<td>Elongation</td>
<td>DS147 Min 30%</td>
<td></td>
</tr>
<tr>
<td>Tearing Strength</td>
<td>DS145 90 lbf</td>
<td></td>
</tr>
<tr>
<td>Puncture resistance</td>
<td>DS602 56 lbs</td>
<td></td>
</tr>
<tr>
<td>Dimensional stability</td>
<td>D1204 0.15%</td>
<td></td>
</tr>
<tr>
<td>Water absorption</td>
<td>DS70 &gt;1%</td>
<td></td>
</tr>
<tr>
<td>Impact Resistance</td>
<td>D2240 Shore A:75</td>
<td></td>
</tr>
<tr>
<td>Water vapor transmission</td>
<td>E96 0.08 Perms</td>
<td></td>
</tr>
<tr>
<td>Crack spanning</td>
<td>2 mm/0.08 inch</td>
<td></td>
</tr>
<tr>
<td>Short-term temperature resistance</td>
<td>250 °C/482 °F</td>
<td></td>
</tr>
<tr>
<td>Usage time*</td>
<td>30 minutes</td>
<td></td>
</tr>
<tr>
<td>Water resistant after*</td>
<td>2 hours</td>
<td></td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>24 hours</td>
<td></td>
</tr>
<tr>
<td>Can be driven on after*</td>
<td>48 hours</td>
<td></td>
</tr>
<tr>
<td>Apply coating/surfacing after*</td>
<td>16-48 hours</td>
<td></td>
</tr>
<tr>
<td>Apply overburden after*</td>
<td>48 hours</td>
<td></td>
</tr>
<tr>
<td>Completely hardened*</td>
<td>3 days</td>
<td></td>
</tr>
</tbody>
</table>

* values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.
## KEMPEROL® REFLECT 2K FR

**Work pack includes:**
- Component A: White Formulation
- Component B: Clear Formulation

### Product Description

KEMPEROL® REFLECT 2K FR is a two-component, high performance, UV and color stable, odor and solvent free, Low VOC, cold liquid-applied, highly reflective and fire-rated roofing resin. KEMPEROL® REFLECT 2K FR reinforced membrane system can be surfaced with traffic coatings, aggregate surfacing and other granular materials to achieve a desired function and appearance.

### Composition & Materials

A monolithic membrane is created in the field by combining the KEMPEROL® REFLECT 2K FR two-part, cold liquid-applied reactive-cure polyurethane resin with KEMPEROL® polyester reinforcing fleece. Membrane may be applied using standard fleece available in 4, 8, 10, 13, 20, 27, and 41-inch nominal widths.

### Use

KEMPEROL® REFLECT 2K FR membrane is suitable for roofing and flashing applications where a highly reflective white finish, SRI 110, with a Class A fire rated assembly is appropriate.

### Limitations

KEMPEROL® REFLECT 2K FR may be applied when the ambient temperature is 41 ºF (5 ºC) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. The maximum application temperature is approximately 90 ºF (32 ºC).

**Note:** Viscosity increases with falling temperature. For temperatures below 50 ºF (10 ºC), KEMPEROL® A 2K-PUR Accelerator should be added to component A to reduce set time.

### Yield

Using 165 Fleece: 33 ft² (3 m²) per 12.5 kg work pack.

**Note:** All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

### Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 ºF (1.7 ºC) or above 80 ºF (27 ºC). Approximate shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

### Precautions

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

### Surface Preparation

After substrate preparation, temporary watertightness may be achieved with the application of KEMPERTEC® D Primer or EP Primer and temporary joint filler. Alternatively, the use of quick-dry KEMPERTEC® R or EP5 Primer may allow same-day membrane application. Refer to the appropriate KEMPERTEC® primer data sheet for application instructions.

Allow primer to cure completely prior to application of the KEMPEROL® membrane.

---

**Headquarters:** Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224

Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
**Mixing of Resin**

Note: Prior to opening the containers of KEMPEROL® REFLECT 2K FR Resin, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves.

**Step 1:** Mix resin Component A (white formulation) with a spiral agitator until the liquid is a uniform cream color.

**Step 2:** If the ambient temperature is below 50°F (10°C), AZK-PUR Accelerator, a cold weather additive, should be mixed into the Component A. The accelerator should be mixed with the spiral agitator for 2 minutes or until both liquids are thoroughly blended.

**Step 3:** Add hardener Component B (clear formulation) to Component A and mix with a spiral agitator for 2 minutes or until both liquids are thoroughly blended.

**NOTE: DO NOT break down workpacks into smaller quantities – mix the entire workpack.**

**Application (165 Fleece)**

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. The appearance of the fleece should be light opaque yellow/gray with no white spots. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Surfacing**

KEMPEROL® REFLECT 2K FR Membrane accepts a wide variety of KEMPERDUR® topcoats and aggregate surfacings for aesthetic or mechanical wear. The KEMPEROL® 2K-PUR membrane must be surfaced within 16-48 hours of membrane application to ensure proper bond between the membrane and surfacing. After the 48 hour window the membrane will require surface abrasion.

**Disposal**

Cured REFLECT 2K FR resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured 2K-PUR resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**Ordering Information**

KEMPEROL® REFLECT 2K FR Work pack:

<table>
<thead>
<tr>
<th>Item#</th>
<th>Size</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>329-47-025</td>
<td>0.51 US GAL (1.93L) • 2.5 kg</td>
<td></td>
</tr>
<tr>
<td>329-47-055</td>
<td>1.03 US GAL (3.90L) • 5.0 kg</td>
<td></td>
</tr>
<tr>
<td>329-47-105</td>
<td>2.41 US GAL (9.12L) • 12.5 kg</td>
<td></td>
</tr>
</tbody>
</table>
### KEMPEROL® AC

**Work pack includes:**

Component A: Grey Resin, Component B: Catalyst Powder

---

<table>
<thead>
<tr>
<th>Product Description</th>
<th><strong>KEMPEROL® AC</strong> is a two component, quick-curing, UV-stable, high performance, cold liquid-applied Polymethyl Methacrylate (PMMA) waterproofing resin for same day application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition &amp; Materials</td>
<td>A monolithic membrane is created in the field by combining the <strong>KEMPEROL® AC</strong> two-part, cold liquid-applied Polymethyl Methacrylate resin with Kemperol polyester reinforcing fleece. Membranes may be applied using standard fleece available in 4, 8, 10, 13, 20, 27, and 41-inch nominal widths.</td>
</tr>
<tr>
<td>Use</td>
<td><strong>KEMPEROL® AC</strong> membrane is suitable for exterior waterproofing applications including plazas, balconies, terraces, park decks, and flashings.</td>
</tr>
<tr>
<td>Limitations</td>
<td>Kemperol AC membrane may be applied when the ambient temperature is between 23º F (-5º C) and a maximum of 95º F (35º C). The substrate temperature must be a minimum of 5 degrees above the dew point. Note: Extra caution should be taken in below freezing temperatures. The viscosity increases with falling temperature. Provide and maintain positive airflow over freshly applied <strong>KEMPEROL® AC</strong> materials during entire curing period to facilitate complete cure. Natural airflow is typically sufficient for exterior applications, but locations such as beneath large mechanical units, at inside corners, at the base of high walls, and other similar areas where stagnant air may occur should be provided with powered fans.</td>
</tr>
<tr>
<td>Yield</td>
<td>Using 165 Fleece: 40 sq. ft. (3.3 m²) per 10 kg work pack</td>
</tr>
</tbody>
</table>

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

| Storage | Always store in cool and dry location. Do not store in direct sunlight or in a temperature below 35ºF (1.7ºC) or above 80ºF (27ºC). Approximate shelf life 18 months with proper storage. Catalyst Powder must be stored separately. |

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC). |

| Precautions | Review Safety Data Sheets before handling, available online at kempersystem.net. |
| Surface Preparation | All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate. |

| Priming | After substrate preparation, temporary watertightness can be achieved with the application of **KEMPETEC® AC** Primer and temporary joint filler, and proper tie offs. **KEMPETEC® AC** Primer may be brushed or rolled onto any clean and prepared surface. Allow primer to cure completely prior to application of the **KEMPEROL®** membrane. |
Step 1: Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color, with no light or dark streaks present.

Step 2: Add the Catalyst Powder, Component B, to resin Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin. The amount of Catalyst Powder must be adjusted according to the temperature (see table).

**NOTE: KEMPEROL® AC is extremely fast curing. Excessive mixing time reduces the available working time for the Resin.**

### Catalyst Powder Requirements

<table>
<thead>
<tr>
<th>Temperature °F</th>
<th>Kempener Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>23°F - 55°F</td>
<td>4 bags</td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td>50°F - 70°F</td>
<td>3 bags</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>70°F - 90°F</td>
<td>2 bags</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>&gt;95°F</td>
<td>1 bag</td>
<td>20</td>
<td>30</td>
</tr>
</tbody>
</table>

### Application

Step 1: After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

Step 2: Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

Step 3: Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

### Surfacing

KEMPEROL® AC Membrane accepts KEMPERDUR® AC Finish in a smooth or aggregate finish for aesthetic or mechanical wear. Additionally, KEMPEROL® AC mineral filled traffic coating system with an aggregate finish is available for pedestrian and vehicular traffic. KEMPEROL® AC membrane must be allowed to fully cure prior to the application of any surfacing materials, typically 60 minutes.

Cured KEMPEROL® AC resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPEROL® AC resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

### Ordering Information

KEMPEROL® AC Work pack:
- Item #: 336-77-005
- Size: 2.64 US GAL • 10 kg Resin
- 2 - 100 g Catalyst Powder plastic bag

Additional Catalyst Powder:
- AK20-77-251
- 100 g Catalyst Powder plastic bag

**DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. USER AND CERTIFIED KEMPER SYSTEM AMERICA, INC. (KSA) APPLICATORS DETERMINE SUITABILITY ONLY. SEE INDIVIDUAL KSA PRODUCT DATA SHEETS, MSDS SHEETS, GUIDE SPECIFICATIONS AND DETAILS FOR COMPLETE INFORMATION REGARDING THE SUITABILITY, APPLICATION AND HANDLING OF KSA PRODUCTS.**
KEMPEROL® V210M

Work pack includes:
Component A: Grey, Component B: Catalyst Powder

Product Description
KEMPEROL® V210M is a two-component including catalyst, high performance, cold liquid-applied polyester waterproofing resin for exterior applications.

Composition & Materials
A monolithic membrane is created in the field by combining the KEMPEROL® V210M, cold-liquid applied polyester resin and catalyst powder with KEMPEROL® polyester reinforcing fleece. Membrane may be applied using standard fleece available in 4, 8, 10, 13, 20, 27, and 41-inch nominal widths.

Use
KEMPEROL® V210M membranes are suitable for a wide range of exterior waterproofing applications, including insulated roof assemblies, inverted roof assemblies, green roofs, and plazas.

Limitations
KEMPEROL® V210M may be applied only when the ambient temperature is 35 °F (2 °C) and rising, and the substrate temperature is a minimum of 5 °F above the dew point. The maximum application temperature is approximately 105 °F (40ºC).

Without additional protection, KEMPEROL® is not resistant to hydrocarbon solvents or alkalines greater than pH 10, which should be removed from the membrane immediately.

Yield
Using 165 Fleece:  33 ft² (3.0 m²) per 10 kg work pack; 66 ft² (6.0 m²) per 20 kg work pack
Using 200 Fleece:  28 ft² (2.6 m²) per 10 kg work pack; 56 ft² (5.2 m²) per 20 kg work pack

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage
Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 ºC) or above 80 °F (27 ºC). Approximate shelf life 12 months with proper storage. Catalyst Powder must be stored separately.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 ºC).

Precautions
Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation
All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

Priming
After substrate preparation, temporary watertightness is quickly achieved with the application of KEMPERTEC® D Primer or EP Primer and temporary joint filler. Alternatively, the use of quick-dry KEMPERTEC® AC Primer, R Primer, or EP5 Primer may allow same-day membrane application. KEMPERTEC® primer may be brushed or rolled onto any clean and prepared surface.
Mixing of Resin

**Step 1:** Mix the liquid resin with a spiral KEMPEROL® agitator until the liquid is a uniform color, with no light or dark streaks present. If the ambient temperature is below 50°F (10°C) or above 75 °F (24°C) add and mix a weather-related additive for 5 minutes or until both liquids are thoroughly blended.

**KEMPEROL® UP-A Cold Activator** should be added to the liquid resin when the ambient temperature is below 50 °F (10 °C).

**KEMPEROL® UP-I Inhibitor** should be added to the liquid resin when the temperature exceeds 75 °F (24 °C).

**Step 2:** Add the Catalyst Powder to the liquid resin and mix with the same agitator for two minutes or until the powder is completely mixed throughout the liquid resin.

**NOTE:** It is not necessary to wait for the catalyst powder to dissolve before using the V210M Resin.

Application

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

Overbuden

KEMPEROL® V210M membrane must receive an alkalinity barrier before an application of a concrete overburden. The membrane must be allowed to fully cure, typically 2-3 days, prior to application of alkalinity protection, consisting of Kempertec EP, EPS, or AC primers with Kiln-dried silica sand. The surface of the membrane must first be prepared by means of pressure washing with a heavy duty, PH-neutral professional grade cleaner, scrubbing, and thoroughly rinsing to remove the paraffin film developed during the curing process and any other contaminants.

Cured V210M resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured V210M resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

Disposal

Ordering Information

**KEMPEROL® V210M 20 kg Work pack**
Item#: 102-77-205
Size: 19.4 kg / 4.42 US GAL (16.73L) Resin
600 g Catalyst Powder plastic bag

**KEMPEROL® V210M 10 kg Work pack**
Item#: 100-77-105
Size: 9.7 kg / 2.21 US GAL (8.37L) Resin
300 g Catalyst Powder plastic bag

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPEROL® BRM

Work pack includes:
Component A: Amber-Grey, Component B: Catalyst Powder

Product Description

KEMPEROL® BRM is a two-component including catalyst, high performance, cold-liquid applied polyester waterproofing resin for exterior applications.

Composition & Materials

A monolithic membrane is created in the field by combining the KEMPEROL® BRM, cold liquid-applied polyester resin and catalyst powder with KEMPEROL® polyester reinforcing fleece. Membrane may be applied using standard fleece available in 4, 8, 10, 13, 20, 27, and 41-inch nominal widths.

Use

KEMPEROL® BRM membranes are suitable for a wide range of exterior waterproofing applications, including insulated roof assemblies, inverted roof assemblies, green roofs, plazas and beneath hot asphalt pavement.

Limitations

KEMPEROL® BRM may be applied only when the ambient temperature is 35 ºF (2 ºC) and rising, and the substrate temperature is a minimum of 5 ºF above the dew point. The maximum application temperature is approximately 105 ºF (40 ºC).

Without additional protection, KEMPEROL® is not resistant to hydrocarbon solvents or alkalines greater than pH 10, which should be removed from the membrane immediately.

Yield

Using 165 Fleece: 33 ft² (3.0 m²) / 10 kg work pack; 66 ft² (6.0 m²) / 20 kg work pack
Using 200 Fleece: 28 ft² (2.6 m²) / 10 kg work pack; 56 ft² (5.2 m²) / 20 kg work pack

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 ºF (1.7 ºC) or above 80 ºF (27 ºC). Approximate shelf life 12 months with proper storage.

Catalyst Powder must be stored separately.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

Priming

After substrate preparation, temporary watertightness is quickly achieved with the application of KEMPERTEC® D Primer or EP Primer and temporary joint filler. Alternatively, the use of quick-dry KEMPERTEC®AC Primer, R Primer, or EP5 Primer may allow same-day membrane application. KEMPERTEC® primer may be brushed or rolled onto any clean and prepared surface.

Allow primer to cure completely prior to application of the KEMPEROL® membrane.
### Mixing of Resin

*Note: Prior to opening the containers of KEMPEROL® BRM Resin, wear appropriate safety glasses and protect hands and wrists by wearing gloves.*

**Step 1:** Mix the liquid resin with a spiral KEMPEROL® agitator until the liquid is a uniform color, with no light or dark streaks present. If the ambient temperature is below 50 °F (10 °C) or above 75 °F (24 °C) add and mix a weather-related additive for 5 minutes or until both liquids are thoroughly blended.

**KEMPEROL® UP-A Cold Activator** should be added to the liquid resin when the ambient temperature is below 50 °F (10 °C).

**KEMPEROL® UP-I Inhibitor** should be added to the liquid resin when the temperature exceeds 75 °F (24 °C).

**Step 2:** Add the Catalyst Powder to the liquid resin and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin.

**NOTE: It is not necessary to wait for the catalyst powder to dissolve before using the BRM Resin.**

### Application

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

### Overburden

KEMPEROL® BRM membrane must receive an alkalinity barrier before an application of a concrete overburden. The membrane must be allowed to fully cure, typically 2-3 days, prior to application of alkalinity protection, consisting of Kempertec EP, EP5, or AC primers with Surfacing Sand. The surface of the membrane must first be prepared by means of pressure washing with a heavy duty, PH-neutral professional grade cleaner, scrubbing, and thoroughly rinsing to remove the paraffin film developed during the curing process and any other contaminants.

Cured BRM resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured BRM resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

### Disposal

### Ordering Information

**KEMPEROL® BRM 20 kg Work pack**

Item#: 202-77-205

Size:

19.4 kg / 4.42 US GAL (16.73L) Resin

600 g Catalyst Powder plastic bag

**KEMPEROL® BRM 10 kg Work pack**

Item#: 200-77-105

Size:

9.7 kg / 2.21 US GAL (8.37L) Resin

300 g Catalyst Powder plastic bag
KEMPEROL® 1K-PUR

Work pack includes:
Single-Component Polyurethane Resin

Product Description

KEMPEROL® 1K-PUR is a single-component, UV-stable, high performance, moisture-cured polyurethane waterproofing and roofing resin.

Composition & Materials

A monolithic membrane is created in the field by combining the KEMPEROL® 1K-PUR cold liquid-applied moisture-cure polyurethane resin with KEMPEROL® polyester reinforcing fleece. Membrane may be applied using 120 fleece available in 10, 20 and 41-inch nominal widths.

Use

KEMPEROL® 1K-PUR membrane is suitable for a wide range of exterior waterproofing applications including balconies, bulkhead and penthouse roofs, cornices and other ornamental elements, flashings for new and existing roofing, gutterways, and metal roofing restoration.

Limitations

Exterior applications of KEMPEROL® 1K-PUR membranes exposed to UV may yellow or discolor. Use of a polyurethane coating, light-reflective sand aggregate or other granular material surfacing is recommended where color-fast applications are required.

KEMPEROL® 1K-PUR may be applied when the ambient temperature is 41 °F (5 °C) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. The maximum application temperature is approximately 90 °F (32 °C).

Note: Viscosity increases with falling temperature. KEMPEROL® 1K-PUR Thinner may be added to reduce viscosity and improve workability.

Yield

Using 120 Fleece: 18 ft² (1.7 m²) per 7 kg workpack.

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life is 9 months with proper storage.

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate.

Priming

After substrate preparation, temporary watertightness is quickly achieved with the application of KEMPERTEC® D Primer or EP Primer and temporary joint filler. Alternatively, the use of quick-dry KEMPERTEC® R or EPS Primer allows same-day membrane application in many cases. KEMPERTEC® primer may be brushed or rolled onto any clean and prepared surface. Allow primer to cure completely prior to application of the KEMPEROL® membrane.

Note: Prior to opening the containers of KEMPEROL® 1K-PUR Resin, protect hands and wrists by wearing gauntlet-type neoprene gloves.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Mixing of Resin

Mix resin with a spiral KEMPEROL® agitator, until the liquid is a uniform color, with no streaks present.

Take caution when using mechanical mixing equipment such as spiral agitators as this may introduce moisture into the resin, causing it to thicken and cure prematurely.

When working at temperatures below 50°F (10° C), add and mix in a quarter to a half a can (125 - 250 ml) of KEMPERTEC® 1K Thinner.

Opened cans of KEMPEROL® 1K-PUR may be resealed for later use, provided that a 1/4” thick layer of KEMPERTEC® 1K Thinner is applied over the surface of the resin in the can prior to closure. Mix in the thinner prior to use.

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

KEMPEROL® 1K-PUR Membrane accepts a wide variety of KEMPERDUR topcoats and aggregate surfacings for aesthetic or mechanical wear. KEMPEROL® 1K-PUR membrane must be allowed to cure a minimum of three days prior to the application of any KEMPERDUR surfacing materials. Full cure is typically achieved in 7 days, and is required prior to application of non-Kemper coating, surfacing and solid overburden.

Cured 1K-PUR resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured 1K-PUR resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**Application (120 Fleece)**

KEMPEROL® 1K-PUR Work pack

<table>
<thead>
<tr>
<th>Item#:</th>
<th>Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>307-77-070</td>
<td>7 kg</td>
</tr>
</tbody>
</table>

**Surfacing**

KEMPEROL® 1K-PUR Membrane accepts a wide variety of KEMPERDUR topcoats and aggregate surfacings for aesthetic or mechanical wear. KEMPEROL® 1K-PUR membrane must be allowed to cure a minimum of three days prior to the application of any KEMPERDUR surfacing materials. Full cure is typically achieved in 7 days, and is required prior to application of non-Kemper coating, surfacing and solid overburden.

**Disposal**

**Ordering Information**
KEMPEROL® 1K-SF Roofpatch

Pack includes:
Pre-saturated fleece with a single-component resin

Product Description
KEMPEROL® 1K-SF Roofpatch is a single-component, UV-stable, high performance, self-terminating cold liquid applied, polyester reinforced, solvent free, membrane used to patch leaks and cracks on flat and sloping surfaces.

Composition & Materials
The patch contains a pre-saturated KEMPEROL® polyester reinforcing fleece with KEMPEROL® 1K-SF cold liquid-applied resin.

Use
The multi-purpose patch is suitable for repairs on a wide range of surfaces without the use of a primer: bitumen sheets, PVC single-ply sheets, concrete, wood and metal. For all other substrates please refer to the Substrate Primer Selection Table.

Limitations
KEMPEROL® Roofpatch may be applied when the ambient temperature is 41° F (5° C) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. The maximum application temperature is approximately 86° F (30° C).

Yield
Each Roofpatch is 16” x 10” (41 cm x 27 cm)

Storage
Always store in cool and dry locations. Do not store in direct sunlight. Approximate shelf life is 12 months with proper storage.

Surface Preparation
All surfaces must be free from gross irregularities, loose, unsound or foreign material, such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the membrane. This requires careful cleaning and preparation of existing surfaces.

Priming
No priming is required on: Bitumen sheets, PVC single-ply sheets, concrete, wood and metal. For all other substrates please refer to the Kemper System priming guidelines.

Properties

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Gray</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>Nominal thickness</td>
<td>70 mils</td>
</tr>
<tr>
<td>Usage time*</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Rainproof after*</td>
<td>1 hour</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>12 hours</td>
</tr>
<tr>
<td>Completely hardened</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Crack spanning</td>
<td>2 mm/0.08 inch</td>
</tr>
</tbody>
</table>

* Values obtained at 73°F/23°C, 50% relative humidity, may vary depending on air flow, humidity and temperature.

Sustainability Information
Rapidly Renewable Resource 0%
Recycled Content % (post/pre) 0 / 0
Manufacture Location Germany

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.com
**Application**

Step 1: Surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of membrane.

Step 2: Make sure area is dry. If not, use a towel to absorb liquid.

Step 3: Locate gloves on the outside of the aluminum bag.

Step 4: Prior to opening the aluminum bag, protect the hands by putting on gloves.

Step 5: Use the side and palm of your hand to evenly distribute the material within the aluminum bag.

Step 6: In order to make sure the patch is fully saturated after storage, ensure that the resin has been moved to all corners of the aluminum bag by brushing or sliding hand and/or finger across the patch before opening the bag.

Step 7: Tear open the bag with the help of the tear aid.

Step 8: Carefully pull out the Kemperol® 1K-SF Roofpatch. Apply to the area to be repaired, hold tight with one hand and pull the whole Roofpatch out of the aluminum bag. Approximate working time is 30 minutes.

Step 9: To complete the application smooth the Roofpatch with your hands or brush to remove air bubbles and creases. To cover larger areas, patches may be applied wet on wet, overlapping by 2”. Rainproof after 1 hour.

Note: Color granules may be broadcast into the wet Roofpatch to match the surrounding appearance.

**Disposal**

Cured KEMPEROL® 1K-SF Roofpatch may be disposed of in standard landfills. This is accomplished by opening the aluminum bag and exposing the patch to air to allow the resin to cure.

**Ordering Information**

KEMPEROL® 1K-SF Roofpatch:
Item#: 110-01-001  
Size: 16” x 10” patch
**Product Information**

**KEMPEROL® 1K-SF**

Pack includes:
Single component polyurethane resin

**Product Description**

KEMPEROL® 1K-SF is a single-component, UV-stable, high performance, cold liquid-applied, solvent free waterproofing resin for roofing flashing and repair applications.

**Composition & Materials**

A membrane is created in the field by combining the KEMPEROL® 1K-SF cold liquid-applied resin with KEMPEROL® polyester reinforcing fleece. Membrane may be applied using 120 fleece.

**Use**

KEMPEROL® 1K-SF membrane are suitable for a wide range of exterior flashing applications including perimeter, pipe and drain penetrations, patching of leaks and the repair of other roof details.

**Limitations**

KEMPEROL® 1K-SF may be applied when the ambient temperature is 41° F (5° C) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. The maximum application temperature is approximately 86° F (30° C).

**Yield**

Using 120 Fleece:  19 ft² (1.76 m²) per 7 kg work pack.

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

**Storage**

Always store in cool and dry locations. Do not store in direct sunlight. Approximate shelf life is 9 months with proper storage.

**Surface Preparation**

All surfaces must be free from gross irregularities, loose, unsound or foreign material, such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the membrane. This requires careful cleaning and preparation of existing surfaces.

**Priming**

No priming is required on: Bitumen sheets, PVC single-ply sheets, concrete, wood and metal. For all other substrates please refer to the Kemper System priming guidelines.

<table>
<thead>
<tr>
<th>Sustainability Information</th>
<th>Membrane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Property</strong></td>
<td><strong>Values</strong></td>
</tr>
<tr>
<td>Color</td>
<td>Gray</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>Nominal thickness</td>
<td>70 mils</td>
</tr>
<tr>
<td>Usage time*</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Rainproof after*</td>
<td>1 hour</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>12 hours</td>
</tr>
<tr>
<td>Completely hardened</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Crack spanning</td>
<td>2 mm x 0.08 inch</td>
</tr>
</tbody>
</table>

* Values obtained at 73°F 23° C, 50% relative humidity, may vary depending on air flow, humidity and temperature.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.com
Note: Prior to opening the containers of KEMPEROL® 1K-SF Resin, protect hands and wrists by gloves.

Manually stir the contents of the newly opened can thoroughly until a uniform color is achieved, with no light or dark streaks present.

Take caution when using mechanical mixing equipment such as spiral agitators as this may introduce moisture into the resin, causing it to thicken and cure prematurely.

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

Note: Once KEMPEROL®1K-SF cures for 24 hours it will not accept any additional coats, finishes or surfacing materials. Colored granules may be broadcast into the wet resin to match an existing aesthetic finish.

Cured 1K-SF resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

Note: Uncured 1K-SF resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

KEMPEROL® 1K-SF work pack:

<table>
<thead>
<tr>
<th>Item#</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>105-41-070</td>
<td>7 kg can</td>
</tr>
</tbody>
</table>
# Product Information

**KEMPEROL® 022**

Pack includes:  
Component A: Base Resin, Component B: Hardner

<table>
<thead>
<tr>
<th>Product Description</th>
<th><strong>KEMPEROL® 022</strong> is a two-component, high performance, cold-liquid applied, solvent free, crack-spanning waterproofing resin for beneath tile applications.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition &amp; Materials</td>
<td>A monolithic membrane is created in the field by combining the Kemperol 022 two-part, cold-applied synthetic liquid resin with Kemperol 500 reinforcing fleece. Membrane may be applied using standard fleece sizes available in 6”, 27”, and 41” nominal widths.</td>
</tr>
<tr>
<td>Use</td>
<td>KEMPEROL® 022 membrane is suitable for interior waterproofing applications for a variety of substrates beneath tile, such as shower pans, bathrooms, water features, kitchens, mechanical rooms and other wet room applications. Exceeds ANSI A118.10 specification for a load bearing, bonded, waterproof membrane.</td>
</tr>
</tbody>
</table>
| Limitations | KEMPEROL® 022 membrane is not intended for exterior applications and UV exposure. The membrane must be covered up with a tile adhesive and tile within eight (8) days of application.  
KEMPEROL® 022 may be applied when the ambient temperature is 50° F (10° C) and rising, and the substrate temperature is a minimum of 5 degrees above the dew point. The maximum application temperature is approximately 95° F (35° C). |
| Yield | Using 500 fleece: 30 s.f. (2.8 kg/m²) per 6 kg work pack |
| Storage | Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35° F (1.7° C) or above 80° F (27° C). Approximate shelf life 12 months with proper storage. For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70° F (18-21° C). |
| Precautions | Review Safety Data Sheets before handling, available online at kempersystem.net. |
| Surface Preparation | All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. This requires careful preparation of existing horizontal and vertical substrates; cracks are filled, expansion joints are prepared, flashings are removed or modified, and termination points are determined. Substrates and penetrations are prepared to rigorous industry standards, and may require scarifying, sandblasting or grinding in some cases to achieve a suitable substrate. |
| Priming | Concrete, cement boards, gypsum boards, plywood, and metal surfaces do not require primer application. For plaster substrates please review current primer recommendations.  
**Note:** Prior to opening the containers of KEMPEROL® 022 Resin wear appropriate safety glasses and protect hands and wrists by wearing gloves. |
| Mixing of Resin | **Step 1:** Premix resin Component A thoroughly with a spiral agitator.  
**Step 2:** Pour resin Component B into Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed without creating any bubbles or streaks. The Resin solution should be a uniform color, with no light or dark streaks present.  
**NOTE:** DO NOT break down units into smaller quantities - mix the entire work pack. |

---

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224  
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.com
Measure and pre-cut fleece. Ensure that new cement board and plywood has had an opportunity to dry before applying resin. All cover board joints should be caulked and stripped with the 6” wide Kemperol 500 fleece and 022 resin.

**Step 1:** After the Resin is mixed, using a Kemperol roller nap or brush apply 2/3 of the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft².

**Step 2:** Roll the Kemperol Fleece directly into the Resin, avoiding folds and wrinkles. Use the roller or brush to work the resin into the fleece, saturating from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these areas before proceeding.

**Step 3:** Add the remaining 1/3 of the resin to the top of the fleece and finish the fleece's saturation. Roll this final coating into the fleece, which will result in a glossy appearance. Ensure a 2” (5cm) overlap between rolls of fleece. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these faults before the resin cures.

**Step 4:** While the resin is still wet broadcast Surfacing Sand (0.4-0.8 mm), at the approximate rate of 30 lbs./100 ft² (1.5 kg/m²).

**NOTE:** Kemperol 022 membrane does not require a protective alkalinity barrier.

**Step 5:** Once the Kemperol 022 membrane has cured the tile adhesive application may begin. Please follow the tile adhesive manufacturer's application guidelines.

Cured 022 resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured 022 resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**KEMPEROL® 022 Work pack**

<table>
<thead>
<tr>
<th>Item#</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>601-78-055</td>
<td>6 kg</td>
</tr>
</tbody>
</table>

**500 Fleece Reinforcement**

<table>
<thead>
<tr>
<th>Item#</th>
<th>Width</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-115-01</td>
<td>41.3” Wide</td>
</tr>
<tr>
<td>112-115-02</td>
<td>27.6” Wide</td>
</tr>
<tr>
<td>112-115-03</td>
<td>6” Wide</td>
</tr>
</tbody>
</table>
### KEMPEROL® ADDITIVES

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KEMPEROL® CP CATALYST POWDER</strong></td>
<td>Peroxide-based catalyst powder required for use with BRM and V210M polyester-based and AC PMMA-based resins. Added directly to the resins. Pre-measured quantities available for all sizes of BRM and V210 work packs and may require adjustment for the AC products.</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Do not use with other resins.</td>
<td></td>
</tr>
<tr>
<td><strong>KEMPEROL® UP-I INHIBITOR</strong></td>
<td>Weather-related additive for use with BRM and V210M polyester-based resins, when the air temperature is 75 ºF and rising. Reactive agent used to delay setting of polyester resin and increase resin working time in hot weather. Added directly to BRM and V210M prior to addition of catalyst. Pre-measured quantities are available.</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Do not use with other resins.</td>
<td></td>
</tr>
<tr>
<td><strong>KEMPEROL® UP-A COLD ACTIVATOR</strong></td>
<td>Weather-related additive for use with BRM and V210M polyester-based resins, when the air temperature is 50 ºF and dropping. Reactive agent used to accelerate setting of polyester resin in cold weather. Added directly to BRM and V210M prior to addition of catalyst. Pre-measured quantities are available.</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Do not use with other resins.</td>
<td></td>
</tr>
<tr>
<td><strong>KEMPEROL® A 2K-PUR ACCELERATOR</strong></td>
<td>Weather-related additive for use with 2K-PUR urethane-based resin, when the air temperature is 50 ºF and dropping. Reactive agent used to accelerate setting of urethane resin in cold weather. Added to 2K-PUR resin Component A prior to adding Component B.</td>
</tr>
<tr>
<td><strong>NOTE:</strong> Do not use with other resins.</td>
<td></td>
</tr>
<tr>
<td><strong>KEMPERTEC® 1K THINNER</strong></td>
<td>Solvent blend used to reduce viscosity of Deko Transparent resin during sealing of aggregate surfacing.</td>
</tr>
<tr>
<td><strong>KEMPERTEC® TX THIXOTROPIC ADDITIVE</strong></td>
<td>Amorphous silicone dioxide powder. Thickening agent to be used with mineral-filled self-leveling TC and AC surfacing materials to facilitate installation on inclined substrate surfaces from 3% - 20% slope.</td>
</tr>
</tbody>
</table>

**NOTE:** SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.
KEMPEROL® CP Catalyst Powder

To be used with BRM, V210M & AC products

Product Description

KEMPEROL® CP Catalyst Powder is a reactive agent used to induce setting of KEMPEROL® BRM, V210M resin & AC products.

Materials

A reactive agent based on 50% dibenzoyl peroxide.

Limitations

To be used in pre-measured quantity with KEMPEROL® BRM, V210M and AC products ONLY.

Yield

Refer to the technical data sheet of the corresponding product to determine the quantity of Catalyst Powder to be added.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 ºC) or above 80 °F (27 ºC). Approximate shelf life 36 months with proper storage. Store separately from the other products.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 ºC).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Mixing of Resin

Note: Prior to opening the containers of KEMPEROL® Resin, wear appropriate safety glasses and protect hands and wrists by wearing gloves.

Step 1: Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color.

Step 2: Add the Catalyst Powder to resin Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed. Review individual product data sheets for additional mixing instructions.

Disposal

Cured KEMPEROL® resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPEROL® resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

Ordering Information

KEMPEROL® CP Catalyst Powder (when ordered separately):

Item #: Size:
AKZO-77-252  600 g bag (for 20 kg BRM/V210M workpack)
AKZO-77-253  300 g bag (for 10 kg BRM/V210M workpack)
AKZO-77-252  100 g bag (for AC products)

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
# KEMPEROL® UP-I Inhibitor

**To be used with KEMPEROL® BRM and V210M resins**

## Product Description

**KEMPEROL® UP-I Inhibitor** is a reactive agent used to retard setting of KEMPEROL® unsaturated polyester resin when the air temperature is 75 ºF and rising.

## Materials

A reactive agent based on 4-tert-butylcatechol.

## Limitations

To be used in pre-measured quantity with KEMPEROL® BRM and V210M resin products ONLY.

## Yield

One pre-measured unit per work pack.

## Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 ºF (1.7 ºC) or above 80 ºF (27 ºC). Approximate shelf life 24 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

## Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

## Mixing of Cold Activator & Resin

Note: Prior to opening the containers of KEMPEROL® Resin, wear appropriate safety glasses and protect hands and wrists by wearing gloves.

**For KEMPEROL® BRM & V210M ONLY:**

**Step 1:** Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color.

**Step 2:** Add the UP-I Inhibitor to resin Component A and mix with the same agitator for 5 minutes or until completely mixed. Add CP Catalyst Powder to resin and mix with the same agitator for 2 minutes or until completely mixed. The resin may be used immediately after mixing.

## Disposal

Cured KEMPEROL® resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPEROL® resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

## Ordering Information

<table>
<thead>
<tr>
<th>KEMPEROL® UP-I Inhibitor:</th>
<th>Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item #: 562-01-208</td>
<td>240 g/can (for 20 kg BRM/V210M work pack)</td>
</tr>
<tr>
<td>Item #: 562-01-108</td>
<td>150 g/can (for 10 kg BRM/V210M work pack)</td>
</tr>
</tbody>
</table>

### DISCLAIMER:

*NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE.* User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.

__Customer/Technical Service:__

Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
KEMPEROL® UP-A Cold Activator

To be used with KEMPEROL® BRM and V210M resins

**Product Description**

KEMPEROL® UP-A Cold Activator is a reactive agent used to accelerate setting of KEMPEROL® unsaturated polyester resin when the air temperature is 50 °F and dropping.

**Materials**

A reactive agent based on N,N-Dimethyl-P-Toludines in Diphenyl-Toluyl-Phosphates.

**Limitations**

To be used in pre-measured quantity with KEMPEROL® BRM and V210M resin products ONLY.

**Yield**

One pre-measured unit per work pack.

**Storage**

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

**Precautions**

Review Safety Data Sheets before handling, available online at kempersystem.net.

Note: Prior to opening the containers of KEMPEROL® Resin, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves.

**Mixing of Cold Activator & Resin**

For KEMPEROL® BRM & V210M ONLY:

**Step 1:** Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color.

**Step 2:** Add the UP-A Cold Activator to resin Component A and mix with the same agitator for 5 minutes or until completely mixed. Add CP Catalyst Powder to resin and mix with the same agitator for 2 minutes or until completely mixed. The resin may be used immediately after mixing.

**Disposal**

Cured KEMPEROL® resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPEROL® resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

**Ordering Information**

KEMPEROL® UP-A Cold Activator:

<table>
<thead>
<tr>
<th>Item #:</th>
<th>Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>562-02-207</td>
<td>200 g/can (for 20 kg BRM/V210M workpack)</td>
</tr>
<tr>
<td>562-02-107</td>
<td>100g/can (for 10kg BRM/V210M workpack)</td>
</tr>
</tbody>
</table>

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
# KEMPEROL® A2K-PUR Accelerator

**To be used with KEMPEROL® 2K-PUR resin**

**Component A (Cream Formulation)**

<table>
<thead>
<tr>
<th>Product Description</th>
<th><strong>KEMPEROL® A2K-PUR Accelerator</strong> is a reactive agent used to accelerate setting of KEMPEROL® 2K-PUR polyurethane resin when the air temperature is 50 ºF and dropping.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Accelerator based on a special activator.</td>
</tr>
<tr>
<td>Limitations</td>
<td>To be used in pre-measured quantity with KEMPEROL® 2K-PUR polyurethane resin.</td>
</tr>
<tr>
<td>Yield</td>
<td>One pre-measured unit per 12.5 kg work pack.</td>
</tr>
<tr>
<td>Storage</td>
<td>Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 45 ºF (7 ºC) or above 85 ºF (29ºC). Approximate shelf life 6 months with proper storage. For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).</td>
</tr>
<tr>
<td>Precautions</td>
<td>Review Safety Data Sheets before handling, available online at kempersystem.net.</td>
</tr>
<tr>
<td>Mixing of 2K-PUR</td>
<td>Note: Prior to opening the containers of KEMPEROL® Resin, wear appropriate safety glasses and protect hands and wrists by wearing gloves.</td>
</tr>
<tr>
<td>Resin &amp; Accelerator</td>
<td><strong>Step 1:</strong> Mix resin Component A (cream formulation) with a spiral Kemper agitator, until the liquid is a uniform cream color.</td>
</tr>
<tr>
<td></td>
<td><strong>Step 2:</strong> Add the A2K-PUR Accelerator to resin Component A and mix with the same agitator for 5 minutes or until completely mixed. Once mixed, component B may be added immediately.</td>
</tr>
<tr>
<td>Disposal</td>
<td>Cured KEMPEROL® resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPEROL® resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.</td>
</tr>
</tbody>
</table>
| Ordering Information| **KEMPEROL® A2K-PUR Accelerator:**
|                     | Item #: 562-03-127
|                     | Size: 41.5 g/can (for 12.5 kg 2K-PUR work pack)                                                                                                                                                    |

**Disclaimer**: No warranty, express or implied, is made in this document. The product is not claimed to be merchantable or fit for any particular purpose. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPETEC® 1K Thinner

To be used with KEMPERDUR® DEKO TRANSPARENT ONLY

**Product Description**

KEMPETEC® 1K Thinner is a specially formulated solvent blend used to reduce viscosity and improve workability of KEMPERDUR® Deko Transparent polyurethane resin during sealing of aggregate surfacing.

**Materials**

A combination of organic solvents based on naphtha and 1,2,4-trimethylbenzene.

**Limitations**

To be used in pre-measured quantity with KEMPERDUR® Deko Transparent resin ONLY.

**Yield**

Half of unit per KEMPERDUR® Deko Transparent 6 kg container.

**Storage**

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 ºC) or above 80 °F (27 ºC). Approximate shelf life 24 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

**Precautions**

Review Safety Data Sheets before handling, available online at kempersystem.net.

*Note: Prior to opening the containers of KEMPEROL® Resin, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves.*

**Mixing of Thinner & Resin**

Add half a can (250 ml) of 1K Thinner to the KEMPERDUR® Deko Transparent and manually stir to thoroughly mix together until a uniform consistency is achieved. The resin may be used immediately after mixing.

Do not use mechanical mixing equipment such as spiral agitators as this will introduce moisture into the resin, causing it to thicken and cure prematurely.

**Disposal**

Cured KEMPERDUR® resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPEROL® resin and KEMPETEC® thinner are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin or thinner away.

**Ordering Information**

KEMPETEC® 1K Thinner:

Item #: 366-00-050  Size: 500 ml/can

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPERTEC® TX Thixotropic Additive

To be used with KEMPERDUR® TC, AC and FC Coatings ONLY

Product Description

KEMPERTEC® TX Thixotropic Additive is a thickening agent to be used with KEMPERDUR® TC and AC Traffic Coatings to facilitate installation on inclined substrate surfaces from 3% - 20% slope.

Composition & Materials

KEMPERTEC® TX Thixotropic Additive is a highly dispersable, amorphic silicone dioxide powder.

Limitations

To be used in pre-measured quantity with KEMPERDUR® TC and AC Coatings ONLY.

Yield

KEMPERTEC® TX Thixotropic Additive will allow the KEMPERDUR® surfacing materials to be trowel applied without running or sagging down the inclined substrate surface. The following quantities are suggested as a guideline, but may vary depending on exact incline, ambient and substrate temperature, and applicator preference.

### KEMPERDUR® TC – 12.5 kg Workpack - Approximately 90 g

<table>
<thead>
<tr>
<th>Incline Slope</th>
<th>TX Thixotropic aprox. quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 5%</td>
<td>10 g</td>
</tr>
<tr>
<td>5 - 7%</td>
<td>20 g</td>
</tr>
<tr>
<td>7 - 10%</td>
<td>30 g</td>
</tr>
<tr>
<td>11 - 20%</td>
<td>60 g</td>
</tr>
</tbody>
</table>

### KEMPERDUR® AC – see table

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 40 °F (5 °C) or above 80 °F (27 °C). Keep packages tightly closed and protect from humidity. Approximate shelf life 12 months in sealed original containers.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

Precautions

Refer to KEMPEROL® Material Safety Data Sheet (MSDS) prior to using or handling.

Note: Prior to opening the containers of KEMPERTEC® TX Thixotropic Additive, TC and AC Coatings, wear appropriate safety glasses, masks and protect hands and wrists by wearing gloves.

Mixing of Thixotropic Additive & Surfacing

KEMPERTEC® TX Thixotropic Additive is very light and is easily blown about. Take care to shield the mixing location from winds during the use of this product.

**Step 1:** Add the calculated quantity of KEMPERTEC® TX Thixotropic Additive into Component A of the KEMPERDUR® TC / AC Traffic Coating, and mix on low speed with a spiral mixer until the Additive is incorporated into Component A, without streaks.

**Step 2:** Complete the mixing of all three components of KEMPERDUR® TC / AC Traffic Coating in accordance with standard instructions.

Disposal

KEMPERTEC® TX Thixotropic Additive mixed with TC / AC Traffic Coating material may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components together. Note: Unmixed KEMPERTEC® TX Thixotropic Additive in incidental quantities may be disposed of in standard landfills, in accordance with local, state and federal regulations.
KEMPERTEC® TX Thixotropic Additive:
Item #: 562-10-109
Size: Box of 4 (150g) bags
KEMPEROL® REINFORCING FLEECE

KEMPEROL® 500 FLEECE
Woven polyester fabric reinforcement. 50 g/sq.m. weight. Used with KEMPEROL® 022 cold liquid-applied reinforced membrane system. The 6” width is used for reinforcing joints in cover boards, as well as over butt joints applications, where visible overlaps of membrane reinforcement is not desirable, such as balconies and terraces. Also can be used to strip over membrane repairs where the repair membrane is set into the existing membrane and not overlapped onto it.

KEMPEROL® 120 FLEECE
Non-woven needle-punched polyester reinforcing fabric. 120 g/sq.m. weight. Light weight reinforcement, suitable for use with 2K-PUR resin for interior applications where a pedestrian traffic surfacing is to be applied. Also used as 4” wide reinforcement strip over joints in plywood decks, and joints between insulation and cover boards.

NOTE: Do not use with BRM and V210M resins as primary reinforcement.

KEMPEROL® 165 FLEECE
Non-woven needle-punched polyester reinforcing fabric. 165 g/sq.m. weight. Standard weight reinforcement, suitable for use with all KEMPEROL® resins for all applications. Multiple widths available to accommodate a variety of flashing conditions and minimize the need for field cutting.

NOTE: Standard fleece to be used for most Kemper System applications.

KEMPEROL® 200 FLEECE
Non-woven needle-punched polyester reinforcing fabric. 200 g/sq.m. weight. Heavy weight reinforcement, suitable for use with BRM/V210M resins for applications where a thicker membrane is required.

NOTE: Do not use with 2K-PUR and AC resins.

NOTE: SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.
KEMPEROL® 500 Fleece

Polyester Reinforcement Fleece for use with KEMPEROL® 022 Resin.

Product Description

KEMPEROL® 500 Fleece is a fabric reinforcement used with KEMPEROL® 022 cold liquid-applied reinforced membrane system.

Composition & Materials

KEMPEROL® 500 fleece is a polyester fabric.

Use

KEMPEROL® fleece is used as a fabric reinforcement in KEMPEROL® 022 cold fluid-applied reinforced membrane system to improve strength tear and puncture resistance while maintaining membrane uniformity.

Limitations

Fleece must be kept clean and dry prior to and during application.

Yield

Approximate sq. ft. for: 41.3” Roll is 535 sq. ft. / 27.6” Roll is 258 sq. ft. / 6” Roll is 41 sq. ft.

Note: Allow 10% for 2” (5 cm) over-laps and for flashings and waste.

Storage

Always store in cool and dry location. Store flat to avoid deforming rolls and creasing fabric. Shelf life indefinite with proper storage.

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Application

Please refer to the KEMPEROL® 022 resin product data sheet for application instructions.

Disposal

KEMPEROL® Fleece may be disposed of in standard landfills in accordance with local, federal and state regulations.

Ordering Information

KEMPEROL® 500 Fleece

<table>
<thead>
<tr>
<th>Item#</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>112-115-01</td>
<td>41.3” Roll</td>
</tr>
<tr>
<td>112-115-02</td>
<td>27.6” Roll</td>
</tr>
<tr>
<td>112-115-03</td>
<td>6” Roll</td>
</tr>
</tbody>
</table>

Sustainability Information

<table>
<thead>
<tr>
<th>Rapidly Renewable Resource</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Germany</td>
</tr>
</tbody>
</table>
KEMPEROL® Fleece (200,165,120)

Polyester Reinforcement Fleece for use with KEMPEROL® Membranes.

**Product Description**

KEMPEROL® Fleece is a non-woven, needle-punched fabric reinforcement used with KEMPEROL® cold liquid-applied reinforced unsaturated polyester, polyurethane and PMMA membrane systems.

**Composition & Materials**

KEMPEROL® fleece is a non-woven, needle-punched polyester fabric.

**Use**

KEMPEROL® fleece is used as a fabric reinforcement in KEMPEROL® cold liquid-applied reinforced unsaturated polyester, polyurethane and PMMA membrane systems to improve strength tear and puncture resistance while maintaining membrane uniformity.

**Limitations**

Fleece must be kept clean and dry prior to and during application.

**Yield**

110 s.f. (10.2 m²) of fleece per 100 s.f. (9.3 m²) of surface coverage.

*Note: Allow 10% for 2" (5 cm) over-laps and for flashings and waste.*

**Storage**

Always store in cool and dry location. Store flat to avoid deforming rolls and creasing fabric. Shelf life indefinite with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

**Precautions**

Review Safety Data Sheets before handling, available online at kempersystem.net.

**Application**

Mix and apply KEMPEROL® resin in strict accordance with KEMPEROL® resin instructions. Apply mixed resin liberally to the prepared surface with a roller using a broad, even stroke. Roll out dry polyester fleece onto the liquid resin mix, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure). The fleece will begin to rapidly saturate with the liquid resin mix. Allow fleece to saturate with resin from bottom up prior to pouring additional resin on top of surface. Applying pressure, roll the fleece with a medium nap roller to eliminate air bubbles, wrinkles, etc. Apply additional liquid resin mix on top of fleece until fully saturated and continue to work resin. The correct amount of resin will leave no whiteness in fleece and there will be a slightly fibrous surface texture. However, allow no ponding or excessive build-up of the resin. The coating should be smooth and uniform.

**Disposal**

KEMPEROL® Fleece may be disposed of in standard landfills.

### Fleece Properties

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>200</th>
<th>165</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>White</td>
<td>White</td>
<td>White</td>
</tr>
<tr>
<td>Physical state</td>
<td>Solid</td>
<td>Solid</td>
<td>Solid</td>
</tr>
<tr>
<td>Thickness (165/200 fleece)</td>
<td>70 mils</td>
<td>50 mils</td>
<td>40 mils</td>
</tr>
<tr>
<td>Weight (g/m²)</td>
<td>200</td>
<td>165</td>
<td>120</td>
</tr>
<tr>
<td>Tensile strength @ break</td>
<td>&gt;2,200 lbs.</td>
<td>&gt;1,775 lbs.</td>
<td>&gt;1,550 lbs.</td>
</tr>
<tr>
<td>Elongation</td>
<td>&gt;75%</td>
<td>&gt;75%</td>
<td>&gt;65%</td>
</tr>
<tr>
<td>Tear resistance</td>
<td>&gt;885 lbs.</td>
<td>&gt;665 lbs.</td>
<td>&gt;530 lbs.</td>
</tr>
<tr>
<td>Puncture strength</td>
<td>&gt;1,245 lbs.</td>
<td>&gt;1,110 lbs.</td>
<td>&gt;1,065 lbs.</td>
</tr>
</tbody>
</table>
KEMPEROL® Fleece is available in rolls 164 feet (50 m) long by 4, 8, 10, 13, 20, 27 and 41-inch nominal widths.

<table>
<thead>
<tr>
<th>Fleece Width</th>
<th>Fleece 200</th>
<th>Fleece 165</th>
<th>Fleece 120</th>
</tr>
</thead>
<tbody>
<tr>
<td>41.3” (105 cm)</td>
<td>112 112 01</td>
<td>112 116 01</td>
<td>312 111 21</td>
</tr>
<tr>
<td>27.6” (70 cm)</td>
<td>-</td>
<td>112 116 02</td>
<td>312 111 23</td>
</tr>
<tr>
<td>20.7” (53 cm)</td>
<td>-</td>
<td>112 116 03</td>
<td>-</td>
</tr>
<tr>
<td>13.8” (35 cm)</td>
<td>-</td>
<td>112 116 04</td>
<td>-</td>
</tr>
<tr>
<td>10.3” (26 cm)</td>
<td>-</td>
<td>112 116 05</td>
<td>312 111 25</td>
</tr>
<tr>
<td>8.3” (21cm)</td>
<td>-</td>
<td>112 116 06</td>
<td>-</td>
</tr>
<tr>
<td>4.1” (10 cm)</td>
<td>-</td>
<td>112 116 07</td>
<td>-</td>
</tr>
</tbody>
</table>

Sustainability Information

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapidly Renewable Resource</td>
<td>0%</td>
</tr>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Canada, Germany</td>
</tr>
</tbody>
</table>

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
**KEMPERDUR® SURFACING MATERIALS**

**KEMPERDUR® BSF-R FINISH**
Single-component acrylic, water-borne, fire-rated color coating for use as a smooth coating, an aggregate bonding resin, and an aggregate sealing resin. Low VOC. CRRC approved. Two coats recommended for best appearance.

*NOTE: Color made to order, allow three week lead time. Do not apply if freezing temperatures or precipitation is anticipated within 48 hours.*

**KEMPERDUR® DEKO 2KS-FR FINISH**
Two-component urethane, solvent-based fire-rated color coating for use as a smooth coating, an aggregate bonding resin, and an aggregate sealing resin. Smooth coating CRRC approved. Two coats recommended for best appearance.

*NOTE: Color made to order -- allow three week lead time.*

**KEMPERDUR® DEKO FINISH**
Two-component urethane, solvent-based color coating for use as a smooth architectural coating for flashings and detailing. Also suitable as a color coating for fountains and other submerged applications. Two coats recommended for best appearance.

*NOTE: Color made to order -- allow three week lead time.*

**KEMPERDUR® TC TRAFFIC COATING**
Three-component polyurethane, mineral-filled, self-leveling traffic coating system for use with mineral aggregates to create a heavy-duty traction-enhanced surfacing. For application direct to primed concrete substrate or to KEMPEROL® 2K-PUR membrane. Fire-rated when sealed with fire-rated sealer. LOW VOC.

*NOTE: For use over concrete substrates only.*

**KEMPERDUR® EP-FR FINISH**
Two-component epoxy, fire-rated color coating for use as a smooth coating, an aggregate bonding resin, and an aggregate sealing resin. Standard stone gray color. Coating for parking decks, use standard stone grey color.

*NOTE: Minor yellowing might occur in UV exposure.*

**KEMPERDUR® FC FLOOR COATING**
Three-component urethane, mineral-filled, self-leveling floor coating system to create a heavy-duty utility surfacing. For interior application only. LOW VOC.

*NOTE: For use over concrete substrates only.*

**KEMPERDUR® DEKO TRANSPARENT**
Single-component urethane, solvent-based transparent sealer for use as an aggregate bonding resin and aggregate sealing resin. Preferred sealer for vertical aggregate finish applications.

**KEMPERDUR® FINISH GLOSSY**
Utility-grade single-component urethane, solvent-based, transparent, topcoat sealer for use over color quartz granules.

**KEMPERDUR FGC GLASS & FACADE COATING**
One component, UV-stable, high performance polyurethane coating system used as a glass and skylight coating with 500 fleece reinforcement for cracks and transitions.
Quick-dry three-component polymethyl methacrylate (PMMA) including a catalyst, mineral-filled, self-leveling traffic coating system for outdoor use only. To be used with mineral aggregates to create a heavy-duty traction-enhanced surfacing. For application direct to primed concrete substrate or to KEMPEROL® AC membrane.

**NOTE:** For use over concrete substrates only.

KEMPERDUR® AC FINISH

Quick-dry two-component polymethyl methacrylate (PMMA) coating including a catalyst for use as a smooth coating or aggregate sealing resin for outdoor applications only. Three standard finishes, transparent, stone gray, and anthracite. Finish coat for KEMPEROL® AC membrane and KEMPERDUR® AC Traffic Coating.

KEMPERDUR® SURFACING SAND

Kiln-dried #0 and #1 graded quartz sand suitable for broadcast into epoxy primers, epoxy and PMMA alkalinity protective surfacing, and epoxy, adhesion key surfacing. Also suitable for broadcast into aggregate bonding resin for exposed aggregate surfacings where special colored aggregate is not required.

CERAMAQUARTZ AGGREGATE BLENDS

Ceramic-coated rounded aggregate suitable for broadcast into TC, AC Traffic Coating and other aggregate bonding resins for pedestrian traffic areas such as balconies and terraces. Ten standard color blends are available.

**NOTE:** Aggregate blends are made to order -- allow two week lead time.

**NOTE:** SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.

Rev. 07/2015
### REFLECTIVE ROOF COATING

- Requirement: Fire-Rated, Odor-free and Low VOC (Matte Finish)

- **RECOMMENDED SURFACING SYSTEM**
  - KEMPERDUR® BSF-R Finish
  - KEMPERDUR® Deko 2KS-FR Finish

### REFLECTIVE AGGREGATE ROOF COATING

- Requirement: Fire-Rated, Odor-free and Low VOC (Matte Finish)

- **RECOMMENDED SURFACING SYSTEM**
  - Kemperol® 2K-PUR resin (10 mils) or BSF-R Finish/Surfacing Sand/BSF-R Finish (2 coats Min)
  - Kemperol® 2K-PUR resin (10 mils) or 2KS-FR Finish/Surfacing Sand/2KS-FR Finish (2 coats Min)

### SURFACING SELECTION TABLE

<table>
<thead>
<tr>
<th>ROOF COATING APPLICATIONS</th>
<th>SURFACING SELECTION TABLE</th>
<th>TRAFFIC SURFACING APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>REFLECTIVE ROOF COATING</td>
<td>Requirement: Fire-Rated, Odor-free and Low VOC (Matte Finish)</td>
<td>CONCRETE BALCONY/TERRACE SURFACING Requirement: Color Aggregate</td>
</tr>
<tr>
<td></td>
<td><strong>RECOMMENDED SURFACING SYSTEM</strong></td>
<td><strong>RECOMMENDED SURFACING SYSTEM</strong></td>
</tr>
<tr>
<td></td>
<td>KEMPERDUR® BSF-R Finish</td>
<td>KEMPERDUR® TC/Ceramaquartz/Finish</td>
</tr>
<tr>
<td></td>
<td>KEMPERDUR® Deko 2KS-FR Finish</td>
<td>WOOD DECK BALCONY/TERRACE SURFACING Requirement: Color Aggregate</td>
</tr>
<tr>
<td>REFLECTIVE AGGREGATE ROOF COATING</td>
<td>Requirement: Fire-Rated, Odor-free and Low VOC (Matte Finish)</td>
<td>PARKING DECK SURFACING Requirement: Gray Finish, Fire-rated and Low VOC</td>
</tr>
<tr>
<td></td>
<td><strong>RECOMMENDED SURFACING SYSTEM</strong></td>
<td><strong>RECOMMENDED SURFACING SYSTEM</strong></td>
</tr>
<tr>
<td></td>
<td>Kemperol® 2K-PUR resin (10 mils) or BSF-R Finish/Surfacing Sand/BSF-R Finish (2 coats Min)</td>
<td>KEMPERDUR® TC/Surfacing Sand/EP-FR Finish</td>
</tr>
<tr>
<td></td>
<td>Kemperol® 2K-PUR resin (10 mils) or 2KS-FR Finish/Surfacing Sand/2KS-FR Finish (2 coats Min)</td>
<td>PARKING DECK SURFACING Requirement: Color Aggregate</td>
</tr>
<tr>
<td></td>
<td><strong>RECOMMENDED SURFACING SYSTEM</strong></td>
<td><strong>RECOMMENDED SURFACING SYSTEM</strong></td>
</tr>
<tr>
<td>SMOOTH INTERIOR FLOOR COATING</td>
<td>Requirement: Low VOC</td>
<td>SMOOTH INTERIOR FLOOR COATING Requirement: Low VOC</td>
</tr>
<tr>
<td></td>
<td>KEMPERDUR® FC or KEMPERDUR® TC/ KEMPERDUR® EP-FR</td>
<td>KEMPERDUR® TC/Ceramaquartz/Finish</td>
</tr>
</tbody>
</table>

---

*Surfing Selection Table for KEMPEROL® 2K-PUR*

*KEMPERDUR® TC/Ceramaquartz/Finish*

*KEMPERDUR® TS/Ceramaquartz/Finish*

*KEMPERDUR® FC or KEMPERDUR® TC/ KEMPERDUR® EP-FR*

---

Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kemper-system.net
<table>
<thead>
<tr>
<th>Surfacings Selection Table for KEMPEROL® 2K-PUR</th>
<th>RECOMMENDED SURFACING SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMOOTH FLASHING COATING</td>
<td>KEMPERDUR® Deko Finish, 2KS-FR Finish or BSF-R Finish</td>
</tr>
<tr>
<td>AGGREGATE FINISH FLASHING COATING</td>
<td>KEMPERDUR® Deko Transparent/Cerama-quartz/ Finish</td>
</tr>
<tr>
<td>DECORATIVE COATING</td>
<td>KEMPERDUR® Deko Finish</td>
</tr>
<tr>
<td>SUBMERSIBLE COATING</td>
<td>KEMPERDUR® Deko Finish</td>
</tr>
<tr>
<td>ALKALINITY PROTECTION COATING</td>
<td>KEMPETEC® EP/EP5 Primer/ Surfacing Sand</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surfacings Selection Table for KEMPEROL® AC</th>
<th>RECOMMENDED SURFACING SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMOOTH ROOF COATING</td>
<td>KEMPERDUR® AC Finish Colored</td>
</tr>
<tr>
<td>AGGREGATE ROOF COATING</td>
<td>KEMPERDUR® AC Finish/Surfacing Sand/ AC Finish Colored</td>
</tr>
<tr>
<td>AGGREGATE FINISH ROOF COATING</td>
<td>KEMPERDUR® AC Finish/Ceramaquartz/AC Finish Transparent</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surfacings Selection Table for KEMPEROL® AC</th>
<th>RECOMMENDED SURFACING SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONCRETE BALCONY/TERRACE SURFACING Requirement: Color Aggregate</td>
<td>KEMPERDUR® AC Traffic Coating/Cerama-quartz/AC Finish Transparent</td>
</tr>
<tr>
<td>WOOD DECK BALCONY/TERRACE SURFACING Requirement: Color Aggregate</td>
<td>KEMPERDUR® AC Finish/Ceramaquartz/AC Finish Transparent</td>
</tr>
<tr>
<td>PARKING DECK SURFACING</td>
<td>KEMPERDUR® AC Traffic Coating/Surfacing Sand/AC Finish Colored</td>
</tr>
</tbody>
</table>

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.

Rev. 07/2015
KEMPERDUR® BSF-R FINISH

One-Component Colored Coating

Product Description

KEMPEROL® BSF-R Finish is a high performance, “odor-free” elastomeric colored coating that provides a UV-resistant, aesthetic finish for use in applications requiring a Class A fire rating and/or reflectivity.

Composition & Materials

KEMPERDUR® BSF-R Finish is a water-based, one-part, cold liquid-applied acrylic coating. BSF-R Finish is available in six highly reflective standard colors that are CRRC rated for reflectivity and emittance. Please refer to the Color Selection Guide for additional standard colors and information.

Use

KEMPERDUR® BSF-R Finish is used as a topcoat and an aggregate finish bonding and sealing resin over the 2K-PUR membrane. It can also be used as a coating to extend the life of a variety of existing standard roofing systems, such as asphalt BUR, modified bitumen, single-ply, slate/tile and others.

Limitations

KEMPERDUR® BSF-R Finish may be applied only when the ambient temperature is 35 ºF (2 ºC) or above, and the substrate temperature is a minimum of 5 ºF above the dew point.

DO NOT apply KEMPERDUR® BSF-R Finish if the temperature will fall below 35 ºF (2 ºC) or if precipitation is forecasted within 4 hours of completion of applications, as this will damage the product and require its removal and reapplication.

Yield

Membrane Coating: 100 ft²/gallon/coat
Aggregate Sealing/Coating: 80 ft²/gallon/coat

Note: All yields are approximate and may vary depending upon the smoothness of the surface.

Storage

Always store in cool and dry location. Do not store in direct sunlight or at temperatures below 45 ºF (7 ºC) or above 85 ºF (29 ºC). Approximate shelf life 12 months with proper storage. DO NOT ALLOW TO FREEZE.

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign materials such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the sealer.

Note: Prior to opening the containers of KEMPERDUR® BSF-R Finish, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves.

Mixing of Coating

Premix resin with a clean spiral agitator for two minutes until a uniform color and consistency is obtained.

Application

Roller-apply Kemperdur BSF-R coating over clean, cured membrane at the rate of approximately 100 ft²/gal. For larger area application 18” roller naps are recommended. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Following minimum 4 hour cure time, apply an additional coat of Kemperdur BSF-R coating. Two coats are required to obtain uniform and full coverage, eliminating roller marks. For extended performance a third coat is required.

To achieve an aggregated finish surfacing, broadcast Kemperol Surfacing sand or color quartz in excess into the bonding coat. Aggregate shall be applied at the rate of 50 lbs. / 100 ft². Obtain uniform and full coverage. Following minimum 4 hour cure time remove loose/un-embedded sand or color quartz by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean aggregate as required to provide full embedment and coverage of membrane.

Seal aggregate surface with a sealing coat application of Kemperdur BSF-R coating, applied at the rate of approximately 80 ft²/gal.

After completion, avoid any traffic for a minimum of two (2) days to allow for surfacing to fully cure.

---

**Coating Properties**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Varies</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to Solid</td>
</tr>
<tr>
<td>Thickness</td>
<td>11 mils (dry)</td>
</tr>
<tr>
<td>VOC Content</td>
<td>0 g/l</td>
</tr>
<tr>
<td>Usage time</td>
<td>24 hours**</td>
</tr>
<tr>
<td>Rainproof / Recoat after*</td>
<td>4 hours</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>4 hours</td>
</tr>
</tbody>
</table>

*values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

**skins over but remains usable.

---

**Sustainability Information**

<table>
<thead>
<tr>
<th>Classification</th>
<th>Production Line</th>
<th>Licensed Seller ID Number</th>
<th>0951</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Product ID Number</td>
<td>0951-0001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solar Reflectance</td>
<td>Initial 0.75</td>
<td>Weathered 0.66</td>
<td></td>
</tr>
<tr>
<td>Thermal Emittance</td>
<td>Initial 0.84</td>
<td>Weathered 0.88</td>
<td></td>
</tr>
</tbody>
</table>

Cool Roof Rating Council ratings are determined for a fixed set of conditions, and may not be appropriate for determining seasonal energy performance. The actual effect of solar reflectance and thermal emittance on building performance may vary.

Manufacturer of product stipulates that these ratings were determined in accordance with the applicable Cool Roof Rating Council procedures.


---

**Disposal**

KEMPERDUR® BSF-R Finish may be disposed of in standard landfills. This is accomplished by allowing unused sealer to cure in container. Note: Uncured KEMPERDUR® BSF-R Finish is considered a hazardous material and must be handled as such in accordance with local, state and federal regulations. Do not throw uncured resin away.

---

**Ordering Information**

KEMPERDUR® BSF-R Finish

<table>
<thead>
<tr>
<th>Item #:</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>347-AN-50</td>
<td>1 gallon can</td>
</tr>
<tr>
<td>347-AN-51</td>
<td>5 gallon can</td>
</tr>
</tbody>
</table>
KEMPERDUR® Deko 2KS-FR Finish

Heavy-duty roof coating

Product Description

KEMPERDUR® Deko 2KS-FR Finish is a high performance colored topcoat that provides a UV-resistant, aesthetic surfacing for use in applications requiring a Class A fire rating.

Composition & Materials

KEMPERDUR® Deko 2KS-FR is a solvent-based, two-component, cold liquid-applied aliphatic polyurethane coating. KEMPERDUR® Deko 2KS-FR Finish is available in six highly reflective standard colors that are CRRC rated for reflectivity and emittance. Please refer to the Color Selection Guide for additional standard colors and information.

Use

KEMPERDUR® Deko 2KS-FR Finish is used as a topcoat and an aggregate finish bonding and sealing resin over the 2K-PUR membrane. It can also be used as a coating to extend the life of a variety of existing standard roofing systems, such as asphalt BUR, modified bitumen, single-ply, slate/tile and others.

Limitations

KEMPERDUR® Deko 2KS-FR Finish may be applied only when the ambient temperature is 41 ºF (5 ºC) or above, and the substrate temperature is a minimum of 5 ºF above the dew point.

Yield

Membrane Coating: 100 ft²/gallon/coat
Aggregate Sealing/Coating: 80 ft²/gallon/coat

Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 ºF (2 ºC) or above 80 ºF (27 ºC). Approximate shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the coating.

Mixing of Coating

Note: Prior to opening the containers of KEMPERDUR® Deko 2KS-FR Finish, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves. Agitate coating in sealed container prior to use.

Step 1: Premix Component B thoroughly with a spiral agitator. Resin solution should be a uniform color, with no light or dark streaks present.

Step 2: Pour entire contents of Mixed Component B into a clean empty five gallon pail and check the B side container for unmixed pigment. If unmixed pigment is present pour contents back and re-mix Component B.

Step 3: If unmixed pigment is not present split the Component B into two equal parts, using the new pail and the original container.

Step 4: Pour resin Component A equally into each pail of Component B and thoroughly mix the components with a clean spiral agitator. The Resin solution should be a uniform color, with no light or dark streaks present.
KEMPERDUR® Deko 2KS-FR Finish Workpack:

**Item #:** 347-AN-3145

**Size:**
- Part A - 1 Gal.
- Part B - 1 Gal.

**Size:** 2.0 US Gallons

**Item #:** 347-AN-3146

**Size:**
- Part A - 5 Gal.
- Part B - 5 Gal.

**Size:** 10.0 US Gallons

---

**Application**

Roller-apply KEMPERDUR® Deko 2KS-FR coating over clean, cured membrane at the rate of approximately 100 ft²/gal. For larger area application 18” roller naps are recommended. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

Following minimum 12 hour cure time for, apply an additional coat at the rate of approximately 100 ft²/gal. Two coats are highly recommended to obtain uniform and full coverage, eliminating roller marks. For extended performance a third coat is required.

After completion of coating, avoid any traffic for a minimum of two (2) days.

To achieve an aggregated finish surfacing, broadcast KEMPEROL Surfacing sand in excess into the bonding coat. Aggregate shall be applied at the rate of 50 lbs. / 100 ft². Obtain uniform and full coverage. Following minimum 12 hour cure time remove loose/un-embedded sand by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean aggregate as required to provide full embedment and coverage of membrane.

Seal aggregate surface with a sealing coat of coating, applied at the rate of approximately 80 ft²/gal.

---

**Disposal**

Cured KEMPERDUR® Deko 2KS-FR Finish may be disposed of in standard landfills. This is accomplished by allowing unused product to cure in container. Note: Uncured KEMPERDUR® Deko 2KS-FR Finish is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured product away.

---

**Ordering Information**

**KEMPERDUR® Deko 2KS-FR Finish Workpack:**

**Item #:** 347-AN-3145

**Size:**
- Part A - 1 Gal.
- Part B - 1 Gal.

**Size:** 2.0 US Gallons

**Item #:** 347-AN-3146

**Size:**
- Part A - 5 Gal.
- Part B - 5 Gal.

**Size:** 10.0 US Gallons

---

**Coating Properties**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>White</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>Thickness, per coat</td>
<td>10 mils (dry)</td>
</tr>
<tr>
<td>VOC Content</td>
<td>330 g/l</td>
</tr>
<tr>
<td>Usage time*</td>
<td>12 hours</td>
</tr>
<tr>
<td>Rainproof/Recoat after*</td>
<td>4 hours</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>12 hours</td>
</tr>
</tbody>
</table>

*values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

---

**Sustainability Information**

| Rapidly Renewable Resource   | 0%                      |
| Recycled Content % (post / pre) | 0 / 0                  |
| Manufacture Location         | Bristol, PA, USA       |

---

**Certifications**

- **Initial SRI:** 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **Cool Roof Rating Council**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
- **凉凉屋顶评级委员会**
  - Initial SRI: 104 / weathered: 100. Refer to Color Selection Guide or www.coolroofs.org for information on other colors.
# KEMPERDUR® Deko Finish

## Two-Component Colored Coating

### Product Description

KEMPERDUR® Deko Finish is a high performance colored coating that provides a resilient, glossy, UV-resistant, decorative, aesthetic surfacing.

### Composition & Materials

KEMPERDUR® Deko Finish is a solvent-based, cold liquid-applied aliphatic polyurethane coating with separate color pack.

### Use

KEMPERDUR® Deko Finish is used as a colored coating over KEMPEROL® 2K-PUR cold liquid-applied membrane system, as a topcoat over KEMPERDUR® TC Traffic Coating and as a coating over concrete and other substrates. Please refer to the Color Selection Guide for standard colors and information.

### Limitations

KEMPERDUR® Deko Finish may be applied only when the ambient temperature is 41 °F (5 °C) or rising, and the substrate temperature is a minimum of 5 degrees above the dew point.

### Yield

<table>
<thead>
<tr>
<th>Coating Type</th>
<th>Yield (gallons/coat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Membrane Coating</td>
<td>100 ft²/gallon/coat</td>
</tr>
<tr>
<td>Aggregate Sealing/Coating</td>
<td>80 ft²/gallon/coat</td>
</tr>
</tbody>
</table>

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

### Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 45 °F (7 °C) or above 80 °F (27 °C). Approximate shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

### Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

### Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the coating.

*Note: Prior to opening the containers of KEMPERDUR® Deko Finish, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves. Agitate coating in sealed container prior to use.*

### Mixing of Coating

**Step 1:** Premix Component A thoroughly with a spiral agitator on slow speed or stir stick.

**Step 2:** Add Component B (color pack) to Component A and thoroughly mix for two (2) minutes with a clean spiral agitator on slow speed or stir stick without creating any bubbles or streaks. During application continue to periodically mix the coating to avoid separation of resin and pigment.

### Application

Roller-apply KEMPERDUR® Deko Finish coating over clean, cured membrane at the rate of approximately 100 ft²/gal. For larger area application 18” roller naps are recommended. Do not press hard when using a roller as that will contribute to roller marks.

---

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

Following minimum 12 hour cure time, apply an additional coat of Deko Finish coating. Two coats are required to obtain uniform and full coverage, eliminating roller marks.

Cured KEMPERDUR® Deko Finish may be disposed of in standard landfills. This is accomplished by allowing unused product to cure in container. Note: Uncured KEMPERDUR® Deko Finish is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured product away.

**Disposal**

**Ordering Information**

<table>
<thead>
<tr>
<th>Sustainability Information</th>
<th>Coating Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapidly Renewable Resource</td>
<td>Physical Property</td>
</tr>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>Values</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Color</td>
</tr>
<tr>
<td></td>
<td>Physical state</td>
</tr>
<tr>
<td></td>
<td>Thickness</td>
</tr>
<tr>
<td></td>
<td>VOC Content</td>
</tr>
<tr>
<td></td>
<td>Usage time*</td>
</tr>
<tr>
<td></td>
<td>Water resistant after*</td>
</tr>
<tr>
<td></td>
<td>Solid to walk on after*</td>
</tr>
<tr>
<td></td>
<td>Full cure after*</td>
</tr>
</tbody>
</table>

*values obtained at 73°F 50% relative humidity; may vary depending upon air flow, humidity and temperature.

KEMPERDUR® Deko Finish:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>347-AN-3143</td>
<td>1.0 US gal (Part A - .75 gal. /Part B - .25 gal)</td>
</tr>
<tr>
<td>347-AN-3144</td>
<td>5.0 US gal (Part A - 3.75 gal. /Part B - 1.25 gal)</td>
</tr>
</tbody>
</table>

**Physical Property**

- **Color**: Per color pack
- **Physical state**: Cures to solid
- **Thickness**: 7 mils (dry) per coat
- **VOC Content**: 295/gl
- **Usage time***: 12 hours
- **Water resistant after***: 2 hours
- **Solid to walk on after***: 12 hours
- **Full cure after***: 24 hours

**Rapidly Renewable Resource**: 0%

**Recycled Content % (post / pre)**: 0 / 0

**Manufacture Location**: Bristol, PA, USA

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
KEMPERDUR® TC Traffic Coating

Work pack includes:
Component A: White Formulation, Component B: Dark Brown Formulation, Component C: Mineral Filler

Product Description

KEMPERDUR® TC Traffic Coating is a high performance, “odor-free”, self-levelling, mineral-filled pedestrian and vehicular traffic coating for use with Surfacing Sand or Ceramaquartz aggregate to provide a heavy-duty traction-enhanced surfacing. Concrete Substrate applications ONLY.

Composition & Materials

KEMPERDUR® TC Traffic Coating is a solvent-free, three component, cold-liquid applied aromatic polyurethane coating consisting of Component A, the resin, Component B, the hardener, and Component C, the mineral filler.

Use

KEMPERDUR® TC Traffic Coating is used as a heavy-duty coating for balconies, terraces, parking decks, walkways, and other traffic locations. The system may be used in conjunction with a fully reinforced KEMPEROL® cold liquid-applied 2K-PUR waterproofing membrane or directly to a primed concrete substrates where a full reinforced waterproofing membrane is not required. Applications over unoccupied spaces may utilize the KEMPEROL® waterproofing flashing membrane at perimeter and penetration only.

Concrete surfaces to receive the TC Traffic Coating system must be properly designed and constructed in order to assure effective coating performance. Determine whether the concrete contains sufficient expansion/cold-joints.

Limitations

KEMPERDUR® TC Traffic Coating may be applied only when the ambient temperature is 41 ºF (5 ºC) to 90 ºF (32 ºC), and the substrate temperature is a minimum of 5 degrees above the dew point.

KEMPERDUR® TC Traffic Coating is intended for application on horizontal surfaces and inclines of up to 3%. A TX Thixotropic additive must be used on inclines from 3-20%.

Yield

40 ft² (3.7 m²) / 12.5 kg work pack

Note: All yields are approximate and may vary depending upon smoothness of substrate.

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 40 ºF (5 ºC) or above 80 ºF (27 ºC). Approximate shelf life 12 months in sealed original containers.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 ºF (18-21 ºC).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and surfacing.

Remove or grind down all fasteners, anchors, studs, or other protrusions to achieve a smooth surface.

When applying directly to the concrete substrate, the surface must be prepared in accordance with the current application procedures. All cracks, holes, spalls, and other surface defects must be sealed/repaired prior to the coating application. Review the current Substrate Repair and Patching Materials as well as the EP/EP5 primer slurry patching procedures.
Once the substrate is prepared, primed, and all cracks are stripped in with KEMPEROL® 2K-PUR reinforced membrane, the KEMPERDUR® TC application may commence.

When applying directly to KEMPEROL® 2K-PUR reinforced membrane, TC traffic coating must be applied within a 48 hour window. If that is not possible due to the logistics of the projects the surface of the membrane must be lightly abraded to receive the coating system. KEMPEROL® 2K-PUR membrane must not be primed prior to the application of the coating.

Note: Prior to opening the containers of KEMPERDUR® TC Traffic Coating, wear appropriate safety glasses and protect hands and wrists by wearing gloves. Agitate coating in sealed container prior to use.

**Step 1:** Pre-mix Component A (white formulation) with a spiral Kemperol agitator for 1 minute, until the liquid is a uniform color and all solids that may have settled to the bottom of the can have been mixed. When working on a sloped area, from 3-20%, such as a ramps, add approximately 90 g of Kempertec TX Thixotropic additive to Component A before adding Component B.

**Step 2:** Pour Component A (white formulation) into a separate clean mixing pail, add Component B (dark brown formulation) and mix with a spiral agitator for 1 minute, until the liquid is a uniform dark beige color without light or dark streaks.

**Step 3:** Gradually add Component C (white mineral filler) to the liquid while mixing continuously for an additional 1 minute until a smooth, lump-free mixture is produced.

**NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.**

Note: If the concrete substrate does not contain adequate cold joints, additional joints must be created in the TC Traffic Coating system, at minimum every 20’. Contact manufacturer for the cold joint application process.

**Step 1:** Empty the pail of KEMPERDUR® TC Traffic Coating mixture onto the primed concrete surface or over fully cured membrane and spread with a ¼” x ¼” x ¼” square-notched steel trowel at the rate of approximately 40 ft²/12.5 kg unit. If applying over cured membrane follow membrane re-coating guidelines.

**Step 1a:** When applying the Kemperdur TC traffic coating on an incline with the TX Thixotropic additive ensure that the coating does not run down the slope. If the coating shows signs of sag add additional additive.

**Step 1b:** Due to the TX Thixotropic additive the coating will no longer self-level. Use the flat side of the trowel to level out the coating on sloped surfaces.

**Step 2:** Immediately de-aerate the coating in a cross direction with a porcupine (spiked) roller in order to release the air bubbles that may develop within the coating.

**Step 3:** Allow the Kemperdur TC Traffic Coating mix to self-level and reach an initial set for 10-20 minutes, depending on ambient and surface temperatures, until material will retain a peak after being touched by a finger.

**Step 4:** Broadcast selected aggregate to excess into TC Traffic Coating until a uniform dry aggregate layer has been achieved. Aggregate will initially sink into surfacing, requiring the application of additional aggregate. Sufficient aggregate application is achieved when there are no wet spots remaining. Aggregate application rate is typically 100 lbs./100 ft².

- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S-Grade blend) for aesthetic color quartz finished surfacing.

**Step 5:** Allow the aggregate-filled Kemperdur TC Traffic Coating to cure for approximately 4 hours. Times may vary depending on temperatures. Remove excess aggregate by brooming and vacuuming.
**Step 6:** Roller-apply appropriate sealer or finish evenly onto the surface. Ensure to lap each preceding path to erase squeeze out from the edge of roller. If necessary, a second coat may be applied.

- KEMPERDUR EP-FR FINISH at the rate of approximately 80 ft²/6 kg.
- KEMPERDUR DEKO FINISH at the rate of approximately 80 ft²/6 kg.
- KEMPERDUR FINISH at the rate of approximately 360 ft²/10 kg.

Cured KEMPERDUR® TC Traffic Coating may be disposed of in standard landfills. This is accomplished by thoroughly mixing all surfacing components together. Note: Uncured KEMPERDUR® TC Traffic Coating resin and hardener, primer components, and sealer are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw away uncured resin, hardener, primer or sealer.

**KEMPERDUR® TC Traffic Coating:**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>325-77-125</td>
<td>12.5 kg Work pack (Components A, B and C)</td>
</tr>
</tbody>
</table>
KEMPERDUR® EP-FR Finish

Two component workpack includes:
Component A: Base Resin, Component B: Hardener

Product Description

KEMPERDUR® EP-FR Finish is a high performance, solvent-free, impact, abrasion and chemically-resistant, glossy stone gray finish topcoat, providing a Class A fire rating. Concrete Substrate applications ONLY.

Composition & Materials

KEMPERDUR® EP-FR Finish is a two-component, solvent-free, cold liquid-applied epoxy coating. Standard color is stone gray.

Use

KEMPERDUR® EP-FR Finish can be used as a coating in mechanical rooms, parking decks, and other areas where a chemically resilient class A fire rated coating is required. The coating may be applied directly over a primed concrete substrate, over KEMPEROL 2K-PUR reinforced waterproofing membrane and as a topcoat surface sealer for the KEMPERDUR® TC traffic coating system.

Limitations

KEMPERDUR® EP-FR Finish may be applied only when the ambient temperature is 50 °F (10 °C) and rising, and the substrate temperature is a minimum of 5 °F above the dew point. **Minor yellowing may occur in UV exposure.**

Yield

<table>
<thead>
<tr>
<th>Membrane Coating:</th>
<th>120 ft²/6kg work pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate Sealing/Coating:</td>
<td>80 ft²/6kg work pack</td>
</tr>
</tbody>
</table>

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the coating.

Mixing of Coating

*Note: Prior to opening the containers of KEMPERDUR® EP-FR Finish, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves. Agitate coating in sealed container prior to use.*

**Step 1:** Premix resin Component A thoroughly with a spiral agitator or stir stick. Resin solution should be a uniform color, with no light or dark streaks present.

**Step 2:** Pour Component B into Component A thoroughly mix the components with a clean spiral agitator. The Resin solution should be a uniform color, with no light or dark streaks present.

**NOTE: DO NOT break down units into smaller quantities – mix the entire work pack.**

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
**Application**

Roller-apply Kemperdur EP-FR Finish at the rate of approximately 120 ft²/6 kg unit evenly onto the clean, cured membrane or at the rate of approximately 80 ft²/6 kg directly over an aggregate surface. Do not press hard when using a roller as that will contribute to roller marks. Ensure to lap each preceding path to erase squeeze out from the edge of roller. Always maintain a wet edge. Care must be taken to avoid creating foam or trapping air which may result in pinholes or hazing.

When applying directly to the membrane, broadcast Kemperol Surfacing Sand into the wet EP-FR resin at the rate of 50 lbs./100 ft². Obtain uniform and full coverage.

Following minimum 24 hour cure time remove loose/unembedded sand by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean aggregate as required to provide full embedment and coverage of membrane.

Seal aggregate surface with a sealing coat application Kemperdur EP-FR Finish, applied at the rate of approximately 80 ft²/6 kg. Ensure to lap each preceding path to erase squeeze out from the edge of roller. If necessary, a second coat may be applied after 6 hours.

After completion, avoid any traffic for a minimum of two (2) days to allow for surfacing to fully cure.

**Disposal**

Cured KEMPERDUR® EP-FR Finish may be disposed of in standard landfills. This is accomplished by allowing unused product to cure in container. Note: Uncured KEMPERDUR® EP-FR Finish is considered a hazardous material and must be handled as such, in accordance with local, state, and federal regulations. Do not throw uncured product away.

**Ordering Information**

KEMPERDUR® EP-FR Finish Work pack:
- Item #: 531-78-055
- Size: 1.20 US GAL (4.54 L) • 6.0 kg

---

**Coating Properties**

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Stone Gray</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>VOC Content</td>
<td>10 g/l</td>
</tr>
<tr>
<td>Thickness</td>
<td>10 mils per coat</td>
</tr>
<tr>
<td>Usage time</td>
<td>25 minutes</td>
</tr>
<tr>
<td>Water resistant after*</td>
<td>6 hours</td>
</tr>
<tr>
<td>Recoat after*</td>
<td>6 hours</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>24 hours</td>
</tr>
<tr>
<td>Solid to drive on after*</td>
<td>48 hours</td>
</tr>
</tbody>
</table>

*values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

---

**Sustainability Information**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapidly Renewable Resource</td>
<td>0%</td>
</tr>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Germany</td>
</tr>
</tbody>
</table>

---

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
# KEMPERDUR® Deko Transparent

**One-Component Coating for use with Ceramaquartz Aggregate**

<table>
<thead>
<tr>
<th>Product Description</th>
<th><strong>KEMPERDUR® Deko Transparent</strong> is a high performance topcoat bonding/sealing agent for use with Ceramaquartz aggregate to provide a traction-enhanced aesthetic surfacing.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition &amp; Materials</td>
<td><strong>KEMPERDUR® Deko Transparent</strong> is a solvent-based, 1-part, cold-applied liquid aliphatic polyurethane coating.</td>
</tr>
<tr>
<td>Use</td>
<td><strong>KEMPERDUR® Deko Transparent</strong> is used as both an initial bonding agent over unsurfaced KEMPEROL® cold fluid-applied polyurethane membrane systems, and as a sealing agent over cured quartz or ceramic granules embedded in the initial bonding coat.</td>
</tr>
<tr>
<td>Limitations</td>
<td><strong>KEMPERDUR® Deko Transparent</strong> may be applied only when the ambient temperature is 41 °F (5 °C) or rising, and the substrate temperature is a minimum of 5 degrees above the dew point.</td>
</tr>
</tbody>
</table>
| Yield | Membrane Coating: 130 ft²/5kg work pack  
Aggregate Sealing: 130 ft²/5kg work pack (with 1K Thinner)  
**Note:** All yields are approximate and may vary depending upon smoothness and absorbency of substrate. |
| Storage | Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approximate shelf life 9 months with proper storage.  
For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C). |
| Precautions | **Review Safety Data Sheets before handling, available online at kempersystem.net.** |
| Surface Preparation | All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the sealer. |
| Mixing of Sealer | **Note:** Prior to opening the containers of **KEMPERDUR® Deko Transparent**, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves. Agitate coating in sealed container prior to use.  
Premix **KEMPERDUR® Deko Transparent** in a sealed container with a spiral agitator on slow speed or stir stick. Do not introduce air into the material. |
| Application | **Step 1:** Apply **KEMPERDUR® Deko Transparent** bonding coat to the fully cured membrane at a rate of approximately 130 ft²/6 kg workpack. The material should be rolled or brushed evenly onto the surface.  
**Step 2:** Immediately broadcast Ceramaquartz aggregate in excess into the bonding coat at the approximately rate of 60 lbs./100 ft². Allow to dry thoroughly, approximately 24 hours, then remove excess granules.  
**Step 3:** Apply **KEMPERDUR® Deko Transparent** mixed with 250 ml of **KEMPERTEC® 1K Thinner** at a rate of approximately 130 ft²/6 kg workpack or **KEMPERDUR® Finish** at a rate of approximately 360 ft²/10 kg workpack as a sealing coat. Allow to cure approximately 24 hours before walking on surface. |

---

Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224  
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Disposal

Cured KEMPERDUR® Deko Transparent may be disposed of in standard landfills. This is accomplished by allowing unused product to cure in container. Note: Uncured KEMPERDUR® Deko Transparent is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured product away.

Ordering Information

KEMPERDUR® Deko Transparent:
Item #: 347-00-050
Size: 5 kg units (1.22 gal) unit

---

Sustainability Information

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapidly Renewable Resource</td>
<td>0%</td>
</tr>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Germany</td>
</tr>
</tbody>
</table>

Sealer Properties

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Clear</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>Thickness</td>
<td>10 mils (dry) per coat</td>
</tr>
<tr>
<td>VOC Content</td>
<td>274 g/l</td>
</tr>
<tr>
<td>Usage time*</td>
<td>N/A**</td>
</tr>
<tr>
<td>Water resistant after*</td>
<td>3 hours</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>24 hours</td>
</tr>
<tr>
<td>Full cure after*</td>
<td>3 days</td>
</tr>
</tbody>
</table>

* values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.
** skins over but remains usable.
# KEMPERDUR® Finish Glossy

**One Component Sealer**

## Product Description

**KEMPERDUR® Finish Glossy** is a high performance, light-stable, transparent, sealer for Ceramaquartz aggregate.

## Composition & Materials

KEMPERDUR® Finish Glossy is a solvent based 1-part, cold liquid-applied aliphatic polyurethane coating.

## Use

**KEMPERDUR® Finish Glossy** is used as a Ceramaquartz aggregate sealer for KEMPERDUR® TC or KEMPERDUR® Deko Transparent traffic coating systems.

## Limitations

Sealer may be applied only when the ambient temperature is 50 °F (10 °C) or rising, and the substrate temperature is a minimum of 5° above the dew point.

## Yield

Aggregate Sealing: 360 ft²/10 kg work pack

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

## Storage

Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35 °F (1.7 °C) or above 80 °F (27 °C). Approx. shelf life 12 months with proper storage.

For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70 °F (18-21 °C).

## Precautions

Review Safety Data Sheets before handling, available online at kempersystem.net.

## Surface Preparation

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the sealer.

## Mixing of Sealer

*Note: Prior to opening the containers of KEMPERDUR® Finish Glossy, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves. Agitate coating in sealed container prior to use.*

Agitate sealer in sealed container prior to use.

## Application

Apply sealer at a rate of approximately 360 ft²/ 10 kg over aggregate. The sealer should be rolled or brushed evenly onto the surface. Allow to set approximately 12 hours before walking on surface and 3 days between applying optional additional coats of sealer.

## Disposal

Cured KEMPERDUR® Finish Glossy may be disposed of in standard landfills. This is accomplished by allowing unused sealer to cure in container. Note: Uncured KEMPERDUR® Finish Glossy is considered a hazardous material and must be handled as such in accordance with local, state and federal regulations. Do not throw uncured resin away.

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
KEMPERDUR® Finish Glossy:
Item #: 546-00-100
Size: 2.9 gallon can (11L) 10 kg

<table>
<thead>
<tr>
<th>Sustainability Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapidly Renewable Resource</td>
</tr>
<tr>
<td>Recycled Content % (post / pre)</td>
</tr>
<tr>
<td>Manufacture Location</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Transparent</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to Solid</td>
</tr>
<tr>
<td>Thickness</td>
<td>3-5 mils (dry)</td>
</tr>
<tr>
<td>VOC Content</td>
<td>623 g/l</td>
</tr>
<tr>
<td>Usage time*</td>
<td>-</td>
</tr>
<tr>
<td>Water resistant after*</td>
<td>3 hours</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>12 hours</td>
</tr>
<tr>
<td>Apply coating/surfacing after**</td>
<td>3 days</td>
</tr>
</tbody>
</table>

* values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.
**KEMPERDUR® FGC Façade and Glass Coating**

One-Component Transparent Coating

<table>
<thead>
<tr>
<th>Product Description</th>
<th>KEMPERDUR® FGC is a one component, UV-stable, high performance, clear, cold liquid-applied waterproofing coating for glass skylights.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composition &amp; Materials</td>
<td>KEMPERDUR® FGC is a 1-part, cold applied liquid aliphatic polyurethane coating.</td>
</tr>
<tr>
<td>Use</td>
<td>KEMPERDUR® FGC is used as a glass and skylight coating with a reinforcing fabric for cracks and transitions.</td>
</tr>
<tr>
<td>Limitations</td>
<td>KEMPERDUR® FGC may be applied when the ambient temperature is 41°F and rising, and the substrate temperature is a minimum of 5°F above due point. The maximum application temperature is approximately 90 °F. A permanent preservation of KEMPERDUR® FGC requires a regular maintenance cleaning, which can be accomplished by normal wiping with neutral cleaners. Solvent and chloride containing products, as well as abrasive cleaners are not suitable for KEMPERDUR® FGC.</td>
</tr>
</tbody>
</table>
| Yield | 65 ft² / 5 kg work pack to achieve minimum finished coating thickness  
*Note: All yields are approximate and may vary depending upon smoothness of substrate.* |
| Storage | Always store in cool and dry location. Do not store in direct sunlight or in a temperature below 35°F (1.7°C) or above 80°F (27°C). Approximate shelf life 9 months with proper storage. |
| Precautions | Review Safety Data Sheets before handling, available online at kempersystem.net. |
| Surface Preparation | All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and membrane. Cleaning and grinding of metal frames to near-white metal. Sanding of glass surfaces to remove hard gloss surface. No mechanical preparation of acrylic and polycarbonate panels normally required.  
The skylights should be pressure washed or hand washed with a citrus-based cleaner, then a thorough rinse so that the panels are “squeaky clean” and dry.  
Fill the gaps in the skylight frame as required with ASTM C-920 Type S, Grade NS, Class 25 polyurethane sealant to fill gaps in the skylight frame. |
| Priming | After substrate preparation, use KEMPEROL® D or R Primer on metal frames. No primer required on glass, acrylic and polycarbonate panels. |
| Mixing of Resin | *Note: Prior to opening the containers of KEMPERDUR® FGC Resin, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves.*  
Mix the resin with a spiral KEMPEROL® agitator prior to use. Do not introduce air into the material. |

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224  
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
After the Resin is mixed, apply embedded layer of coating at the rate of 360 sq. ft. per 5 kg unit to substrate surface. Then presaturate KEMPEROL® 500 Fleece with the Resin and apply into wet resin, avoiding any folds and wrinkles. Use the roller or a brush to work out any air pockets from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these faults before the resin cures. Total resin usage is 65 sq. ft. per 5kg unit.

Apply coating over all reinforcing fabrics and skylight panel surfaces. Full dry film coating thickness is 20 mils, requiring 67 sq. ft. per 5 kg(1.26 gal) unit. Adjust coating application rate such that the coating does not run down the skylight surface. Depending on slope of the skylight surface, multiple application coats will be required, with typical application rates as follows:

- **Horizontal Surface:** 2 coats applied at the rate of 130 sq. ft. per 5kg unit
- **45° Surface:** 3 coats applied at the rate of 195 sq. ft. per 5kg unit
- **Vertical Surface:** 4 coats applied at the rate of 260 sq. ft. per 5kg unit

Cured KEMPERDUR® FGC resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured Kempedur® FGC resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

### Coating Properties

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Transparent</td>
</tr>
<tr>
<td>Physical state</td>
<td>Cures to solid</td>
</tr>
<tr>
<td>Nominal Thickness (500 fleece)</td>
<td>20 mils</td>
</tr>
<tr>
<td>VOC Content</td>
<td>302 g/l</td>
</tr>
<tr>
<td>Rainproof after*</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Usage time*</td>
<td>2-6 hours</td>
</tr>
<tr>
<td>Solid to walk on after*</td>
<td>12 hours</td>
</tr>
<tr>
<td>Completely hardened</td>
<td>3 days</td>
</tr>
</tbody>
</table>

*values obtained at 73°F 50% relative humidity, may vary depending upon air flow, humidity and temperature.

### Application (Coating with 500 Fleece)

After the Resin is mixed, apply embedded layer of coating at the rate of 360 sq. ft. per 5 kg unit to substrate surface. Then presaturate KEMPEROL® 500 Fleece with the Resin and apply into wet resin, avoiding any folds and wrinkles. Use the roller or a brush to work out any air pockets from the bottom up. White spots are indications of unsaturated fleece or lack of adhesion. It is important to correct these faults before the resin cures. Total resin usage is 65 sq. ft. per 5kg unit.

### Application (Coating only)

Apply coating over all reinforcing fabrics and skylight panel surfaces. Full dry film coating thickness is 20 mils, requiring 67 sq. ft. per 5 kg(1.26 gal) unit. Adjust coating application rate such that the coating does not run down the skylight surface. Depending on slope of the skylight surface, multiple application coats will be required, with typical application rates as follows:

- **Horizontal Surface:** 2 coats applied at the rate of 130 sq. ft. per 5kg unit
- **45° Surface:** 3 coats applied at the rate of 195 sq. ft. per 5kg unit
- **Vertical Surface:** 4 coats applied at the rate of 260 sq. ft. per 5kg unit

Cured KEMPERDUR® FGC resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured Kempedur® FGC resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

### Ordering Information

KEMPERDUR® FGC Coating

- **Item #:**
  - Liquid Component - 332-00-050
  - 500 Fleece - 112-11-501

- **Size:**
  - 1.26 gal (US) • 5 kg
  - 41” fleece

### Sustainability Information

<table>
<thead>
<tr>
<th>Rapidly Renewable Resource</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycled Content % (post / pre)</td>
<td>0 / 0</td>
</tr>
<tr>
<td>Manufacture Location</td>
<td>Germany</td>
</tr>
</tbody>
</table>

**DISCLAIMER:** NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
### KEMPERDUR® AC Traffic Coating

**Product Description**

**Component A:** AC Resin, **Component B:** Catalyst Powder, **Component C:** Mineral Filler

**KEMPERDUR® AC Traffic Coating** is a high performance, quick-curing, self-levelling, mineral-filled pedestrian and vehicular traffic coating for use with Surfacing Sand or Ceramaquartz aggregate to provide a heavy-duty traction-enhanced surfacing. Concrete Substrate applications ONLY.

**Composition & Materials**

**KEMPERDUR® AC Traffic Coating** is a three component, cold liquid-applied Polymethyl Methacrylate coating (PMMA), consisting of a Component A, AC resin, Component B, the catalyst powder, and Component C, the mineral filler.

**Use**

**KEMPERDUR® AC Traffic Coating** is used as a heavy-duty coating for balconies, terraces, parking decks, walkways, and other traffic locations. The system may be used in conjunction with a fully reinforced KEMPEROL® cold liquid-applied AC waterproofing membrane or directly to a primed concrete substrates where a full reinforced waterproofing membrane is not required. Applications over unoccupied spaces may utilize the KEMPEROL® waterproofing flashing membrane at perimeter and penetration only.

Concrete surfaces to receive the AC Traffic Coating system must be properly designed and constructed in order to assure effective coating performance. Determine whether the concrete contains sufficient expansion/cold-joints.

**Limitations**

Kemperol AC Traffic Coating may be applied when the ambient temperature is between 23°F (-5°C) and a maximum of 95°F (35°C). The substrate temperature must be a minimum of 5 degrees above the dew point. Note: Extra caution should be taken in below freezing temperatures. The viscosity increases with falling temperature. Provide and maintain positive airflow over freshly applied KEMPEROL® AC materials during entire curing period to facilitate complete cure. Natural airflow is typically sufficient for exterior applications, but locations such as beneath large mechanical units, at inside corners, at the base of high walls, and other similar areas where stagnant air may occur should be provided with powered fans.

**Yield**

100 ft² (9.2 m²) / 33 kg work pack

*Note: All yields are approximate and may vary depending upon smoothness and absorbency of substrate.*

**Storage**

Always store in cool and dry location. Do not store in direct sunlight or in a temperature below 35°F (1.7°C) or above 80°F (27°C). Approximate shelf life 18 months with proper storage. For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70°F (18-21 °C).

**Precautions**

**Review Safety Data Sheets before handling, available online at kempersystem.net.**

**Surface Preparation**

All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the primer and surfacing.

---

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224

Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net
Must be sealed/repaired prior to the coating application. Review the current Substrate Repair and Patching Materials as well as the EP/EP5 primer slurry patching procedures.

Once the substrate is prepared, primed, and all cracks are stripped in with KEMPEROL® AC reinforced membrane, the KEMPERDUR® AC application may commence.

When applying directly to the concrete substrate, the surface must be prepared in accordance with the current application procedures.

All cracks, holes, spalls, and other surface defects must be sealed/repaired prior to the coating application. Review the current Substrate Repair and Patching Materials as well as the EP/EP5 primer slurry patching procedures.

Once the substrate is prepared, primed, and all cracks are stripped in with KEMPEROL® AC reinforced membrane, the KEMPERDUR® AC application may commence.

When applying directly to KEMPEROL® AC reinforced membrane, AC traffic coating must be applied within a 48 hour window. If that is not possible due to the logistics of the projects the surface of the membrane must be lightly abraded to receive the coating system. KEMPEROL® AC membrane must not be primed prior to the application of the coating.

Note: Prior to opening the containers of KEMPERDUR® AC Traffic Coating, wear appropriate safety glasses and protect hands and wrists by wearing gloves. Agitate coating in sealed container prior to use.

**Step 1:** Mix resin Component A with a spiral KEMPEROL® agitator or stir stick, until the liquid is a uniform color, with no light or dark streaks present. For applications on ramps and other sloped surfaces only, KEMPEROL® TX Thixotropic additive shall be added to directly into Component A and mixed in. The amount of Thixotropic additive is to be adjusted based on percent of the incline (see table).

<table>
<thead>
<tr>
<th>Incline Slope</th>
<th>TX Thixotropic Quantity to Add to Comp A</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 5%</td>
<td>10 g</td>
</tr>
<tr>
<td>5 - 7%</td>
<td>20 g</td>
</tr>
<tr>
<td>7 - 10%</td>
<td>30 g</td>
</tr>
<tr>
<td>11 - 20%</td>
<td>60 g</td>
</tr>
</tbody>
</table>

**Step 2:** Add the Catalyst Powder, Component B, to resin Component A and mix with the same agitator for 1 minutes. The amount of Catalyst Powder must be adjusted according to the temperature (see table).

For 10 kg resin/23 kg mineral filler workpaks, the following catalyst quantities are recommended:

**Catalyst Powder Requirements**

<table>
<thead>
<tr>
<th>Material Temperature °F</th>
<th>Kemperol Catalyst Powder (100g/bag)</th>
<th>Pot Life (min)</th>
<th>Completely Cured</th>
</tr>
</thead>
<tbody>
<tr>
<td>23°F - 35°F</td>
<td>4 bags</td>
<td>45</td>
<td>90</td>
</tr>
<tr>
<td>35°F - 50°F</td>
<td>4 bags</td>
<td>30</td>
<td>60</td>
</tr>
<tr>
<td>50°F - 70°F</td>
<td>3 bags</td>
<td>20</td>
<td>35</td>
</tr>
<tr>
<td>70°F - 85°F</td>
<td>2 bags</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>&gt;85°F</td>
<td>1 bag</td>
<td>10</td>
<td>20</td>
</tr>
</tbody>
</table>

**Step 3:** Transfer the catalyzed mixture in to a large clean separate pail and gradually add Component C (23 kg filler) to the liquid while mixing continuously with a spiral agitator for an additional 1 minute until a smooth, lump free mix is produced.

**NOTE:** Kemperdur AC traffic coating is extremely fast curing. Excessive mixing time reduces the available working time for the primer. DO NOT break down units into smaller quantities – mix the entire work pack.

Note: If the concrete substrate does not contain adequate cold joints, additional joints must be created in the AC Traffic Coating system, at minimum every 20’. Contact manufacturer for the cold joint application process.
**Surfacing Application**

**Step 1:** Empty the pail of KEMPERDUR® AC Traffic Coating mixture onto the primed concrete surface or over fully cured membrane and spread with a ¼” x ¼” x ¼” square-notched steel trowel at the rate of approximately 100 ft²/33 kg unit. If applying over cured membrane follow membrane re-coating guidelines.

**Step 1a:** When applying the Kemperdur AC traffic coating on an incline with the TX Thixotropic additive ensure that the coating does not run down the slope. If the coating shows signs of sag add additional additive.

**Step 1b:** Due to the TX Thixotropic additive the coating will no longer self level. Use the flat side of the trowel to level out the coating on sloped surfaces.

**Step 2:** Immediately de-aerate the coating in a cross direction with a porcupine (spiked) roller in order to release the air bubbles that may develop within the coating.

**Step 4:** Broadcast selected aggregate to excess into AC Traffic Coating until a uniform dry aggregate layer has been achieved. Aggregate will initially sink into surfacing, requiring the application of additional aggregate. Sufficient aggregate application is achieved when there are no wet spots remaining. Aggregate application rate is typically 100 lbs./100 ft².

- Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or broadcasting purposes.
- Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfaces.
- Ceramaquartz (30 mesh) (S-Grade blend) for aesthetic color quartz finished surfacing.

**Step 5:** Allow the aggregate-filled Kemperdur AC Traffic Coating to cure for approximately 60 minutes. Times may vary depending on temperatures. Remove excess aggregate by brooming and vacuuming.

**Step 6:** Roller-apply KEMPERDUR AC FINISH evenly onto the surface at the rate of approximately 60 ft²/5 kg unit. Ensure to lap each preceding path to erase squeeze out from the edge of roller. If necessary, a second coat may be applied.

**Disposal**

Cured KEMPERDUR® AC Traffic Coating may be disposed of in standard landfills. This is accomplished by thoroughly mixing all surfacing components together. Note: Uncured KEMPERDUR® AC Traffic Coating resin and hardener, primer components, and sealer are considered hazardous materials and must be handled as such, in accordance with local, state and federal regulations. Do not throw away uncured resin, hardener, primer or sealer.

**Ordering Information**

KEMPERDUR® AC Traffic Coating Work Pack:

<table>
<thead>
<tr>
<th>Item #:</th>
<th>Size:</th>
</tr>
</thead>
<tbody>
<tr>
<td>336-77-005</td>
<td>Component A KEMPEROL® AC Resin</td>
</tr>
<tr>
<td></td>
<td>2.64 US GAL • 10 kg</td>
</tr>
<tr>
<td></td>
<td>Component B Mineral Filler</td>
</tr>
<tr>
<td></td>
<td>23 kg</td>
</tr>
<tr>
<td></td>
<td>Component C Catalyst Powder</td>
</tr>
<tr>
<td></td>
<td>2 (100g) plastic bags</td>
</tr>
</tbody>
</table>

Separate Catalyst Powder
AKZO-77-251 100g plastic bag

---

DISCLAIMER: NO WARRANTY, EXPRESS OR IMPLIED, IS MADE IN THIS DOCUMENT. THE PRODUCT IS NOT CLAIMED TO BE MERCHANTABLE OR FIT FOR ANY PARTICULAR PURPOSE. User and certified Kemper System America, Inc. (KSA) applicators determine suitability only. See individual KSA product data sheets, MSDS sheets, guide specifications and details for complete information regarding the suitability, application and handling of KSA products.
# Product Information

## KEMPERDUR® AC Finish

**Work pack includes:**
Component A: Base Resin, Component B: Catalyst Powder

<table>
<thead>
<tr>
<th><strong>Product Description</strong></th>
<th><strong>KEMPERDUR® AC Finish</strong> is a high performance, quick-curing, abrasion-resistant topcoat/sealer that provides a UV-resistant, aesthetic surfacing.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Composition &amp; Materials</strong></td>
<td>KEMPERDUR® AC Finish is a two-component, cold liquid-applied Polymethyl Methacrylate (PMMA) finish coating. Standard colors are light grey and transparent. Inquire for special order colors.</td>
</tr>
<tr>
<td><strong>Use</strong></td>
<td>KEMPERDUR® AC Finish is used as a colored or transparent topcoat over KEMPEROL® AC Traffic Coating and KEMPEROL® AC membrane waterproofing systems.</td>
</tr>
<tr>
<td><strong>Limitations</strong></td>
<td>Kemperol AC Finish may be applied when the ambient temperature is between 23°F (-5°C) and a maximum of 95°F (35°C). The substrate temperature must be a minimum of 5 degrees above the dew point. The viscosity increases with falling temperature. Provide and maintain positive airflow over freshly applied KEMPERDUR® AC Finish materials during entire curing period to facilitate complete cure. Natural airflow is typically sufficient for exterior applications, but locations such as beneath large mechanical units, at inside corners, at the base of high walls, and other similar areas where stagnant air may occur should be provided with powered fans.</td>
</tr>
</tbody>
</table>
| **Yield** | Membrane Coating: 100 ft²/coat/5kg work pack  
Aggregate Sealing/Coating: 60 ft²/coat/5kg work pack |
| **Note:** All yields are approximate and may vary depending upon smoothness and absorbency of substrate. |
| **Storage** | Always store in cool and dry location. Do not store in direct sunlight or in temperatures below 35°F (1.7°C) or above 80°F (27°C). Approximate shelf life 12 months with proper storage.  
For best use, 24 hours before application, the material is to be acclimated at temperatures between 65-70°F (18-21°C). |
| **Precautions** | Review Safety Data Sheets before handling, available online at kempersystem.net.  
**Surface Preparation** | All surfaces must be free from gross irregularities, loose, unsound or foreign material such as dirt, ice, snow, water, grease, oil, release agents, lacquers, or any other condition that would be detrimental to adhesion of the sealer  
**Mixing of Coating** | Note: Prior to opening the containers of KEMPERDUR® AC Finish, wear appropriate safety glasses and protect hands and wrists by wearing gauntlet-type neoprene gloves. Agitate coating in sealed container prior to use.  
**Step 1:** Mix resin Component A with a spiral KEMPEROL® agitator, until the liquid is a uniform color, with no light or dark streaks present.  
**Step 2:** Add the Catalyst Powder, Component B, to resin Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin. The amount of Catalyst Powder must be adjusted according to the temperature (see table). |
Add the Catalyst Powder, Component B, to resin Component A and mix with the same agitator for 2 minutes or until the powder is completely mixed throughout the liquid resin. The amount of Catalyst Powder must be adjusted according to the temperature (see table).

**Step 1:** After the Sealer is mixed, apply approx. 0.8 gallons per 100 square feet (9 m²). Obtain uniform and full coverage, eliminating roller marks, but do not overwork. Cover one working area at a time between 15 – 20 sq. ft.

**Step 2:** Following minimum 1 hour cure time, apply an additional coat of KEMPERDUR® AC Finish coating at the rate of approximately 0.8 gal. per 100 square feet per coat. The application of two coats of all colored coatings is recommended to achieve best appearance and longest performance life.

After completion of coating, avoid any traffic for a minimum of two (2) hours.

Cured KEMPERDUR® AC Finish may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Note: Uncured KEMPERDUR® AC Finish is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulations. Do not throw uncured resin away.

Kemperdur AC Finish Work Pack:
- Item #: 346-00-005 Transparent
  - Size: 1.22 US GAL • 5 kg
- Item #: 346-79-005 Stone Gray
  - Size: 1.22 US GAL • 5 kg
- Separate Catalyst Powder
  - AKZO-77-251
  - 100 g plastic bag
**Product Information**

**SURFACING AND MIXING SAND**

**Product Description**

<table>
<thead>
<tr>
<th>U.S. Sieve No.</th>
<th>Sieve Opening mm/inch</th>
<th>% RET</th>
<th>% PASS</th>
<th>% RET</th>
<th>%Pass</th>
<th>% RET</th>
<th>%Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>1.68/1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1.1</td>
<td>98.4</td>
</tr>
<tr>
<td>14</td>
<td>1.4/.0555</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>100.0</td>
<td>23.4</td>
<td>75.5</td>
</tr>
<tr>
<td>16</td>
<td>1.18/.0469</td>
<td>-</td>
<td>-</td>
<td>1.6</td>
<td>98.4</td>
<td>48.1</td>
<td>27.4</td>
</tr>
<tr>
<td>18</td>
<td>1.00/.0394</td>
<td>-</td>
<td>-</td>
<td>22.8</td>
<td>75.5</td>
<td>14.3</td>
<td>13.1</td>
</tr>
<tr>
<td>20</td>
<td>0.850/.0331</td>
<td>-</td>
<td>-</td>
<td>32.3</td>
<td>27.4</td>
<td>6.9</td>
<td>6.2</td>
</tr>
<tr>
<td>25</td>
<td>0.710/.0278</td>
<td>0</td>
<td>100.0</td>
<td>28.2</td>
<td>13.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>0.600/.0234</td>
<td>2.3</td>
<td>97.7</td>
<td>8.8</td>
<td>6.3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>35</td>
<td>0.500/.0197</td>
<td>33.8</td>
<td>63.9</td>
<td>3.1</td>
<td>3.2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>40</td>
<td>0.425/.0165</td>
<td>23.3</td>
<td>40.6</td>
<td>1.1</td>
<td>2.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>45</td>
<td>0.355/.0139</td>
<td>24.9</td>
<td>15.7</td>
<td>.7</td>
<td>1.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>50</td>
<td>0.300/.0117</td>
<td>11.6</td>
<td>4.1</td>
<td>8</td>
<td>.7</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**U.S. Sieve Series and Screen Scale Equivalents A.S.T.M. - E 1187**

<table>
<thead>
<tr>
<th>Composition (Wt%)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SiO₂</td>
<td>99.40</td>
</tr>
<tr>
<td>Al₂O₃</td>
<td>0.13</td>
</tr>
<tr>
<td>CaO</td>
<td>0.03</td>
</tr>
<tr>
<td>Fe₂O₃</td>
<td>0.03</td>
</tr>
<tr>
<td>K₂O</td>
<td>0.02</td>
</tr>
<tr>
<td>TiO₂</td>
<td>0.02</td>
</tr>
<tr>
<td>Na₂O</td>
<td>0.01</td>
</tr>
<tr>
<td>MgO</td>
<td>0.01</td>
</tr>
<tr>
<td>L.O.I.</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Hardness on Moh's scale: 6-8
Specific Gravity: 2.65

**Use (Surfacing Sand)**

Used with EP/EP5 primers to enhance the bond between the primer and resin layers. Also, used with EP/EP5/AC primers to create an alkaline resistant or adhesion key surfacing. Can also be used as a utility grade surfacing aggregate for use with KEMPERDUR® aggregate bonding and sealing resin. Refer to individual data sheets for usage information.

**Use (Mixing Sand)**

Used in with resins and primers to create a repair mortar or slurry.

**Storage**

Store in a dry and cool environment.

**Ordering Information**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surfacing Sand #0</td>
<td>50 lb bag</td>
</tr>
<tr>
<td>700-AG-001</td>
<td></td>
</tr>
<tr>
<td>Surfacing Sand #1</td>
<td>100 lb bag</td>
</tr>
<tr>
<td>700-AG-106</td>
<td></td>
</tr>
</tbody>
</table>

Mixing Sand #0
700-AG-002 50 lb bag

Rev. 07/2015
APPLICATION AND MEASUREMENT TOOLS

**KEMPEROL® SPIRAL AGITATOR/MIXER**
Specially-designed helical mixing paddle for thoroughly mixing resins, leveling compounds, and sand mixtures prior to application. Prevents air entrapment. Two sizes -- 3” and 4” -- available.

**KEMPEROL® ROLLER HANDLES**
Specially-designed roller handles for use with KEMPEROL® roller naps. Rod style limits resin penetration into roller core so that roller naps do not quickly gum up with curing resins. Two sizes -- 4” and 7” -- available.

**KEMPEROL® RESIN AND SAND ROLLER NAPS**
Specially-designed roller naps for use with KEMPEROL® roller handles. Closed-end nylon cores. Perlon nap material will not soften, shed, or dissolve in resins and primers. Two sizes -- 4” and 7” -- available.

**KEMPEROL® DETAIL BRUSHES**
Specially-designed long-handled china bristle brushes for application of KEMPEROL® resins and primers in limited-access areas. Bristles will not soften, shed, or dissolve in resins and primers. 2.5” brush width.

**KEMPEROL® NOTCHED TROWELS**
Specially-designed 1/4” x 1/4” x 1/4” notched trowels for application of KEMPEROL® mineral-filled self-leveling surfacings. 11” x 4-1/2” trowel size.

**NOTE: SAFETY DATA SHEETS FOR ALL KEMPER SYSTEM AMERICA, INC. PRODUCTS ARE AVAILABLE ON KEMPERSYSTEM.NET.**
# KEMPEROL® Spiral Agitator/Mixer

**Product Description**

KEMPEROL® Spiral Agitator is a mixer specially designed for mixing resins, leveling compounds and sand mixtures.

**Tool Component**

Steel spiral agitator with 1/2” (12.8 mm) hex drive for use with hand-held drills and mixers.

**Use**

Used to mix all KEMPEROL® resin materials and components. KEMPEROL® spiral agitator prevents air-entrapment and mixes heavy liquids evenly.

**Clean-up and Storage**

Immediately after use, clean with MEK or lacquer thinner. Store dry with other tools, and keep from rusting.

**Ordering Information**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>579-EX-100</td>
<td>4” (10 cm) agitator</td>
</tr>
<tr>
<td>579-EX-080</td>
<td>3” (7.5 cm) agitator</td>
</tr>
</tbody>
</table>
KEMPEROL® Roller Handles

Specifically designed for KEMPEROL® resin rollers

Product Description

KEMPEROL® Roller Handles are specially designed for mounting KEMPEROL® resin rollers.

Tool Component

Plastic handle with metal shaft. Roller handle can be mounted on a broomstick or extension handle.

Use

Used to apply KEMPEROL® primers, resins, and coatings.

Clean-up and Storage

Immediately after use, clean with MEK or lacquer thinner. Store dry with other tools, and keep from rusting.

Ordering Information

KEMPEROL® Roller Handles:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>579-00-132</td>
<td>7&quot; (18 cm) roller</td>
</tr>
<tr>
<td>579-00-182</td>
<td>4&quot; (10 cm) roller</td>
</tr>
</tbody>
</table>
**KEMPEROL® Resin Roller Naps**

**Product Description**

*KEMPEROL® Resin Roller Naps* are specially designed for applying KEMPEROL® resins, primers and coatings.

**Tool Component**

Closed-end nylon rollers with ball-bearing insert.

**Use**

Resin rollers used to apply KEMPEROL® resin materials and components.

**Clean-up and Storage**

Immediately after use, clean with MEK or lacquer thinner. Store dry with other tools. Keep clean and dry.

**Ordering Information**

<table>
<thead>
<tr>
<th>KEMPEROL® Resin Rollers:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Item #</strong>:</td>
</tr>
<tr>
<td>579-00-131</td>
</tr>
<tr>
<td>579-00-181</td>
</tr>
</tbody>
</table>

---

Rev. 07/2015
**KEMPEROL® Detail Brushes**

Long-handled china bristle brushes

**Product Description**

KEMPEROL® Detail Brushes are specially designed for applying KEMPEROL® resins and primers.

**Tool Component**

Long wooden-handled china bristle brushes.

**Use**

Used to apply KEMPEROL® resin materials and components on flashings and small details.

**Clean-up and Storage**

Immediately after use, clean with MEK or lacquer thinner. Store dry with other tools, and keep clean.

**Ordering Information**

KEMPEROL® Detail Brushes:

<table>
<thead>
<tr>
<th>Item #</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>604-04-007</td>
<td>2.5” (6 cm) brush</td>
</tr>
</tbody>
</table>

Packaged 12 per carton.
## KEMPEROL® 1/4” Notched Trowel

<table>
<thead>
<tr>
<th>Product Description</th>
<th><strong>KEMPEROL® Notched Trowel</strong> is a trowel specifically designed for spreading the proper amount of Kemper System America, Inc. self leveling mineral-filled topcoat systems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool Component</td>
<td>Steel Blade, 1/4” x 1/4” x 1/4” square notch.</td>
</tr>
<tr>
<td>Use</td>
<td>Used to apply KEMPEROL® self leveling topcoat systems on an even substrate surface or on top of the KEMPEROL® membrane. The notch size helps to control the thickness of the topcoat system.</td>
</tr>
<tr>
<td>Clean-up and Storage</td>
<td>Immediately after use, clean with MEK or lacquer cleaner thinner. Store dry with other tools, and keep from rusting.</td>
</tr>
<tr>
<td>Ordering Information</td>
<td>KEMPEROL® 1/4” x 1/4” x 1/4” Notched Trowel</td>
</tr>
</tbody>
</table>
THE MASTER GUIDE SPECIFICATION CONTAINED IN THIS MANUAL PROVIDES AN OVERVIEW OF KEMPER SYSTEM AMERICA, INC. SPECIFICATION INFORMATION.

KEMPER SYSTEM AMERICA, INC. 3-PART GUIDE SPECIFICATIONS INTENDED FOR SPECIFIC TYPES OF APPLICATIONS ARE AVAILABLE IN EDITABLE MICROSOFT WORD FORMAT THROUGH THE KEMPERSYSTEM.NET WEBSITE AND THE ARCAT.COM, THE FREE ONLINE PRODUCT LIBRARY.

FOR ADDITIONAL ASSISTANCE LOCATE YOUR LOCAL KEMPER SYSTEM AMERICA, INC. REPRESENTATIVE ON OUR WEBSITE OR BY CALLING 800-541-5455.

DISCLAIMER: ALL KEMPER SYSTEM AMERICA, INC. GUIDE SPECIFICATIONS ARE PROVIDED AS A SERVICE TO THE SPECIFICATION COMMUNITY. IT IS EXPECTED THAT THE GUIDE SPECIFICATIONS WILL BE EDITED AND EXPANDED AS APPROPRIATE TO ADDRESS SPECIFIC PROJECT REQUIREMENTS, AND WILL BE MADE PART OF A PROJECT MANUAL. IT REMAINS THE RESPONSIBILITY OF THE DESIGN PROFESSIONAL TO ENSURE THAT THE INFORMATION CONTAINED IN A GUIDE SPECIFICATION IS SUFFICIENT AND SUITABLE FOR THE PROJECT REQUIREMENTS.
PART 1  GENERAL

1.1 SYSTEM DESCRIPTION
A. The following specification outlines the requirements for a fully reinforced cold liquid-applied polyurethane resin roofing, waterproofing and flashing membrane system, and all other ancillary waterproofing work including but not limited to installation of insulation, cover boards, overburden, sealants and metal work as specified.

1.2 SECTION INCLUDES
A. Adhered fully reinforced, cold liquid-applied, polyurethane resin waterproofing membrane system including membrane, penetration flashings, base flashings, and expansion joints.
B. Substrate preparation, cleaning, leveling and patching
C. Insulation/cover board/cap sheet installation
D. Temporary waterproofing and priming
E. Waterproofing membrane installation
F. Flashing installation and expansion joint installation
G. Protective surfacing
H. Alkalinity protection
I. Preparation for overburden installation

1.3 RELATED SECTIONS
A. Supplementary General Conditions
B. Basic Requirements
C. Wood Blocking and Nailers
D. Sheet Metal Flashing and Trim
E. Overburden Installation

1.4 REFERENCES
B. ACI-308 - Recommended Practice for Curing Concrete
C. ASTM - D638 - Test Methods for Tensile Properties of Plastics
D. ASTM - D4258 - Standard Practice for Surface Cleaning Concrete for Coatings
E. ASTM - D4259 - Standard Practice for Abrading Concrete
F. ASTM - D4541 - Method for Pull-Off Strength of Coatings using Portable Adhesion Tester
G. ASTM - E96(A) - Test Methods of Moisture Transmission of Material
I. Cool Roof Rating Council (CRRC) – Standard 1 – 2012
O. ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
R. International Concrete Repair Institute Guideline 03732 Concrete Surface Preparation
S. Steel Structures Painting Council (SSPC)
T. Tile Council of North America (TCNA) ANSI - A118.10 Tile Adhesion Shear Test
1.5 SUBMITTALS FOR REVIEW

A. Membrane System Product Data: Provide current standard printed product literature indicating characteristics of membrane materials, flashing materials, components, and accessories product specification and installation.

B. Product Samples: Submit product samples of membrane and flashing materials showing color, texture, thickness and surfacing representative of the proposed system for review and approval by the Owners Representative.

C. Submit sample copies of both the Manufacturer and Applicator warranties for the periods stipulated. Each specimen must be a preprinted representative sample of the issuing company's standard warranty for the system specified.

D. Submit copies of current Safety Data Sheets (SDS) for all components of the work.

E. FM / UL testing data showing that the system assembly complies with the local wind uplift requirements and provides a Class A fire-rated roof assembly.

F. CRRC (Cool Roof Rating Council) report data showing that the selected product finish is listed on the CRRC website coolroofs.org and that the initial solar reflectance, thermal emittance, and SRI values comply with LEED requirements, local building code requirements, and any specific project requirements.

G. Membrane Shop Drawings: Submit shop drawings of cold fluid-applied reinforced polyurethane system showing all a project plan, size, flashing details, and attachment for review and approval by the Owners Representative and Membrane Manufacturer.

1.6 QUALITY ASSURANCE

A. Membrane Manufacturer: Company specializing in manufacturing fully reinforced cold fluid applied liquid resin waterproofing membrane systems with a minimum of twenty (20) years of documented applications in the United States. Membrane Manufacturer shall submit the following certifications for review:

1. Substrates and conditions are acceptable for purpose of providing specified warranty.
2. Materials supplied shall meet the specified requirements.

B. Applicator: Company specializing in performing the work of this section with (3) years documented experience and approved by system manufacturer for warranted membrane installation. Applicator shall submit the following certification for review:

1. Applicator shall submit documentation from the membrane manufacturer to verify contractor’s status as an approved applicator for warranted installations.

C. Evaluate moisture content of cementitious substrate materials. Contractor shall determine substrate moisture content throughout the work and record with Daily Inspection Reports or other form of reporting acceptable to the Owner or designated Representative, and Membrane Manufacturer.

1. Tramex Concrete Moisture Encounter Meter CME4 to determine the moisture content of the top 3/4” of the concrete slab. Maximum acceptable reading 5%.
2. Anhydrous Calcium Chloride Test. Maximum result 3 lb / 1,000 ft2 of area per 24-hour period.
3. Laboratory Determination Moisture Content. Maximum result 6% by weight.
4. Relative Humidity (RH) Test. Maximum RH 75%.
5. Frothing, bubbling, or pinholes within the primer indicates excessive vapor drive from within the substrate. Blistering of membrane may result from excessive vapor drive.
6. Where results exceed the maximum acceptable reading contact Membrane Manufacturer for recommendations.

D. Random tests to determine tensile bond strength of membrane to substrate shall be conducted by the Contractor at the job site using an Elcometer Adhesion Tester Model 106 or similar device (generally appropriate for structural substrates such as concrete, metal, or wood), or by the performance of a manual pull test. Contractor shall perform tests at the beginning of the Work, and at intervals as required to assure specified adhesion with a minimum of three (3) tests per 5000 square feet. Smaller areas shall receive a minimum of three (3) tests. Test results shall be submitted to the Owner or designated Representative and the Membrane Manufacturer. Contractor shall immediately notify the Owner or designated Representative and Membrane Manufacturer in the event bond test results are below-specified values.
1. For typical applications not subject to vehicular traffic, adequate surface preparation will be indicated by tensile bond strength of membrane to substrate greater than or equal to 150 psi (1.0 N/mm²), as determined by use of an adhesion tester.

2. Adequate surface preparation will also be indicated by 135° peel bond strength of membrane to substrate such that cohesive failure of substrate or membrane occurs before adhesive failure of membrane/substrate interface.

3. In the event the bond strengths are less than the minimum specified, additional substrate preparation is required. Repeat testing to verify suitability of substrate preparation.

E. Monitor quantities of installed materials. Monitor application of primer, resin, reinforcing fleece and flashing. Perform Work in accordance with manufacturer's instructions.

***** [DELETE MOCK UP REQUIREMENT IF UNNECESSARY] *****

F. Mock-up areas shall be used to determine required methods and tools to obtain degree of substrate preparation required by the membrane manufacturer. Conduct tests as required to verify that substrate preparation meets specified requirements. Tests shall include, but are not limited to, tensile bond strength and moisture content of substrate.

1. Prepare and clean a three (3) foot (0.9 m) by three (3) foot (0.9 m) area of each substrate material type.

2. Submit findings in writing to Owner or his designated Representative and Membrane Manufacturer.

3. Mock-up areas shall be maintained for quality control for the entire project.

***** [DELETE EFVM REQUIREMENT IF UNNECESSARY] *****

G. Electronic Field Vector Mapping (EFVM) test is required on the completed membrane prior to the installation of overburden as part of the final field quality control. EFVM testing is arranged through the membrane manufacturer and performed by International Leak Detection (ILD) or an approved testing company. Check project compatibility with the membrane manufacture and ensure that all necessary components for the EFVM testing are included in the design.

A. Conform to applicable building and jurisdictional codes for roofing/waterproofing assembly and fire resistance requirements.

B. Comply with requirements of OSHA, NIOSH or local governing authority for workplace safety.

C. Comply with authority or agency "Confined Space Policy" during and throughout all work to be performed.

A. Convene a pre-installation meeting at the job site (1) week before starting work of this section. Require attendance of parties directly affecting work of this section, including but not limited to, Roofing/Waterproofing Specifier, Owner's Representative, Roofing/Waterproofing Contractor, and Membrane Manufacturer's Representative. Review roofing/waterproofing preparation and installation procedures, coordination and scheduling required with related work, and condition and structural loading limitations of deck/substrate.

A. Manufacturer's technical representative shall provide the following inspections of the membrane application:

1. Jobstart inspection at the beginning of each phase of the project, to review special detailing conditions and substrate preparation.

2. Periodic in-progress inspections throughout duration of the project to evaluate membrane and flashing application.

3. Final punch-list inspection at the completion of each phase of the project prior to installation of any surfacing or overburden materials.

4. Warranty inspection to confirm completion of all punch list items, surfacing, and overburden application.
A. The Contractor together with the Owner or his designated Representative shall define a storage area for all components. The area shall be cool, dry, out of direct sunlight, and in accordance with manufacturer's recommendations and relevant regulatory agencies. Materials shall not be stored in quantities that will exceed design loads, damage substrate materials, hinder installation or drainage.

B. Store solvent-bearing solutions, resins, additives, inhibitors or adhesives in accordance with the MSDS and/or local fire authority. After partial use of materials replace lids promptly and tightly to prevent contamination.

C. Roll goods shall be stored horizontally on platforms sufficiently elevated to prevent contact with water and other contaminants. DO NOT use rolls that are wet, dirty or have damaged ends.

D. Roofing/waterproofing materials must be kept dry at all times. If stored outside, raise materials above ground or roof level on pallets and cover with a tarpaulin or other waterproof material. Plastic wrapping installed at the factory should not be used as outside storage covers.

E. Follow manufacturer's directions for protection of materials prior to and during installation. Do not use materials that have been damaged to the point that they will not perform as specified. Fleece reinforcing materials must be clean, dry and free of all contaminants.

F. Copies of all current MSDS for all components shall be kept on site. Provide any and all crew members with appropriate safety data information and training as it relates to the specific chemical compound he or she may be expected to deal with. Each crew member shall be fully aware of first-aid measures to be undertaken in case of incidents. Comply with requirements of OSHA, NIOSH or local governing authority for work place safety.

A. Do not apply roofing/waterproofing membrane during or with the threat of inclement weather.

B. Application of cold fluid-applied reinforced polyurethane roofing/waterproofing membrane may proceed while air temperature is between 40°F (5°C) and 85°F (30°C) providing the substrate is a minimum of 5°F above the dew point.

C. When ambient temperatures are at or expected to fall below 50°F (10°C), or reach 85°F (30°C) or higher, follow Membrane System Manufacturer's recommendations for weather related additives and application procedures.

D. Ensure that substrate materials are dry and free of contaminants. DO NOT commence with the application unless substrate conditions are suitable. Contractor shall demonstrate that substrate conditions are suitable for the application of the materials.

E. Odor control and elimination measures are not typically necessary, but if required by the Owner or his designated Representative, Contractor shall implement odor control and elimination measures prior to and during the application of the roofing/waterproofing materials. Control/elimination measures shall be field tested at off-hours and typically consists of one (1) or a multiple of the following measures:

1. Sealing of air intakes with activated carbon filters. Install filters in accordance with requirements and recommendations of the filter manufacturer. Seal filters at joints and against building exterior walls to prevent leakage of unfiltered air.

2. Sealing of doorways, windows, and skylights with duct tape and polyethylene sheeting to prevent leakage of air into the building.

3. Erection and use of moveable enclosure(s) sized to accommodate work area(s) and stationary enclosure for resin mixing station. Enclosure shall be field constructed or pre-manufactured of fire retardant materials in compliance with local code requirements in accordance with requirements of the Owner or his designated Representative. Equipment enclosure(s) with mechanical air intake/exhaust openings and Odor Control Air Cleaners, as required to clean enclosed air volume and to prevent odor migration outside the enclosure. Exhaust opening shall be sealed with activated carbon filter.

4. Protection of Contractor personnel and occupants of the structure and surrounding buildings as necessary to comply with requirements of OSHA, NIOSH and/or governing local authority.

F. When disposing of all refuse or unused materials, observe all EPA, OSHA or local disposal requirements.
1.12 COORDINATION & PROTECTION

A. Coordinate the work with the installation of associated metal flashings, accessories, appurtenances, etc. as the work of this section proceeds.

B. Building components shall be protected adequately (with tarp or other suitable material) from soil, stains, or spills at all hoisting points and areas of application. Contractor shall be responsible for preventing damage from any operation under its Contract. Any such damage shall be repaired at Contractor's expense to Owner's satisfaction or be restored to original condition.

C. Provide barricades, retaining ropes, safety elements (active/passive) and any appropriate signage required by OSHA, NIOSH, and NSC and/or the Owner or designated Representative.

D. Protect finished roofing/waterproofing membrane from damage by other trades by the use of a cushioning layer such as 1” thick expanded polystyrene insulation and an impact layer such as ½” thick exterior-grade plywood.

E. Do not allow waste products containing petroleum, grease, acid, solvents, vegetable or mineral oil, animal oil, animal fat, etc. or direct steam venting to come into direct contact with the membrane unless approved by manufacturer's chemical resistance chart.

1.13 WARRANTY

***** [SELECT ONE MANUFACTURER'S WARRANTY] *****

A. Manufacturer's Material Warranty: Provide [(5) (10)] year manufacturer's material only warranty under provisions of this section. This warranty provides for supply of membrane only, limited to amounts necessary to effect repairs necessitated solely by material defective in content and composition.

B. Manufacturer's Select Labor and Material Warranty: Provide [(10) (20)] year manufacturer's select warranty under provisions of this section. This warranty provides for cost of labor and materials required to address loss of watertightness, limited to amounts necessary to affect repairs necessitated by defective material, with total expenditure limited to the original cost to the Owner of Kemperol materials.

C. Manufacturer's Premier Warranty: Provide [(10) (15) (20)] year manufacturer's premier warranty under provisions of this section. This warranty provides for cost of labor and materials for loss of watertightness, limited to amounts necessary to effect repairs necessitated by either defective material or defects in related installation workmanship, with no dollar limitation (“NDL”).

D. Waterproofing Contractor's Warranty: Provide [(2) (5)] year “Applicator Maintenance Warranty” covering workmanship for all work of this section including installation of membrane, flashings, metal work, and roofing/waterproofing accessories.

E. Submit (2) executed copies of both the manufacturer and applicator warranties for the periods stipulated, starting from the date of substantial completion. Each warranty must be signed by an authorized representative of the issuing company.

1.14 MATERIAL SUBSTITUTIONS

A. Materials proposed for use in the performance of the work that are not specified herein must be submitted to the Owner/Owner's Representative for evaluation no later than ten days prior to bid.

PART 2 PRODUCTS

2.1 GENERAL

A. The products herein specified are totally pre-engineered products of the listed manufacturer and establish criteria for the approval of substitutions. Products must be part of a virtually odorless, pre-engineered, low VOC fully reinforced cold liquid applied polymeric resin waterproofing membrane system, equivalent in function, quality, composition and method of application to be considered for approval as an “Approved Substitute”. Substitute materials must meet or exceed the physical performance characteristics of the specified materials. PMMA or single component primers or resin systems will not be accepted. A minimum 165 g/m² fleece reinforcement is required.
2.2 MEMBRANE

A. Membrane: Two-component, cold fluid-applied reinforced polyurethane waterproofing membrane with a 360 degree needle punched non-woven 165 g/m² polyester reinforcing fleece, for a finished dry film membrane thickness of .070 inch nominal per ply. Provide products manufactured and supplied by the following:


B. Physical Properties:

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Value</th>
<th>Test Method</th>
<th>Physical Property</th>
<th>Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Yellow-Gray</td>
<td></td>
<td>Water absorption</td>
<td>&gt;1%</td>
<td>D471</td>
</tr>
<tr>
<td>Physical State</td>
<td>Cures to Solid</td>
<td></td>
<td>Water vapor transmission</td>
<td>.08 perms</td>
<td>E96</td>
</tr>
<tr>
<td>Thickness (165 Fleece)</td>
<td>80 mils</td>
<td>D5147</td>
<td>Crack spanning</td>
<td>2 mm/0.08 inch</td>
<td></td>
</tr>
<tr>
<td>VOC Content</td>
<td>6 g/l</td>
<td>D1204</td>
<td>Short-term temperature resistance</td>
<td>250 ºC/482 ºF</td>
<td></td>
</tr>
<tr>
<td>Peak Load @ 73 ºF, avg.</td>
<td>&gt;70 lbf/in</td>
<td>D5602</td>
<td>Usage time*</td>
<td>30 minutes</td>
<td></td>
</tr>
<tr>
<td>Elongation</td>
<td>Min 30%</td>
<td>D5147</td>
<td>Water resistant after*</td>
<td>2 hours</td>
<td></td>
</tr>
<tr>
<td>Tearing Strength</td>
<td>90 lbf</td>
<td>D5147</td>
<td>Solid to walk on after*</td>
<td>24 hours</td>
<td></td>
</tr>
<tr>
<td>Puncture resistance</td>
<td>56 lbs.</td>
<td>D5602</td>
<td>Can be driven on after*</td>
<td>48 hours</td>
<td></td>
</tr>
<tr>
<td>Dimensional stability</td>
<td>0.15%</td>
<td>D1204</td>
<td>Apply coating/surfacing between*</td>
<td>16-48 hours</td>
<td></td>
</tr>
<tr>
<td>Water absorption</td>
<td>&gt;1%</td>
<td>D570</td>
<td>Apply overburden after*</td>
<td>48 hours</td>
<td></td>
</tr>
<tr>
<td>Surface hardness*</td>
<td>Shore A-75</td>
<td>D2240</td>
<td>Completely hardened*</td>
<td>3 days</td>
<td></td>
</tr>
</tbody>
</table>

* values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

2.3 FLASHINGS

A. Membrane Flashings: A composite of the same resin material as field membrane with 165 g/m² fleece reinforcement.

2.4 SUBSTRATE PRIMERS AND RESIN ADDITIVES

A. Polyurethane Primer: Two-component, solvent-free polyurethane resin for use in improving adhesion of membrane to wood, metal and bituminous substrate surfaces, as provided by the following manufacturer:


B. Epoxy Primer: Two-component, solvent-free epoxy resin for use in improving adhesion of membrane to cementitious/masonry substrate surfaces, as provided by the following manufacturer:


C. Cold Weather Additive: Additive specifically designed to accelerate the resin reaction time at ambient temperatures below 50ºF (10ºC). Accelerator to be used with cream resin Component A prior to mixing of multi-component resin, as provided by the following manufacturer:


2.5 ACCESSORIES

A. Application Tools, Accessories, and Cleaners: Supplied and/or approved by membrane manufacturer for product installation.

B. Solvent-Based Cleaner for Tools and Membrane Tie-Ins: Methyl Ethyl Ketone (MEK) or acetone.

C. Water-Based Cleaner for Membrane: Simple Green HD.

D. Aggregate Specification and Size:

All surfacing aggregates shall be washed, kiln-dried, dust-free, suitable for broadcast, round grain or angular, and sized as follows:

1. Mixing Sand (00) #35 (0.3 – 0.6 mm) for patching voids less than 1”.
2. Surfacing Sand (0) #18 (0.5 – 1.2 mm) for patching voids from 1” – 2” or surfacing.
3. Surfacing Sand (1) #14 (0.8 – 1.5 mm) for coarse surfacing.
4. Ceramaquartz (30 mesh) (S Grade blend) for aesthetic color quartz finished surfacing.

Mixing Proportions shall be a ratio of resin to sand at 1:2 by volume for leveling, 1:4 by volume for patching, or as approved by membrane manufacturer.
### 2.6 CAP SHEET

A. **SBS Cap Sheet**: Mineral-surfaced fiberglass or polyester-reinforced SBS-modified bitumen cap sheet conforming to ASTM D-6163 (fiberglass) or ASTM D-6164 (polyester), suitable for torch, hot asphalt, or self-adhered application.

B. **APP Cap Sheet**: Mineral-surfaced polyester-reinforced APP-modified bitumen cap sheet conforming to ASTM D-6222, suitable for torch application.

### 2.7 INSULATION

**Polyisocyanurate Insulation with Nonasphaltic Facers (Hunter Panel – H-Shield)**: Meeting or exceeding the requirements for ASTM C1289-06, Type II, Class 1, [Grade 2 (20 psi) [Grade 3 (25 psi)], 1.5 inch minimum thickness, with the following characteristics:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Board Density</td>
<td>2.0 lb/cu ft</td>
</tr>
<tr>
<td>2</td>
<td>Board Size</td>
<td>[48&quot; x 96&quot;] inches</td>
</tr>
<tr>
<td>3</td>
<td>Board Thickness</td>
<td>[____] inches</td>
</tr>
<tr>
<td>4</td>
<td>Thermal Conductivity</td>
<td>K factor of [0.17] [____] as determined by ASTM C177, aged 12 months at 75 degrees F</td>
</tr>
<tr>
<td>5</td>
<td>Board Edges</td>
<td>square</td>
</tr>
</tbody>
</table>

**Tapered Polyisocyanurate Insulation with Nonasphaltic Facers (Hunter Panel – Tapered H-Shield)**: Meeting or exceeding the requirements for ASTM C1289-06, Type II, Class 1, [Grade 2 (20 psi) [Grade 3 (25 psi)], 0.5 – 4.5 inch thickness, with the following characteristics:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Board Density</td>
<td>2.0 lb/cu ft</td>
</tr>
<tr>
<td>2</td>
<td>Board Size</td>
<td>[48&quot; x 96&quot;] inches</td>
</tr>
<tr>
<td>3</td>
<td>Board Taper</td>
<td>[____] inch per foot</td>
</tr>
<tr>
<td>4</td>
<td>Total Thickness</td>
<td>[<strong><strong>] inches minimum [As required to achieve an average R value of [</strong></strong>] for tapered insulation system].</td>
</tr>
<tr>
<td>5</td>
<td>Thermal Conductivity</td>
<td>K factor of [0.17] [____] as determined by ASTM C177, aged 12 months at 75 degrees F</td>
</tr>
<tr>
<td>6</td>
<td>Board Edges</td>
<td>square</td>
</tr>
</tbody>
</table>

### 2.8 INSULATION COVER BOARD

**Concrete Cover Board (USG - SECUROCK)**: High compressive strength underlayment board consisting of aggregated portland cement slurry with polymer-coated glass-fiber mesh, with the following characteristics:

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Board Weight</td>
<td>2.4 lbs/sq.ft.</td>
</tr>
<tr>
<td>2</td>
<td>Board Size</td>
<td>[48&quot; x 48&quot;] [48&quot; x 96&quot;]</td>
</tr>
<tr>
<td>3</td>
<td>Board Thickness</td>
<td>1/2 inch</td>
</tr>
<tr>
<td>4</td>
<td>Flexural Strength</td>
<td>&gt;750 psi, parallel, per ASTM C-947</td>
</tr>
<tr>
<td>5</td>
<td>Compressive Strength</td>
<td>&gt;1000 psi nominal</td>
</tr>
<tr>
<td>6</td>
<td>Flute Spannability</td>
<td>12 in., per ASTM E-661</td>
</tr>
<tr>
<td>7</td>
<td>Permeance</td>
<td>5.84 perms, per ASTM E-96</td>
</tr>
<tr>
<td>8</td>
<td>Thermal Conductivity</td>
<td>R-value of 0.39 as determined by ASTM C-518</td>
</tr>
<tr>
<td>9</td>
<td>Coefficient of thermal expansion</td>
<td>4.5 x 106 per ASTM E-831</td>
</tr>
</tbody>
</table>

KEMPEROL® 2K-PUR Roofing and Waterproofing System  
Rev. 07/2015  
Master Guide Specification  
07100-7
2.9 INSULATION AND COVER BOARD SECUREMENT

10. Linear variation w change in moisture <0.07% max per ASTM D-1037
11. Water absorption <15 % max per ASTM C-473
12. Mold resistance 10 per ASTM D-3273
13. Board Edges Square

B. Polyisocyanurate Insulation Cover Board (H-Shield HD): High compressive strength (100 psi) underlay-ment board with heavy-duty coated glass non-perforated facers with the following characteristics:

1. Board Weight 0.34 lb/sq. ft
2. Board Size [48 x 96] inches
3. Board Thickness 1/2 inch
4. Thermal Conductivity R-value of 2.5 as determined by ASTM C518
5. Board Edges Square

C. Plywood Cover Board (APA-rated C-C Plugged): Exterior-grade plywood sheathing board, installed plugged side up, with the following characteristics:

1. Board Weight 2.1 lb/sq. ft
2. Board Size [48 x 96] inches
3. Board Thickness 5/8 inch
4. Thermal Conductivity R-value of 0.77 as determined by ASTM C518
5. Board Edges tongue & groove

2.10 SURFACINGS AND COATINGS

***** [DELETE FOLLOWING SECTION IF NOT SPECIFIED] *****

***** [SELECT ONE OR MORE ATTACHMENT METHODS. HOT ASPHALT ATTACHMENT NOT ACCEPTABLE WITH POLYSTYRENE INSULATION AND COVER BOARDS] *****

A. Mechanical Fasteners: FM-approved corrosion resistant insulation fasteners of appropriate length with plates. Securement pattern shall be in accordance with specified wind uplift rating for system application. Roofing fasteners shall be a type approved by membrane and insulation manufacturer.

B. Polyurethane Adhesive: FM-approved single component moisture-cured, or two component reactive-cured polyurethane adhesive. Adhesive application rate shall be in accordance with specified wind uplift rating for system application. Roofing adhesive shall be a type approved by membrane and insulation manufacturer.

C. Asphalt Adhesive: FM-approved steep roofing asphalt conforming to ASTM D-312, Type III. Provide label on each container indicating flash point, finished blowing temperature, softening point, and equi-viscous temperature. Asphalt primer, cutback solvent type, conforming to ASTM D-41, is required for concrete, masonry, and metal surfaces.

***** [DELETE FOLLOWING SECTION IF NOT SPECIFIED] *****

A. Aggregate Finish Bonding Resin: Two-component polyurethane-based coating suitable for bonding ag gregate, as provided by the following Manufacturer:

1. Kemper System America, Inc.’s Kemperol 2K-PUR Resin (without fleece)

B. Aggregate Finish Coating: Polyurethane-based clear coating suitable for use to both bond and/or seal aggregate, as provided by the following Manufacturer:

1. Kemper System America, Inc.’s Kemperdur H2O Sealer
2. Kemper System America, Inc.’s Kemperdur DEKO Transparent

C. Aggregate Finish Coating: Colored coating suitable for use as bonding resin and/or aggregate sealing coating, as provided by the following Manufacturer:

1. Kemper System America, Inc.’s Kemperdur BSF-R Finish
2. Kemper System America, Inc.’s Kemperdur 2KS-FR Finish

D. Color Coating: Colored topcoat, as provided by the following Manufacturer:
2.11 TRAFFIC-BEARING AGGREGATE SURFACING

1. Kemper System America, Inc.’s Kemperdur BSF-R Finish
2. Kemper System America, Inc.’s Kemperdur Deko 2KS-FR Finish
3. Kemper System America, Inc.’s Kemperdur Deko Finish, acceptable for submerged applications

***** [NOT SUITABLE FOR INSULATED ASSEMBLY – FOR USE OVER CONCRETE SUBSTRATES ONLY] [DELETE FOLLOWING SECTION IF NOT SPECIFIED] *****

A. Coating: Two-component polyurethane-based resin with graded mineral filler, as provided by the following Manufacturer:
   1. Kemper System America, Inc.’s Kemperdur TC Traffic Coating, Components A, B and C

B. Sealer: Single component polyurethane-based clear sealer, as provided by the following Manufacturer:
   1. Kemper System America, Inc.’s Kemperdur Finish
   2. Kemper System America, Inc.’s Kemperdur H2O Sealer

C. Sealer: Two component epoxy-based or urethane based colored sealer, as provided by the following Manufacturer:
   2. Kemper System America, Inc.’s Kemperdur 2KS-FR Finish
   3. Kemper System America, Inc.’s Kemperdur DEKO Finish

2.12 TILE MORTAR ADHESIVE

A. Latex-Modified Cementitious Mortar Adhesive: Portland cement-based mortar tile adhesive modified with liquid latex additive for improved adhesion and freeze-thaw resistance, as provided by the following manufacturers:
   1. Mapei’s Kerabond/Keralastic Premium Flexible Tile Mortar.
   2. Laticrete’s 211 Powder with Laticrete 4237 Latex Additive.

B. Epoxy Setting Mortar: Two-component, solvent-free epoxy resin tile adhesive for improved adhesion and freeze-thaw resistance, as provided by the following manufacturers:
   1. Mapei’s Kerapoxy 100% Solids Epoxy Setting Mortar.
   2. Laticrete’s Latapoxy 100% Solids Epoxy Setting Mortar.

***** [DELETE FOLLOWING SECTION IF NOT SPECIFIED] *****

***** [DRAINAGE/PROTECTION BOARD IS TYPICALLY INSTALLED UNDER MOST OVERBURDEN ASSEMBLIES DIRECTLY ON TOP OF WATERPROOFING MEMBRANE, AND OVER EXTRUDED POLYSTYRENE INSULATION IN VEGETATED ROOF ASSEMBLIES] *****

2.13 DRAINAGE/PROTECTION BOARD

A. Drainage Board: Entangled filament polypropylene core with nonwoven geotextile filtering fabric suitable for all overburden applications, with the following characteristics:
   1. Minimum Core Weight: 16 oz/sq.yd.
   2. Core Thickness: 0.30 in.
   3. Minimum Flow Rate: 9.7 gpm/ft @ 1000 psf, 1.0 gradient
   4. Manufacturer/Product: Enkadrain/W 3601

B. High compressive strength dimpled polystyrene or polyethylene core with nonwoven geotextile filtering fabric suitable for use below Extruded Polystyrene Insulation, with the following characteristics:
   1. Compressive Strength: >15,000 psf
   2. Material Core Weight: 0.4 oz/yd2
   3. Dimple Height: 0.4 in.
   4. Water Flow Rate: 140 gal/min./ft.2
   5. Manufacturer/Product: ZinCo/Drainage Mat PP11
2.14 OVERBURDEN INSULATION

A. Extruded Polystyrene Insulation: Meeting ASTM C578, Type [IV] [V] [VI] [VII] physical properties with natural skin surfaces; 1.5 inch minimum thickness, with the following characteristics:

1. Board Density [____] lb/cu ft
2. Board Size [__ x __] inches
3. Board Thickness [____] inches
4. Thermal Conductivity K factor of [0.20] [____] as determined by ASTM C177
5. Board Edges square
6. Manufacturer The Dow Chemical Company/Dow Building Solutions

2.15 FILTER FABRI

A. Plaza Assembly Filter Fabric: Non-woven polyester fabric, minimum 4.0 oz/sq.yd., for use under stone ballast, sand setting bed, and similar overburden; as supplied or approved by membrane manufacturer.

2.16 PRECAST CONCRETE PAVERS

Concrete Pavers: Freeze-thaw resistant precast concrete pavers, minimum 2” thickness, with the following characteristics:

1. Compressive Strength 8,500 psi ave. min. (ASTM C140)
2. Flexural Strength 1,100 psi ave. min. (ASTM C293)
3. Water Absorption 5% max. (ASTM C140)
4. Freeze/Thaw 1% max. loss of dry weight – 50 cycles (ASTM C67)
5. Center Load 1,750 lbs. ave. min. (WTCL 99)
6. Weight 25 lbs./sq.ft. ave. min. (based on 2” thickness)
7. Dimensions [ ] x [ ] inches
8. Manufacturer Hanover Architectural Products
9. Style [ ]
10. Color [ ]

B. Hanover/Compensator Paver Pedestal System: Heavy-duty polyethylene pedestals specifically designed for use with specified precast concrete pavers. Provided with shim system or integral height adjustment mechanism. Provided with drainage channels within the pedestal base.

2.17 SEPERATION MEMBRANE

A. Separation Membrane: Specifically designed for use over XPS insulation suitable for landscaped applications with an overburden of water retention/drainage board and topping of soil or other growing media with extensive-type vegetation such as sedums and semi-intensive-type vegetation such as grasses and wildflowers, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Separation Membrane TGV 21.

2.18 WATER RETENTION/DRAINAGE BOARD

A. Extensive Assembly Water Retention Board: Molded polyethylene core with water retaining troughs and openings for ventilation and evaporation, and multidirectional drainage channel system on the underside. Suitable for landscaped applications where a direct topping of soil or other growing media with extensive-type vegetation such as sedums will be planted, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Floradrain FD 25
B. Semi-Intensive Assembly Water Retention Board: Molded polyethylene core with water retaining troughs and openings for ventilation and evaporation, and multidirectional drainage channel system on the underside. Suitable for landscaped applications where a direct topping of soil or other growing media with semi-intensive-type vegetation such as grasses and wildflowers will be planted, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Floradrain FD 40-E

C. Intensive Assembly Water Retention Board: Molded ABS core with water retaining troughs and openings for ventilation and evaporation, and multidirectional drainage channel system on the underside. Suitable for landscaped applications where a direct topping of soil or other growing media with intensive-type vegetation such as turf/lawn, bushes and small trees will be planted, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Floradrain FD 60

D. Water Retention Board (EnkaRetain & Drain 3111): Entangled filament polypropylene core with synthetic water absorbent mat and nonwoven geotextile filtering fabric suitable for all overburden applications, with the following characteristics:

1. Minimum Core Weight: 16 oz/sq.yd.
2. Core Thickness: 0.40 in.
3. Total Thickness: 0.60 in.
4. Water Storage Capacity: 0.11 gal/sf
5. Minimum Flow Rate: 23.0 gpm/ft @ 1000 psf, 1.0 gradient

**** [SELECT ONE FILTER LAYER] ****

A. Landscaped Assembly Filter Layer: Non-rotting thermal consolidated polypropylene filter sheet installed over all water retention/drainage boards prior to application of soil or other growing media, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Filter Sheet SF

B. Plaza Assembly Filter Fabric: Non-woven polyester fabric, minimum 4.0 oz/sq.yd., for use under stone ballast, sand setting bed, and similar overburden; as supplied or approved by membrane manufacturer.

**** [SELECT GROWING MEDIA TYPE(S)] ****

A. Extensive-Type Growing Media: Special blend of recycled materials, mineral aggregate, and organic compost elements, intended for use with landscaped applications with extensive-type vegetation such as sedums, to be installed in a 3” thick bed, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Zincoblend E.

B. Intensive-Type Growing Media: Special blend of recycled materials, mineral aggregate, and organic compost elements, intended for use with landscaped applications with semi-intensive and intensive-type vegetation such as grasses, wildflowers, turf/lawn, bushes and small trees, to be installed in a 5” – 14” thick bed, as provided by the following manufacturer:

1. ZinCo USA, Inc.’s Zincoblend I

C. Mineral Fill Base Media: Special blend of recycled materials and mineral aggregate, intended for use with landscaped applications with intensive-type vegetation such as turf/lawn, bushes and small trees, to be installed as a stabilizing infill within the Floradrain FD 60 prior to Filter Sheet SF installation, and as a base layer in areas where the fill thickness will exceed 14”, as provided by the following manufacturer:

6. ZinCo USA, Inc.’s Zincoblend M
3.1 EXAMINATION

A. Verify that surfaces and site conditions are ready to receive work.
B. Verify deck/substrate openings, curbs, and protrusions through deck/substrate, wood cant strips and reglets are in place and solidly set.
C. Verify deck/substrate is structurally supported, secure and sound.

3.2 PREPARATION OF SUBSTRATE

A. General: Surfaces to be prepared as a substrate for the new waterproofing system as follows:

1. The contractor shall determine the condition of the existing structural deck/substrate. All defects in the deck or substrate shall be corrected before new waterproofing work commences. Areas of deteriorated deck/substrate, porous or other affected materials must be removed and replaced with new to match existing.
2. Prepare flashing substrates as required for application of new waterproofing membrane flashings.
3. Inspect substrates, and correct defects before application of new waterproofing. Fill all surface voids greater than 1/8 inch wide with an acceptable fill material.
4. Remove all ponded water, snow, frost and/or ice from the work substrate prior to installing new waterproofing materials.
5. The final substrate for waterproofing shall be clean, dry, free of loose, spalled or weak material including coatings, mineral aggregate, and flood coat/gravel surfacing, oil, grease, contaminants, abrupt changes in level, waterproofing agents, curing compounds, and free of projections which could damage membrane materials.

***** [SELECT REQUIRED SUBSTRATE PREPARATION METHOD(S)] *****

B. Existing Asphaltic Bituminous Waterproofing:

1. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas.
2. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.
3. Smooth-surfaced membrane with applied coating shall have all loose coating removed, and an adhesion test performed by Waterproofing Manufacturer's Technical representative to confirm acceptable adhesion.
4. Granule-surfaced membrane shall have all loose granules removed from the surface by vacuuming and power brooming.
5. Gravel-surfaced membrane shall have all loose gravel removed and the roof surface thoroughly cleaned with all ridges and high points removed. A layer of coated glass-faced polyisocyanurate foam insulation (R=6 min.) shall be adhered in urethane foam roof adhesive over the roof surface, or mechanically attached through the existing roof assembly into the structural deck.

C. Existing Coal Tar Pitch Bituminous Waterproofing:

1. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas.
2. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.
3. Gravel-surfaced membrane shall have all loose gravel removed and the roof surface thoroughly cleaned with all ridges and high points removed. A layer of coated glass-faced polyisocyanurate foam insulation (R=20 min. or greater as required to prevent the pitch from reaching 85°F) shall be adhered in urethane foam roof adhesive over the roof surface.

D. Existing Polymeric Single Ply Waterproofing:

1. Existing flashings shall be removed down to the structural substrate/penetration at all flashing areas.
2. Damaged/saturated areas of existing roofing membrane and underlying assembly shall be removed and replaced, or repaired in kind.
3. A layer of coated glass-faced polyisocyanurate foam insulation (R=6 min.) shall be adhered in urethane foam roof adhesive over the roof surface, or mechanically attached through the existing roof assembly into the structural deck.
E. Structural Concrete:
1. New concrete shall have cured a minimum of 28 days in accordance with ACI-308, or as approved by Waterproofing Manufacturer's Technical Department.
2. New or existing concrete shall be free of oil, grease, curing compounds, loose particles, moss, algae growth, laitance, friable matter, dirt, bituminous products and previous waterproofing materials.
3. New or existing concrete shall be dry with a maximum moisture content of five (5) percent. Determinations of moisture content shall be performed by the Contractor. Contractor shall be responsible to perform periodic evaluations of moisture content during the work. Moisture evaluation results shall be submitted in writing to the Owner or his designated Representative and Waterproofing manufacturer for acceptance.
4. Where required, concrete shall be abrasively cleaned in accordance with ASTM D4259 to provide a sound substrate free from laitance. Achieve an open concrete surface in accordance with ICRI surface profiles CSP 3-5. When using mechanical methods to remove existing waterproofing products or surface deterioration, the surface profile is not to exceed ¼ inch (peak to valley).
5. The substrate shall be sound and all spalls, voids and blow holes on vertical or horizontal surfaces must be repaired prior to placement of the primer coat. Spalls and other deterioration shall be repaired in accordance with the requirements of the Owner or his designated Representative and Membrane manufacturer.
6. Areas of minor surface deterioration of 0.25” (6 mm) or greater in depth shall be repaired to prevent possible pooling of the liquid applied materials, leading to excessive usage of primer and resin.
7. Hollow-core panels, T-panels, and Twin-T panels shall have grouted joints between panels and shall be provided with mechanical securement from panel to panel.
8. For concrete materials with a compressive strength of less than 3,000 psi contact Waterproofing Manufacturer's Technical Department for substrate preparation requirements.

F. Masonry:
1. Walls shall be built with hard kiln dried brick or waterproof concrete block construction.
2. Areas of soft or scaling brick or concrete, faulty mortar joints, or walls with broken, damaged or leaking coping shall be repaired in accordance with the requirements of the Owner or his designated Representative and Flashing Membrane Manufacturer.

G. Steel/Metal:
1. Clean and prepare metal surfaces to near white metal in accordance with SSPC - SP3 (power tool clean) or as required by membrane manufacturer. Extend preparation a minimum of one (1) inch beyond the termination of the membrane flashing materials.
2. In addition to cleaning, all metal surfaces shall be abraded to provide a rough open surface. A wire brush finish is not acceptable.

H. Wood/Plywood:
1. Plywood shall be identified with American Plywood Association (APA) grade trade marks and shall meet the requirements of product standard PS1. Strip plywood joints with four inch (4”) wide strip of flashing membrane. Cover knot holes or cracks with strips of flashing membrane.

I. Other Flashing Surfaces:
1. Remove all contaminants as required by membrane manufacturer. Surface preparation shall be performed by means approved by Owner or his designated Representative.

J. Finish Leveling, Patching and Crack Preparation:
1. General: epoxy primer/sand mix is the preferred material for all concrete and masonry substrate finish leveling, crack and wall/deck preparation and patching. Epoxy primer/sand patching mix provides a set time of approximately twelve (12) hours and does not require surface grinding. Kemperol primer/sand mix is typically applied in conjunction with general surface priming.
2. Concrete and Masonry Substrate Leveling & Patching: Substrate conditions are to be evaluated by the Contractor, the Owner, or his designated Representative, and Membrane manufacturer. Perform leveling and patching operations as follows:
3.3 WOOD NAILER LOCATION AND INSTALLATION

A. Install pressure-treated wood nailers as specified, and as required by the Membrane manufacturer. Wood nailers are required to match the thickness of insulation and cover board, and are to be secured directly to the structural deck. Wood nailers shall be installed at all roof edges and on either side of expansion joints, as well as beneath any equipment flanges.

B. Secure Wood Nailer: Wood nailers shall be firmly fastened to the deck. The wood nailer attachment must be able to resist a minimum force of 200 lbs. per lineal foot, in any direction. Mechanically fasten wood nailers as required to resist a force of 200 lbs per lineal foot, but with no less than 5 fasteners per 8 foot or 6 fasteners per 10 foot length of nailer. Refer to current FM Loss Prevention Bulletin 1-49 for additional attachment recommendations.

***** [DELETE FOLLOWING SECTION IF NOT SPECIFIED] *****

3.4 CAP SHEET TEMPORARY ROOF/VAPOR RETARDER INSTALLATION

A. Install Cap Sheet: Install mineral-surfaced cap sheet in accordance with sheet manufacturer’s current published specifications and recommendations for use with adhered roofing.

1. Mineral Surfaced Cap Sheet Torch-Applied Attachment: Follow cap sheet manufacturer’s recommendations for the appropriate application procedure. Roll each cap sheet into molten bitumen. Limit bitumen bleed-out at laps to 1/4” or less.

2. Mineral Surfaced Cap Sheet Solid-Adhered Attachment: Follow cap sheet manufacturer’s recommendations for the appropriate asphalt application rate and application procedure. Roll each cap sheet into a full mopping of hot steep asphalt (Type III) at the recommended EVT range. Broom in the cap sheet to spread the roofing asphalt for maximum contact. Limit bitumen bleed-out at laps to 1/4” or less.


B. Fit Cap Sheet: Neatly fit cap sheet to all penetrations, projections, curbs, and walls. Extend over all nailers. Cap sheet shall be overlapped a minimum of 3” for side laps and 6” for end laps. Seal at penetrations, projections, curbs and walls with urethane-based sealant. Do not use asphaltic flashing cement.
A. General: Insulation and cover board shall be installed in accordance with the insulation/cover board manufacturer’s current published specifications and recommendations for use with adhered roofing.

B. Install Insulation/Cover Board: Install only as much insulation and cover board as can be primed, sealed, and protected before the end of the day’s work or before the onset of inclement weather.

C. Fit Insulation/Cover Board: Neatly fit insulation/cover board to all penetrations, projections, and nailers. Insulation shall be loosely butted, with gaps not greater than 1/4”. All gaps greater than 1/4” shall be filled with acceptable insulation. Cover board shall be loosely butted, with gaps not greater than 1/4”. All gaps greater than 1/8” shall be filled with primer; all gaps greater than 1/4” shall be filled with polyurethane sealant.

D. Strip In Insulation/Cover Board Joints: Strip all insulation/cover board joints with four inch (4”) wide strip of flashing membrane. Under no circumstances shall the membrane be left unsupported over a space greater than 1/4”.

E. Stagger Insulation/Cover Board Joints: When installing multiple layers of insulation, all joints between succeeding layers shall be staggered a minimum of 6” in each direction.

F. Steel Deck Substrates: Place boards perpendicular to steel deck flutes with edges over flute surface for bearing support. Edges shall be checked so that no edges are left substantially unsupported along the flutes.

G. Drain Sumps: Insulation shall be feathered or tapered to provide a sump area a minimum of 36” x 36” where possible at all drains. Taper insulation around roof drains so as to provide proper slope for drain age. In areas where feathered or tapered insulation leaves insulation core exposed, cover with an appropriate cover board or base sheet/cap sheet assembly to provide a sound and smooth substrate surface.

H. Tapered Insulation: Place the constant thickness first layer and the tapered thickness insulation to the required slope pattern in accordance with insulation manufacturer’s instructions.

I. Mechanical Attachment: Follow insulation/cover board and fastener manufacturers’ recommendations for the appropriate fastener and plate type, size and length. Reference FM approvals for fastening patterns that satisfy FM wind uplift requirements. Typical application is one fastener and plate per 2 square feet of insulation/cover board to be attached. Note: additional fasteners are required in the corner and perimeter regions of the roof. Secure insulation/cover board in accordance with approval requirements.

J. Polyurethane Adhesive Attachment: Follow insulation/cover board and adhesive manufacturers’ recommendations for the appropriate adhesive application rate and application procedure. Under normal application rate, dispense the first bead 3” inside the outside edges of the insulation/cover board to be attached, with sequential beads equidistant. Place the boards onto the roofing adhesive beads. Walk on the boards to spread the roofing adhesive for maximum contact. Periodically walk on the boards until firmly attached. Reference FM approvals for adhesive application patterns that satisfy FM wind uplift requirements. Typical application is a 3/4” bead of roofing adhesive at a rate of one lineal foot per square foot of insulation/cover board to be attached. Note: additional adhesive is required in the corner and perimeter regions of the roof. Secure insulation/cover board in accordance with approval requirements.

K. Asphalt Adhesive Attachment: Follow insulation manufacturer’s recommendations for the appropriate asphalt application rate and application procedure. Set each insulation panel layer in a full mopping of hot steep asphalt (Type III) at the recommended EVT range. Walk on the boards to spread the roofing adhesive for maximum contact. Periodically walk on the insulation boards until firmly attached. Reference FM approvals for asphalt application rates that satisfy FM wind uplift requirements. Typical application is 25 lbs. per 100 square feet of insulation board to be attached. Secure insulation in accordance with approval requirements.
3.6 PRIMER APPLICATION

***** [SELECT PRIMER(S) AS REQUIRED FOR SUBSTRATE(S)] *****

A. General:

1. Mix and apply single and two-component primer in strict accordance with written instructions of Membrane Manufacturer. Use only proprietary materials, as supplied by the membrane manufacturer.

2. The substrate surface must be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth wipe or a combination of methods.

3. Do not install primer on any substrate containing newly applied and/or active asphalt, coal-tar pitch, creosote or penta-based materials unless approved in writing by Membrane Manufacturer. Some substrates may require additional preparation before applying primer.

B. Mixing of Kempertec EP and Kempertec D Primers:

1. Premix primer Component A thoroughly with a spiral agitator or stir stick. Pour entire unit of primer Component B into entire unit of primer Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed or stir stick without creating any bubbles or streaks. DO NOT AERATE. The Primer solution should be a uniform color, with no light or dark streaks present.

2. Do not thin primer. Determine required primer coverage for each substrate material/condition and apply in strict accordance with written instructions of Membrane Manufacturer.

3. Mix only full units of primer. Primer pot life is approximately 30 minutes.

C. Mixing of Kempertec EP5 Primer:

1. Premix primer Component A thoroughly with a spiral agitator or stir stick. Pour entire unit of primer Component B into entire unit of primer Component A and mix the components for approximately 2 minutes with a clean spiral agitator on slow speed or stir stick without creating any bubbles or streaks. DO NOT AERATE. The Primer solution should be a uniform color, with no light or dark streaks present.

2. Do not thin primer. Determine required primer coverage for each substrate material/condition and apply in strict accordance with written instructions of Membrane Manufacturer.

3. Mix only full units of primer. Primer pot life is approximately 20 minutes.

D. Mixing of Kempertec R Primer:

1. Premix primer Component A within clear pouch to obtain consistent appearance. Remove separation cord. Knead primer Component B into Component A and mix the components for approximately 1 minute. The Primer solution should be a uniform color, with no light or dark streaks present.

2. Do not thin primer. Determine required primer coverage for each substrate material/condition and apply in strict accordance with written instructions of Membrane Manufacturer.

3. Mix only full units of primer. Primer pot life is approximately 5-10 minutes.

E. Application of Primer:

1. After mixing, apply the primer with a roller or brush evenly onto the surface in a cross directional method, or utilizing the pour and spread method to fully cover the substrate. Porous substrates may require an adjustment to the primer application rate or multiple coats to achieve proper pore saturation.

2. For EP and EP5 Primer applications, broadcast Kemperol Surfacing sand (0, #18) at the rate of 50 lbs. / 100 ft² into the wet primer to increase surface area and enhance adhesion. Remove excess sand after primer has fully cured prior to membrane application.

3. Curing time is approximately 12-16 hours for D and EP primers and approximately 3-4 hours for R and EP5 primers. Kemperol membrane may be applied when the primer is completely dry and without tack. Do not apply Kemperol membrane to tacky or wet primer.

4. Exposure of primer in excess of eight (8) days or premature exposure to moisture may require abrasion of contaminated surface and application of new primer coat.
A. Disposal of Primer:

1. Cured primer may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

2. Uncured primer is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulation. Do not through uncured resin away.

A. General:

1. It is recommended to apply the waterproofing membrane immediately following full curing of the primer in order to obtain the best bond between primer and membrane.

2. Mix and apply cold fluid-applied reinforced polyurethane waterproofing membrane in strict accordance with written instructions of Membrane Manufacturer. Use only proprietary membrane resins and materials, as supplied by the membrane manufacturer.

3. The primed substrate surface shall be dry, with any remaining dust or loose particles removed using clean, dry, oil-free compressed air, industrial vacuum, cloth-wipe or a combination.

4. Protect all areas where membrane has been installed. Do not work off installed membrane during application of remaining work before forty-eight (48) hours of curing. Movement of materials and equipment across installed membrane is not acceptable. If movement is necessary, provide complete protection of affected areas.

5. Closely follow the Membrane Manufacturer's recommendation for hot and cold weather application. Monitor surface and ambient temperatures, including the effects of wind chill.

B. Mixing of Kemperol 2K-PUR Resin:

1. Mix resin Component A (cream formulation) with a spiral agitator until the liquid is a uniform cream color. If the ambient temperature is below 50°F (10°C), then a weather related additive should be combined and mixed into the Component A.

   a) Accelerator should be added to resin Component A when the ambient temperature is 50°F (10°C) and below. The accelerator should be mixed with the spiral agitator for 2 minutes or until both liquids are thoroughly blended.

2. Pour entire resin Component B into entire resin Component A and thoroughly mix the components with a clean spiral agitator. The Resin solution should be a uniform color, with no light or dark streaks present. Mix only full units, do not break down units.

3. Resin pot life is approximately 30 minutes.

C. Application of Resin/Fleece:

1. After the Resin is mixed, using a Kemperol roller nap or brush, apply 2/3 of the resin liberally and evenly onto the surface. Covering one working area at a time, between 10 - 15 ft².

2. Roll the Kemperol Fleece directly into the Resin, making sure the SMOOTH SIDE IS FACING UP (natural unrolling procedure), avoiding folds and wrinkles. The fleece will begin to rapidly saturate with the liquid resin mix. Use the roller or brush to work the resin into the fleece, saturating from the bottom up, and eliminating air bubbles, wrinkles, etc. It is important to correct these faults before the resin cures. White spots are indications of unsaturated fleece or lack of adhesion.

3. Apply the remaining 1/3 of the resin to the top of fleece to complete the saturation. Rolling the final coat of resin onto the fleece should result in a glossy appearance. The fleece can only hold so much resin and all excess should be rolled forward to the unsaturated portion of the fleece. The correct amount of resin will completely saturate the fleece and no white color will be visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

4. Prevent contact between mixed/unmixed resin and new-existing membrane. If any unmixed resin contacts membrane surface remove immediately and clean thoroughly with a cloth rag.

6. At membrane tie-offs, clean in-place membrane with MEK when resin has cured. Allow solvents to fully evaporate before application of new resin. **DO NOT APPLY PRIMER TO EXISTING KEMPEROL MEMBRANE.**
At all fleece seams, allow a 2” (5 cm) overlap for all side joints and a 4” (10 cm) overlap for all end joints.

A. Disposal of Resin:

1. Cured resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components.

2. Uncured resin is considered a hazardous material and must be handled as such, in accordance with local, state and federal regulation. Do not throw uncured resin away.

A. General:

1. Install flashing system in accordance with the requirements/recommendations of the Membrane manufacturer and as depicted on standard drawings and details. Provide system with base flashing, edge flashing, penetration flashing, counter flashing, and all other flashings required for a complete watertight system.

2. Wherever possible, install the flashings before installing the field membrane to minimize foot traffic over newly installed field membrane.

3. All membrane flashings shall be installed concurrently with the waterproofing membrane as the job progresses. Temporary flashings are not allowed without prior written approval from the Membrane manufacturer. Should any water penetrate the new waterproofing membrane because of incomplete flashings, the affected area shall be removed and replaced at the contractor’s expense.

4. Provide a minimum vertical height of 8” for all flashing terminations. Flashing height shall be at least as high as the potential water level that could be reached as a result of a deluging rain and/or poor slope. Do not flash over existing through-wall flashings, weep holes and overflow scuppers.

5. All flashings shall be terminated as required by the Membrane Manufacturer.

6. Alkalinity surface protection consisting of one application of EP primer and one application of approved broadcast mineral aggregate surfacing shall be applied wherever stone, concrete, or masonry elements will be placed directly over the flashing.

B. Metal Flashing – General:

1. Metal flashings shall be fabricated in accordance with the current recommendations of SMACNA and in accordance with standard drawings and project details.

2. Metal flashing flanges to which membrane is to be bonded shall be a minimum of four (4) inches in width, and secured to the substrate or wood nailers six (6) inches on center staggered with fasteners appropriate to the substrate type. The flanges shall be provided with a roughened surface that has been cleaned of all oil and other residue.

3. Metal edges that will be overlaid with membrane shall be provided with a 1/4" min. hemmed edge.

4. Apply primer, resin, and fleece to metal flange, extending membrane to outside face of metal edging, and to vertical face of metal base/curb flashing.

C. Membrane Flashing – General:

1. Membrane flashings shall be fabricated with primer appropriate for the substrate surface, resin of the same base chemical type as the field membrane, and fleece of the same weight as the field membrane unless specified otherwise.

2. Primer, resin, and fleece mixing and application methods as specified for field membranes are also suitable for membrane flashing.

3. Fleece shall overlap 2” (5 cm) minimum for all joints. Fleece shall be cut neatly to fit all flashing conditions without a buildup of multiple fleece layers. Work wet membrane with a brush or roller to eliminate blisters, openings, or lifting at corners, junctions, and transitions.
D. Pipes, Conduits, and Unusually Shaped Penetrations:

1. Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

E. Drains and Scuppers:

1. Acceptable drain and scupper materials are cast iron, cast aluminum, copper, hard PVC and ABS.

2. Flashing material shall extend four (4) inches minimum onto drain or scupper flange and into drain/scupper body when possible.

3. Install clamping ring if provided as part of the drain or scupper design. Install a strainer basket to prevent debris from clogging the drainage line.

F. Hot Stacks:

1. Protect the membrane components from direct contact with steam or heat sources when the in-service temperature exceeds 170 degrees F. In all such cases flash to an intermediate “cool” sleeve.

2. Fabricate “cool” sleeve in the form of a flanged metal cone using galvanized metal, mechanically attached to the structure or wood nailers.

3. Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

G. Flexible Penetrations:

1. Provide a weathertight gooseneck of round cross-section for each penetration or group of penetrations. Set in water cut-off mastic and secure to the structural substrate.

2. Flashing is typically constructed as a two part assembly consisting of a vertical wrap and a horizontal target patch. There must be a minimum of a two (2) inch (5 cm) overlap between vertical and horizontal flashing components.

H. Walls, Curbs and Base Flashings:

1. Wall, curb and base flashings shall be installed to solid substrate surfaces only. Adhering to cementitious stucco, synthetic stucco, wood siding, metal siding, or other similar materials is not acceptable.

2. Reinforce all transition locations and other potential wear areas with a four (4) inch wide membrane strip evenly positioned over the transition prior to installing the exposed flashing layer.

3. Reinforce all inside and outside corners with a four (4) inch diameter conical piece of membrane prior to installing the exposed flashing layer.

4. All pins, dowels and other fixation elements shall be flashed separately with a vertical flashing component prior to installing the exposed flashing layer.

5. Extend flashing a minimum of four (4) inches onto the field substrate surface.

I. Drip Edges and Gravel Stops:

1. Metal drip edges and gravel stops shall be installed to solid substrate surfaces or wood nailers only. Securement to gypsum-based panels, cementitious stucco, synthetic stucco, wood siding, metal siding, metal coping, or other similar materials is not acceptable.

2. Before installing drip edges and gravel stops extend the membrane all the way to the edge of the structure. Once the membrane has fully cured install the drip edge or gravel stop over membrane. Prepare, prime and strip in the metal flange with a separate 8” wide strip of membrane adhered to both the securing flange and to the field membrane. Clean the field membrane prior to stripping in the flange. If the field membrane has been exposed for over 48 hour lightly abrade the surface of the membrane and clean with a solvent. Do not apply primer to the existing field membrane.
For conditions where water infiltration behind the exposed drip edge or gravel stop face is possible, install a separate membrane layer positioned behind the face area and extending a minimum of four (4) inches past the securement flange onto the field substrate prior to installing the drip edge or gravel stop.

J. Field Fabricated Control or Expansion Joint Flashing:

1. Control or expansion joints in excess of two (2) inches in width and all expansion joints subject to vehicular traffic require the use of a separate engineered joint system.

2. Grind or otherwise bevel the inside edges of the joint opening to provide a smooth transition edge for the fleece.

3. Flashing typically consists of a fully saturated membrane bottom layer looped into the joint as a cradle, a compressible foam or rubber insert at 25% compression fitted into the joint with half the compressible material protruding above the joint, and a membrane top layer applied over the joint. Extend both fleece layers four (4) inches minimum onto the field substrate on both sides of the joint. An alternate approach is to insert the compressible foam or rubber insert into the joint completely sitting in the membrane cradle and fill it with a urethane trafficable grade sealer.

K. Electrical Conduit, Gas Lines and Lightning Protection

1. Supports for electrical conduit and gas lines greater than one (1) inch in diameter require the use of a separate engineered support system.

2. Supports for electrical conduit and gas lines one (1) inch or less in diameter, and bases for lightning protection rods and cable, can be adhered directly to the membrane surface with a single-component, high quality polyurethane sealant.

A. Membrane must be clean and dry, and free of all contaminants that may interfere with the adhesion of the surfacing and coating to the membrane surface.

B. Membrane exposed less than 48 hours prior to application of surfacing and coating materials does not require special surface preparation. It is highly recommended that all surfacing and coating materials be applied to the membrane surface within 48 hours.

C. Membrane exposed longer than 48 hours will require sanding/scuffing of the surface to remove the hard gloss finish, followed by an MEK or acetone solvent wipe.

***** [SELECT SURFACING METHOD(S) AS SPECIFIED] *****

A. Aggregate Finish Surfacing

1. Where specified, provide and install approved kiln-dried silica sand, or other approved mineral surfacing to achieve an aesthetic and/or non-skid surface.

2. Pre-mix single-component and two-component coatings prior to application to achieve an even consistency.

3. Broadcast specified and approved sand or aggregate in excess into a bonding coat application of Membrane Manufacturer's approved urethane-based or acrylic-based aggregate coating system applied over clean, cured membrane at the manufacturer's recommended application rate. Aggregate shall be applied to excess to obtain uniform and full coverage.

4. Following minimum 24 hour cure time remove loose/unembedded mineral aggregate by blowing with oil-free compressed air or with a vacuum. Re-broadcast clean mineral aggregate as required to provide full embedment and coverage of membrane.
3.11 TRAFFIC SURFACING

5. Seal aggregate surface with a sealing coat application of Membrane Manufacturer's approved aggregate coating, applied at the manufacturer’s recommended application rate. After completion of surfacing, avoid any traffic for a minimum of three (3) days to allow for surfacing to cure.

B. Coating-Type Finish Surfacing

1. Where specified, provide and install Membrane Manufacturer's approved urethane-based or acrylic-based coating applied over clean, fully cured membrane at the manufacturer’s recommended application rate.

2. Pre-mix single-component and two-component coatings prior to application to achieve an even consistency and color. Mix thoroughly for approximately 2 minutes with a clean spiral agitator or stir stick without creating any bubbles or streaks. DO NOT AERATE.

3. Apply coating at the manufacturer’s recommended application rate. Two coating applications are recommended for best coverage and appearance. After completion of coating, avoid any traffic for a minimum of two (2) days to allow for surfacing to cure.

C. Alkalinity Protection

1. Where placement of concrete, mortar or adhesive setting beds are required over sections of the waterproofing membrane or flashing, apply manufacturer’s epoxy primer/coating at the manufacturer’s recommended coverage rate, with broadcast to excess of kiln-dried silica sand into wet primer/coating.

2. Protection shall extend a minimum of one (1) foot past the concrete form on all sides.

3. Provide continuous cleaning with water and brush to eliminate settlement of concrete residues on in-place waterproofing membrane adjacent to area of concrete placement.

D. Adhesion Key:

1. Where placement of non-cementitious material such as asphalt pavement is required over sections of the waterproofing membrane or flashing, apply manufacturer’s epoxy primer/coating at the manufacturer’s recommended coverage rate, with broadcast to excess of kiln-dried silica sand into wet primer/coating.

***** [DELETE FOLLOWING SECTION IF NOT REQUIRED] *****

***** [TRAFFIC SURFACING IS NOT SUITABLE FOR FLASHINGS] *****

[DO NOT USE TRAFFIC SURFACING OVER INSULATED ASSEMBLY OR WOOD SUBSTRATES FOR USE OVER CONCRETE SUBSTRATES ONLY]

A. Mixing of Kemperdur TC Traffic Coating

1. Pre-mix Component A (white formulation) with a spiral Kemperol agitator for 1 minute, until the liquid is a uniform color and all solids that may have settled to the bottom of the can have been mixed. When working on a sloped area, greater than 3%, such as a ramps add Kempertec TX Thixotropic additive to Component A before adding Component B.

2. Add Component B (dark brown formulation) to Component A (white formulation) in a separate clean mixing pail with a spiral agitator for 1 minute, until the liquid is a uniform dark beige color without light or dark streaks.

3. Gradually add Component C (white graded fillers) to the liquid while mixing continuously for an additional 1 minute until a smooth, lump free mixture is produced.

B. Application of Surfacing and Aggregate

1. Empty mixing bucket of all Kemperdur TC Traffic Coating mix onto the prepared surface and spread with a ¼” x ¼” x ¼” notched metal trowel at the manufacturer’s specified coverage rate.

2. Allow the surfacing mix to self-level and reach an initial set for 10-20 minutes until material will retain a peak after being touched by a finger.
3. Gradually add Component C (white graded fillers) to the liquid while mixing continuously for an additional 1 minute until a smooth, lump free mixture is produced.

B. Application of Surfacing and Aggregate

1. Empty mixing bucket of all Kemperdur TC Traffic Coating mix onto the prepared surface and spread with a ¼” x ¼” x ¼” notched metal trowel at the manufacturer's specified coverage rate.

2. Allow the surfacing mix to self-level and reach an initial set for 10-20 minutes until material will retain a peak after being touched by a finger.

3. Broadcast approved aggregate to excess into Kemperdur TC Traffic Coating until a uniform dry aggregate layer has been achieved, at the rate of approximately 100 lbs. /100 ft². Aggregate will initially sink into TC, requiring the application of additional aggregate until wet spots are no longer evident and only dry aggregate is visible.

4. Allow the aggregate-filled surfacing to cure for approximately 4 hours, and then remove excess aggregate by brooming and vacuuming.

C. Sealing

1. Apply specified Kemperdur finish sealer at the manufacturer's specified coverage rate to provide a sealed, maintainable surface finish.

2. After completion of mineral aggregate surfacing, avoid any traffic for a minimum of three (3) days.

A. Contractor shall be responsible to ensure that moisture does not damage any completed section of the new waterproofing system. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition. All temporary closures shall be made as recommended or required by the membrane manufacturer.

A. Upon completion of waterproofing and flashings (including all associated work), institute appropriate procedures for surveillance and protection of roofing during remainder of construction period. Protect all areas where membrane has been installed.

A. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after job completion.

B. Notification of Completion: Notify the membrane manufacturer of job completion and schedule a final inspection date.

C. Final Inspection: A meeting at the completion of the project with the membrane manufacturer’s technical field representative to evaluate the completed installation of the field and flashing membrane. All punch list items are to be completed prior to the scheduled meeting.

***** [DELETE EFVM REQUIREMENT IF UNNECESSARY] *****

D. Electronic Field Vector Mapping (EFVM) test to be scheduled through the membrane manufacturer a minimum two weeks prior to the test and completed by an approved testing company. The test is to be completed prior to the installation of the overburden, but after the membrane receives a final inspection. All located deficiencies are to be repaired and followed by a re-inspection by the membrane manufacturer.

E. Flood Test, an alternate to an EFVM test. A flood test of the completed membrane and flashing system shall be conducted prior to the installation of any overburden/surfacing. The flood test shall be of a 24 hr. minimum duration, and shall apply a water head of 2” over the entire application area. Any incidents of water entry shall be evaluated and all necessary repairs conducted, followed by an additional flood test.
3.15 DRAINAGE/PROTECTION MAT INSTALLATION

A. Place the drainage mat fabric side up on top of the finished waterproofing membrane. Secure the drainage mat in place by placing temporary ballast on top of the drainage mat.

B. Connect adjacent panels at the longitudinal edge by pulling the filter fabric back to expose the flange. Butt one panel edge to the edge of the adjacent panel. Panel ends are to be butted in the same manner. Tape the fabric overlaps, and seal the butt joints with tape as well. Overlap fabric in the direction of water flow. Cover all terminal edges with the filter fabric flap by tucking the fabric behind the core.

C. The drainage mat should be channeled into an internal drain or perimeter drain system. Create openings in the drainage core to correspond with all discharge holes in the drain at the structural deck level. Fabric must be left intact at these holes to prevent intrusion of soil, grout, sand, or concrete into the drainage core.

D. At roof penetrations, cut the drainage core around the protrusion, cut an X in the fabric, and tape the fabric around the protrusion to prevent intrusion of overburden materials into the core.

3.16 EXTRUDED POLYSTYRENE INSULATION INSTALLATION

A. General: Insulation shall be installed in accordance with the insulation manufacturer's current published specifications and recommendations for use in an above-membrane application.

B. Install Insulation: Install only as much insulation as can be covered with overburden or otherwise secured in place before the end of the day's work or before the onset of inclement weather.

C. Fit Insulation: Neatly fit insulation to all penetrations and projections. Insulation shall be loosely butted, with gaps not greater than 1/4”.

3.17 FILTER FABRIC INSTALLATION

A. Roll out filter fabric over the extruded polystyrene insulation, avoiding wrinkles. Overlap all side and end laps by 12”.

B. Cut filter fabric neatly around all penetrations and projections.

3.18 SEPARATION MAT INSTALLATION

A. Install the separation mat on top of the finished waterproofing membrane or extruded polystyrene insulation. Provide 4” overlaps.

B. Extend the separation mat vertically to just above the height of the growing medium.

C. Cut the water separation mat at the perimeter and penetration locations so as to neatly fit the mat at all flashing locations.

3.19 WATER RETENTION/PROTECTION MAT INSTALLATION

A. Place the drainage mat fabric side up on top of the finished waterproofing membrane. Secure the drainage mat in place by placing temporary ballast on top of the drainage mat. Dimple openings must be facing up.

B. Connect adjacent panels at the longitudinal edge by pulling the filter fabric back to expose the flange. Butt one panel edge to the edge of the adjacent panel. Panel ends are to be butted in the same manner. Tape the fabric overlaps, and seal the butt joints with tape as well. Overlap fabric in the direction of water flow. Cover all terminal edges with the filter fabric flap by tucking the fabric behind the core.
C. The water retention mat should be channeled into an internal drain or perimeter drain system. Create openings in the drainage core to correspond with all discharge holes in the drain at the structural deck level. Fabric must be left intact at these holes to prevent intrusion of soil, grout, sand, or concrete into the drainage core.

D. At roof penetrations, cut the drainage core around the protrusion, cut an X in the fabric, and tape the fabric around the protrusion to prevent intrusion of overburden materials into the core.

***** [EXPAND OR DELETE SPECIFIC OVERBURDEN SECTION AS REQUIRED] *****

A. General: Pavers, stone ballast, or wood decking shall be installed in accordance with the overburden manufacturer's current published specifications and recommendations for use in an above-membrane Plaza application.

B. Install Overburden: Install overburden neatly, level and even. Cracked, broken or otherwise damaged overburden materials must be removed and discarded. Fit overburden neatly around all penetrations and projections, and at the perimeter. Ensure that overburden is properly supported to provide even weight distribution to underlying assembly.

***** [EXPAND OR DELETE SPECIFIC OVERBURDEN SECTION AS REQUIRED] *****

A. General: Paving stones and tiles shall be installed in accordance with the overburden manufacturer's current published specifications and recommendations for use in an above-membrane plaza, terrace, fountain, or flooring application.

B. Membrane Preparation: Install adhered overburden to waterproofing membrane that has been provided with alkalinity/adhesion key surfacing. Utilize adhesives/mortars approved by the membrane manufacturer. Tile adhesive shall meet and exceed ANSI requirements for adhesion shear strength.

C. Install Overburden: Install overburden neatly, level and even. Cracked, broken or otherwise damaged overburden materials must be removed and discarded. Fit overburden neatly around all penetrations and projections, and at the perimeter. Ensure that overburden is properly supported to provide even weight distribution to underlying assembly.

***** [EXPAND OR DELETE SPECIFIC OVERBURDEN SECTION AS REQUIRED] *****

A. General: Irrigation systems, dirt or other growing media, and plantings shall be installed in accordance with the irrigation system manufacturer's current published specifications and recommendations for use in an above-membrane garden application.

B. Install Overburden: Install overburden neatly, level and even. Dead, broken or otherwise damaged overburden materials must be removed and discarded. Fit overburden neatly around all penetrations and projections, and at the perimeter. Protect plantings from damage and provide with sufficient water until entire installation is complete.

A. Correction of Work:

1. Work that does not conform to specified requirements including tolerances, slopes, and finishes shall be corrected and/or replaced. Any deficiencies of membrane application, termination and/or protection as noted during the Membrane Manufacturer's inspections shall be corrected and/or replaced at Contractor's expense.

B. Clean-Up:

1. Site clean-up, including both interior and exterior building areas that have been affected by construction, shall be restored to pre-construction condition.

END OF SECTION
# Index of Standard Details

## Assembly Details

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>Non-Insulated Waterproofing Assembly</td>
</tr>
<tr>
<td>A-3</td>
<td>Non-Insulated Waterproofing Assembly w/ Fully Adhered Cap Sheet</td>
</tr>
<tr>
<td>A-5</td>
<td>Insulated Waterproofing Assembly w/ Foam Insulation &amp; Coverboard</td>
</tr>
<tr>
<td>A-5B</td>
<td>Plaza Waterproofing Assembly w/ Foam Insulation &amp; Coverboard</td>
</tr>
<tr>
<td>A-8</td>
<td>Roof Recovery Assembly</td>
</tr>
<tr>
<td>A-11</td>
<td>Insulated Roof Recovery Waterproofing Assembly w/ Foam Insulation &amp; Coverboard</td>
</tr>
<tr>
<td>A-13</td>
<td>PRMA Waterproofing Assembly w/ Overburden</td>
</tr>
<tr>
<td>A-15</td>
<td>PRMA Waterproofing Assembly w/ Fully Adhered Cap Sheet</td>
</tr>
<tr>
<td>A-16</td>
<td>Waterproofing Assembly w/ Overburden</td>
</tr>
<tr>
<td>A-18</td>
<td>Plaza Waterproofing Assembly w/ Pedestal-Mounted Paver Overburden</td>
</tr>
<tr>
<td>A-19</td>
<td>Plaza Waterproofing Assembly w/ Solid Overburden</td>
</tr>
<tr>
<td>A-21</td>
<td>Balcony Waterproofing w/ Surfacing Assembly</td>
</tr>
<tr>
<td>A-22</td>
<td>Balcony Waterproofing Assembly w/ Overburden</td>
</tr>
<tr>
<td>A-23</td>
<td>Balcony Waterproofing Assembly w/ Insulation &amp; Overburden</td>
</tr>
<tr>
<td>A-24</td>
<td>Planter Box Waterproofing Assembly</td>
</tr>
<tr>
<td>A-25</td>
<td>Landscape Waterproofing Assembly</td>
</tr>
<tr>
<td>A-26</td>
<td>Landscape Waterproofing Assembly w/ Insulation</td>
</tr>
<tr>
<td>A-27</td>
<td>Split-Slab Below-Grade Waterproofing Assembly</td>
</tr>
<tr>
<td>A-28</td>
<td>Below-Grade Waterproofing Assembly w/ Overburden</td>
</tr>
<tr>
<td>A-29</td>
<td>Interior Floor Waterproofing Assembly</td>
</tr>
<tr>
<td>A-30</td>
<td>Interior Floor Waterproofing Assembly w/ Overburden</td>
</tr>
<tr>
<td>A-31</td>
<td>Interior Floor Waterproofing Assembly w/ Overburden (Kemperol 022)</td>
</tr>
</tbody>
</table>

## High Wind Application Details

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW-1</td>
<td>Roof Zone Layout</td>
</tr>
<tr>
<td>HW-2</td>
<td>Urethane Adhesive Ribbon Insulation Attachment Pattern</td>
</tr>
<tr>
<td>HW-3</td>
<td>Fastener &amp; Plate Insulation Attachment Pattern</td>
</tr>
<tr>
<td>HW-4</td>
<td>Roof Edge Securement</td>
</tr>
</tbody>
</table>

## Insulation Details

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA-1</td>
<td>Diamond-In-Square Insulation Attachment Pattern</td>
</tr>
<tr>
<td>IA-2</td>
<td>Urethane Adhesive Ribbon Insulation Attachment Pattern</td>
</tr>
<tr>
<td>IA-3</td>
<td>Cover Board Joint Stripping-In Detail</td>
</tr>
</tbody>
</table>

## Base/Wall Flashing Details

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>One Ply Base Flashing</td>
</tr>
<tr>
<td>B-1A</td>
<td>One Ply Base Flashing w/ Cut-In Reglet</td>
</tr>
<tr>
<td>B-1B</td>
<td>One Ply Base Flashing w/ Counterflash</td>
</tr>
<tr>
<td>B-2A</td>
<td>Two Ply Base Flashing w/ Cut-In Reglet</td>
</tr>
<tr>
<td>B-2B</td>
<td>Two Ply Base Flashing w/ Counterflash</td>
</tr>
<tr>
<td>B-3</td>
<td>Wall Flashing w/ Coping Cap</td>
</tr>
<tr>
<td>B-4</td>
<td>Concrete/Masonry Wall Flashing w/ Masonry Coping Stone</td>
</tr>
<tr>
<td>B-5</td>
<td>Two Ply Masonry Wall Flashing without Coping Cap</td>
</tr>
<tr>
<td>B-5A</td>
<td>One Ply Masonry Wall Flashing without Coping Cap</td>
</tr>
<tr>
<td>B-6</td>
<td>Planter Box Waterproofing Concrete/Masonry Knee Wall</td>
</tr>
<tr>
<td>B-6A</td>
<td>Planter Box (Engaged) Waterproofing Flashing</td>
</tr>
<tr>
<td>B-6B</td>
<td>Planter Box Waterproofing Concrete/Masonry Building Wall</td>
</tr>
<tr>
<td>B-7</td>
<td>One Ply Base Flashing w/ Counterflash (Low Flashing)</td>
</tr>
<tr>
<td>B-10</td>
<td>Thru-Wall Flashing Detail</td>
</tr>
</tbody>
</table>
## Edge Termination Details
- E-1 Gravel Stop Roof Edge Flashing
- E-1A Raised Gravel Stop Flashing
- E-2 Drip Edge Flashing
- E-2A Raised Drip Edge Flashing
- E-3 Gutter Edge Flashing

## Drain Details
- D-1 Roof Drain Flashing
- D-2 Scupper Drain Flashing
- D-3 Thru-Wall Scupper Flashing
- D-3A Thru-Wall Flush Scupper Flashing
- D-4 Plaza Drain Flashing
- D-5 Flat Grate Drain Flashing
- D-6 Planter Drain Flashing
- D-7 Trench Drain Flashing

## Penetration Details
- P-1 Field Fabricated Pipe Penetration Flashing
- P-2 Field Fabricated Warm Pipe Penetration Flashing
- P-3 Irregular Penetration Angle Flashing
- P-4 Irregular Penetration Wide Flange Flashing
- P-5 Curb/Pad Encapsulation Flashing
- P-10 Irregular Penetration Uni-Strut Channel Flashing

## Expansion Joint Flashing Details
- J-1 Horizontal to Vertical Transition Expansion Joint Flashing
- J-1A Horizontal to Vertical Transition Expansion Joint w/Cut In Reglet
- J-1B Horizontal to Vertical Transition Expansion Joint w/Counterflashing
- J-2 Horizontal (In-Line) Waterproofing Expansion Joint
- J-3 Horizontal (In-Line) Waterproofing Expansion Joint w/Sealant
- J-4 Flashing at Vehicular Traffic Joint

## Miscellaneous Flashing Detail
- M-1 Field Fabricated Outside Corner Flashing
- M-2 Field Fabricated Inside Corner Flashing
- M-3 Door Sill Flashing
- M-4 Tie-In to Modified Bitumen/BUR Membrane
- M-5 Tie-In to Modified Bitumen/BUR Membrane
- M-6 Tie-In to Modified Bitumen/BUR Membrane
- M-7 Pedestrian Curb Flashing (2-Ply)
- M-8 Vehicular Curb Flashing (3-Ply)
- M-10 Pivot Hinge Box Flashing
- M-11 Butt Joint Flashing - Field
- M-12 Stair Tread Nosing
- M-13 Membrane Repair
- M-14 Membrane Repair with Surfacing
- M-15 Gutter Lining Detail
- M-16 Standing Seam Metal Roof Detail

**Disclaimer:** All Kemper System America, Inc. Guide Specifications are provided as a service to the specification community. It is expected that the Guide Specifications will be edited and expanded as appropriate to address specific project requirements, and will be made part of a project manual. It remains the responsibility of the design professional to ensure that the information contained in a Guide Specification is sufficient and suitable for the project requirements.
NON-INSULATED WATERPROOFING ASSEMBLY
W/FULLY ADHERED CAP SHEET

KEMPEROL MEMBRANE

ACCEPTABLE KEMPERDUR AGGREGATE SURFACING OR COATING (IF REQUIRED)

KEMPETEC PRIMER APPLIED TO CAP SHEET (IF REQUIRED)

ACCEPTABLE SUBSTRATE PREPARED PER MANUFACTURER REQUIREMENTS

APPROVED ASPHALT PRIMER (IF REQUIRED)

APPROVED FULLY ADHERED MINERAL-SURFACED CAP SHEET SET IN TYPE III ASPHALT, PEEL 
& STICK OR TORCH-APPLIED (AS APPROPRIATE)
INSULATED WATERPROOFING ASSEMBLY
W/FOAM INSULATION & COVERBOARD

ACCEPTABLE KEMPERDUR AGGREGATE
SURFACING OR COATING
(IF REQUIRED)

ACCEPTABLE RIGID INSULATION
SECURED/ADHERED TO SUBSTRATE

APPROVED SUBSTRATE PREPARED
PER MANUFACTURER REQUIREMENTS

KEMPEROL MEMBRANE
KEMPERTEC PRIMER
APPLIED TO COVERBOARD

ACCEPTABLE COVERBOARD
ADHERED TO INSULATION

ACCEPTABLE URETHANE
ADHESIVE
ACCEPTABLE KEMPERDUR AGGREGATE SURFACING OR COATING (IF REQUIRED)

KEMPEROL MEMBRANE

EXISTING ASPHALT BUILT-UP OR MODIFIED BITUMEN ROOF PREPARED PER KEMPER REQUIREMENTS.

KEMPERTEC PRIMER APPLIED TO SUBSTRATE.

EXISTING RIGID INSULATION OR OVERLAYMENT SECURED TO SUBSTRATE. (TYPICAL)

EXISTING SUBSTRATE
ACCEPTABLE OVERBURDEN
(Concrete slab, concrete pavers, tile in setting bed, wood decking)

ACCEPTABLE DRAINAGE MAT (OPTIONAL)

KEMPEROL MEMBRANE

ACCEPTABLE GEOTEXTILE FILTER FABRIC (AS REQUIRED)

ACCEPTABLE EXTRUDED POLYSTYRENE INSULATION

ACCEPTABLE ALKALINITY PROTECTION (AS REQUIRED)

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS.

KEMPERTEC PRIMER APPLIED TO SUBSTRATE
ACCEPTABLE OVERBURDEN (Concrete slab, concrete pavers, tile in setting bed, wood decking)

ACCEPTABLE DRAINAGE MAT (OPTIONAL)

KEMPOL MEMBRANE

ACCEPTABLE GEOTEXTILE FILTER FABRIC (AS REQUIRED)

ACCEPTABLE EXTRUDED POLYSTYRENE INSULATION

KEMPERTEC PRIMER APPLIED TO SUBSTRATE.

APPROVED SUBSTRATE PREPARED AND PRIMED PER MANUFACTURER REQUIREMENTS

APPROVED FULLY ADHERED MINERAL-SURFACED CAP SHEET SET IN TYPE III ASPHALT, PEEL & STICK OR TORCH APPLIED (AS APPROPRIATE)
WATERPROOFING ASSEMBLY W/OVERBURDEN

ACCEPTABLE OVERBURDEN (CONCRETE SLAB)

KEMPEROL MEMBRANE

ACCEPTABLE ALKALINITY PROTECTION

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS

KEMPERTEC PRIMER APPLIED TO SUBSTRATE
ACCEPTABLE OVERBURDEN
(Concrete pavers over pedestals)

ACCEPTABLE DRAINAGE MAT (OPTIONAL)

KEMPEROL MEMBRANE

KEMPERTEC PRIMER APPLIED TO SUBSTRATE.

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS.
ACCEPTABLE OVERBURDEN (STONE, CONCRETE PAVERS, TILE) OVER CEMENTITIOUS SETTING BED.

ACCEPTABLE DRAINAGE MAT (OPTIONAL)

ACCEPTABLE ALKALINITY PROTECTION

KEMPETEC PRIMER APPLIED TO SUBSTRATE.

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS.

KEMPEROL MEMBRANE
ACCEPTABLE KEMPERDUR SEALER/FINISH

KEMPEROL MEMBRANE

ACCEPTABLE KEMPERDUR TRAFFIC COATING SYSTEM W/AGGREGATE

KEMPETEC PRIMER APPLIED TO SUBSTRATE

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS
BALCONY WATERPROOFING ASSEMBLY
W/OVERBURDEN

ACCEPTABLE OVERBURDEN
(CONCRETE SLAB, CONCRETE PAVERS,
TILE IN SETTING BED,
WOOD DECKING)

KEMPEROL MEMBRANE

ACCEPTABLE DRAINAGE
MAT (OPTIONAL)

ACCEPTABLE ALKALINITY
PROTECTION (AS REQUIRED)

APPROVED SUBSTRATE PREPARED
PER KEMPER REQUIREMENTS.

KEMPERTEC PRIMER
APPLIED TO SUBSTRATE
ACCEPtable OVERBURNED (CONCRETE SLAB, CONCRETE PAVERS, TILE IN SETTING BED, WOOD DECKING)

ACCEPtable DRAINAGE MAT (OPTIONAL)

KEMPEROL MEMBRANE

ACCEPTABLE GEOTEXTILE FILTER FABRIC

ACCEPTABLE EXTRUDED POLYSTYRENE INSULATION

ACCEPTABLE ALKALINITY PROTECTION (AS REQUIRED)

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS

KEMPERTEC PRIMER APPLIED TO SUBSTRATE
Acceptable Overburden (Earthen Bed)

Acceptable Drainage Mat

Kemperol Membrane

Kempertec Primer Applied to Substrate

Approved Substrate Prepared Per Kemper Requirements
LANDSCAPE WATERPROOFING ASSEMBLY
W/INSULATION

ACCEPTABLE OVERBURDEN
(SELECTED PLANTS, EARTHEN BED)

ACCEPTABLE DRAINAGE/
IRRIGATION MAT

KEMPEROL MEMBRANE

ACCEPTABLE GEOTEXTILE
FILTER FABRIC

ACCEPTABLE EXTRUDED
POLYSTYRENE INSULATION

KEMPERTEC PRIMER APPLIED
TO SUBSTRATE.

APPROVED SUBSTRATE PREPARED
PER KEMPER REQUIREMENTS.
SPLIT-SLAB BELOW-GRADE WATERPROOFING ASSEMBLY

ACCEPTABLE OVERBURDEN (CONCRETE SLAB)

ACCEPTABLE ALKALINITY PROTECTION

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS

KEMPERTEC PRIMER APPLIED TO SUBSTRATE

KEMPEROL MEMBRANE
ACCEPTABLE OVERBURDEN (CONCRETE SLAB, EARTHEN FILL)

ACCEPTABLE DRAINAGE MAT (OPTIONAL)

KEMPEROL MEMBRANE

ACCEPTABLE GEOTEXTILE FILTER FABRIC (AS REQUIRED)

ACCEPTABLE EXTRUDED POLYSTYRENE INSULATION (OPTIONAL)

ACCEPTABLE ALKALINITY PROTECTION (AS REQUIRED)

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS.

KEMPERTEC PRIMER APPLIED TO SUBSTRATE
KEMPERDUR COATING/FINISH

KEMPEROL MEMBRANE

KEMPERTEC PRIMER APPLIED TO SUBSTRATE.

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS.
ACCEPTABLE OVERBURDEN
(CONCRETE SLAB, CERAMIC TILES
IN SETTING BED, VINYL COMPOSITE
TILE, SHEET VINYL, ENGINEERED
WOOD FLOORING)

KEMPEROL MEMBRANE

KEMPERTEC PRIMER APPLIED
TO SUBSTRATE.

APPROVED SUBSTRATE PREPARED
PER KEMPER REQUIREMENTS.

ACCEPTABLE ALKALINITY
PROTECTION/ADHESION KEY
ACCEPTABLE OVERBURDEN (CONCRETE SLAB, CERAMIC TILES)

KEMPEROL 022 MEMBRANE WITH SURFACING SAND

APPROVED SUBSTRATE PREPARED PER KEMPER REQUIREMENTS.
NOTES:

1. THE USE OF THIS ROOF ZONE LAYOUT IS MANDATORY FOR ALL APPLICATIONS FOR WHICH AN EXTENDED WIND SPEED WARRANTY IS REQUIRED.

2. ADDITIONAL SECUREMENT IS REQUIRED IN CORNER AND PERIMETER REGIONS, TYPICALLY PROVIDED BY AN INCREASED DENSITY OF URETHANE ADHESIVE RIBBONS (SEE DRAWING HW-2) OR MECHANICAL FASTENERS/PLATES (SEE DRAWING HW-3).

3. CORNER/PERIMETER REGIONS: DIMENSION X = (0.1)(W) OR (0.4)(H), WHICHEVER IS LESS, WITH A 4’ MINIMUM.

4. HEIGHT DIFFERENCE BETWEEN ADJACENT ROOF LEVELS MUST EQUAL OR EXCEED 3’ FOR THE HIGHER LEVEL TO BE CONSIDERED A SEPARATE LEVEL.

5. REFERENCE FACTORY MUTUAL DATA SHEET 1–28 AND CONTACT KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT FOR SUPPLEMENTAL REQUIREMENTS REGARDING OVERHANGS, CANOPIES, HANGER BUILDINGS, MULTI-BAY LOADING DOCKS, WAREHOUSES, INTERNALLY PRESSURIZED BUILDINGS, AND OTHER SIMILAR APPLICATION CONDITIONS WHERE AIR PRESSURE FORCES COULD ACT ON THE UNDERSIDE OF THE ROOF DECK.
FM-APPROVED 3/4"- 1" WIDE CONTINUOUS ADHESIVE BEAD
ADHESIVE APPROVED BY KEMPER TECHNICAL SERVICES

NOTES:

1. THE USE OF THIS 3-ZONE URETHANE ADHESIVE INSULATION ATTACHMENT PATTERN IS MANDATORY FOR ALL APPLICATIONS FOR WHICH AN EXTENDED WIND SPEED WARRANTY IS REQUIRED.

2. ADDITIONAL SECUREMENT IS REQUIRED IN CORNER AND PERIMETER REGIONS, AS IDENTIFIED BY THE DRAWING HW-1, ROOF ZONE LAYOUT.

3. ADDITIONAL SECUREMENT IS PROVIDED BY THE USE OF AN INCREASED DENSITY OF URETHANE ADHESIVE RIBBONS.

4. MAXIMUM BOARD SIZE FOR ADHERED APPLICATIONS IS 4' X 4'.

5. THE USE OF INSULATION BOARDS AND COVER BOARDS APPROVED IN WRITING BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT IS REQUIRED.

6. SUBSTRATE TYPE MUST BE COMPATIBLE WITH URETHANE ADHESIVE AND APPROVED BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT.

7. 100 FT. HEIGHT LIMITATION UNLESS APPROVED IN WRITING BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT.
FIELD REGION

PERIMETER REGION

CORNER REGION

FM-APPROVED MECHANICAL FASTENERS AND PLATES — MUST BE APPROVED BY KEMPER TECHNICAL SERVICES

NOTES:

1. THE USE OF THIS 3-ZONE MECHANICAL FASTENER & PLATE ATTACHMENT PATTERN IS MANDATORY FOR ALL APPLICATIONS FOR WHICH AN EXTENDED WIND SPEED WARRANTY IS REQUIRED.

2. ADDITIONAL SECUREMENT IS REQUIRED IN CORNER AND PERIMETER REGIONS, AS IDENTIFIED BY THE DRAWING HW-1, ROOF ZONE LAYOUT.

3. ADDITIONAL SECUREMENT IS PROVIDED BY THE USE OF AN INCREASED DENSITY OF MECHANICAL FASTENERS AND PLATES.

4. MAXIMUM BOARD SIZE FOR MECHANICALLY ATTACHED APPLICATIONS IS 4' X 8'.

5. THE USE OF INSULATION BOARDS AND COVER BOARDS APPROVED IN WRITING BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT IS REQUIRED.

6. MECHANICAL FASTENER TYPE AND PENETRATION DEPTH INTO THE SUBSTRATE MUST MEET FACTORY MUTUAL REQUIREMENTS.

7. 100 FT. HEIGHT LIMITATION UNLESS APPROVED IN WRITING BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT.
NOTES:

1. THE USE OF THIS METAL EDGE SECUREMENT IS MANDATORY FOR ALL APPLICATIONS FOR WHICH AN EXTENDED WIND SPEED WARRANTY IS REQUIRED.
2. THE USE OF COMMERCIALLY AVAILABLE METAL EDGE SYSTEMS RATED FOR HIGH WIND APPLICATIONS MUST BE APPROVED IN WRITING BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT.
3. MECHANICAL FASTENER TYPE AND PENETRATION DEPTH INTO THE SUBSTRATE MUST MEET FACTORY MUTUAL REQUIREMENTS.
4. MECHANICAL FASTENERS MUST BE SECURED INTO STRUCTURAL CONCRETE, SOLID MASONRY, OR PRESSURE-TREATED WOOD BLOCKING.
5. MINIMUM METAL GAUGES ARE: 20GA. STEEL, .060" ALUMINUM, AND 24 OZ COPPER.
6. 100 FT. HEIGHT LIMITATION UNLESS APPROVED IN WRITING BY KEMPER SYSTEM, INC. TECHNICAL SERVICES DEPARTMENT.
FLEECE
120 OR 500
SATURATED W/PRIMER
OR MEMBRANE RESIN

TWO-COMPONENT
URETHANE SEALANT
OR RESIN/SAND SLURRY
REOQ FOR JOINTS
WIDER THAN 1/8”

APPROVED COVER
BOARD

APPROVED FOAM
INSULATION

2” MIN.  2” MIN.
PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF KEMPERTEC PRIMER & KEMPEROL MEMBRANE.

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION.

KEMPEROL FIELD MEMBRANE
CUT-IN REGLET 1" MIN. DEEP, APPLY APPROVED CAULKING AS REQUIRED.

PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF KEMPEROL PRIMER & MEMBRANE

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE
POLYURETHANE CAULKING (BY OTHERS)

COUNTERFLASHING AS REQUIRED (BY OTHERS)

PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF KEMPERTEC PRIMER & KEMPEROL MEMBRANE (TYP.)

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE
ANGLED RESIN FILL TYPICAL @ ALL MEMBRANE TERMINATION POINTS.

CUT-IN REGLET 1" MIN. DEEP, APPLY APPROVED CAULKING AS REQUIRED.

(2) PLY KEMPEROL MEMBRANE FLASHING EXTEND TOP PLY 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS BOTTOM PLY OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE
POLYURETHANE CAULKING
(BY OTHERS)

COUNTERFLASHING AS REQUIRED
(BY OTHERS)

(2) PLY KEMPEROL MEMBRANE FLASHING
EXTEND TOP PLY 4" MIN. HORIZONTALLY
ONTO FIELD SUBSTRATE.

CONTINUOUS BOTTOM PLY OF KEMPEROL
MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE
METAL COPING CAP

TERMINATE KEMPEROL MEMBRANE @ OUTSIDE EDGE OF WALL

WALL IN SOUND STRUCTURAL CONDITION

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE

WALL FLASHING W/COPING CAP
TERMINATE KEMPEROL MEMBRANE @ OUTSIDE EDGE OF WALL

ALL DOWELS & PENETRATING FASTENERS TO BE ENCAPSULATED W/KEMPEROL

ACCEPTABLE ALKALINITY PROTECTION (IF REQ)

MASONRY COPING STONE SET IN MORTAR BED OR SECURED W/DOWELS AS REQUIRED.

WALL IN SOUND STRUCTURAL CONDITION.

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION.

KEMPEROL FIELD MEMBRANE
TERMINATE KEMPEROL MEMBRANE @ OUTSIDE EDGE OF WALL

WALL IN SOUND STRUCTURAL CONDITION

(2) PLY KEMPEROL MEMBRANE FLASHING EXTEND TOP PLY 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS BOTTOM PLY OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION.

KEMPEROL FIELD MEMBRANE
TERMINATE KEMPEROL MEMBRANE @ OUTSIDE EDGE OF WALL.

WALL IN SOUND STRUCTURAL CONDITION

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND TOP PLY 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE

2" 2"
TERMINATE KEMPEROL MEMBRANE @ OUTSIDE EDGE OF WALL.

ALL DOWELS & PENETRATING FASTENERS TO BE ENCAPSULATED W/KEMPEROL.

ACCEPTABLE ALKALINITY PROTECTION (IF REQ)

MASONRY COPING STONE SET IN MORTAR BED OR SECURED W/DOWELS AS REQUIRED.

ACCEPTABLE DRAINAGE/PROTECTION BOARD BY OTHERS.

WALL IN SOUND STRUCTURAL CONDITION

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION.

KEMPEROL FIELD MEMBRANE
PLANTER BOX (ENGAGED)

B-6A

WATERPROOFING FLASHING

TERMINATE KEMPEROL MEMBRANE @ OUTSIDE FACE OF WALL.

ALL DOWELS & PENETRATING FASTENERS TO BE ENCAPSULATED W/KEMPEROL.

ACCEPTABLE ALKALINITY PROTECTION (IF REQ)

MASONRY COPING STONE SET IN MORTAR BED OR SECURED W/DOWELS AS REQUIRED

ACCEPTABLE DRAINAGE/PROTECTION BOARD BY OTHERS.

WALL IN SOUND STRUCTURAL CONDITION

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE

2" 2"
PLANTER BOX WATERPROOFING
B-6B
CONCRETE/MASONRY BUILDING WALL

POLYURETHANE CAULKING (BY OTHERS)

BOTTOM OF EXISTINGSTONE VENEER WALL PANEL TO REMAIN.

.040” ALUMINUM CLOSURE BY OTHERS—PROVIDE WEEPS AS REQUIRED.

ACCEPTABLE DRAINAGE/PROTECTION BOARD BY OTHERS.

CUT-IN REGLET 1” MIN. DEEP, APPLY APPROVED CAULKING AS REQUIRED.

EXTEND TOP OF FLASHING 2” MINIMUM ABOVE SOIL LINE OR AS REQUIRED

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4” MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS 4” WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE
POLYURETHANE CAULKING IF REQUIRED. (BY OTHERS)

NEW/EXISTING COUNTERFLASHING—BEND UP AS REQUIRED TO PREPARE SURFACE, PRIME & APPLY KEMPEROL MEMBRANE. RETURN TO ORIGINAL POSITION AFTER MEMBRANE CURES

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4” MIN. HORIZONTALLY ONTO FIELD SUBSTRATE

CONTINUOUS 4” WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE
THRU-WALL FLASHING DETAIL

BACKING WALL

KEMPEROL MEMBRANE FLASHING
EXTEND 8" VERTICALLY

ACCEPTABLE ALKALINITY PROTECTION

REMOVE AND REPLACE BRICKS AS
REQUIRED TO ALLOW ACCESS TO
BACKING WALL

KEMPEROL MEMBRANE

8" TYP
8" KEMPEROL MEMBRANE STRIP OVER METAL JOINTS (OPTIONAL)

METAL GRAVEL EDGE–PRIME FLANGE W/KEMPEROL PRIMER.

KEMPEROL MEMBRANE FLASHING–EXTEND FULL WIDTH OF FLANGE & 4” MINIMUM ONTO KEMPEROL FIELD MEMBRANE

FASTENERS 4” O.C., STAGGERED 1”

KEMPEROL FIELD MEMBRANE—TURN DOWN VERTICAL FACE OF WALL

1/4” HEM

4” MIN.

CONTINUOUS CLEAT, FASTENED 6” O.C. (MAX.)
8" KEMPEROL MEMBRANE STRIP OVER METAL JOINTS (OPTIONAL)

METAL GRAVEL EDGE—PRIME FLANGE W/KEMPEROL PRIMER.

KEMPEROL MEMBRANE FLASHING—EXTEND FULL WIDTH OF FLANGE & 4" MINIMUM ONTO KEMPEROL FIELD MEMBRANE

FASTENERS 4" O.C., STAGGERED 1"

KEMPEROL FIELD MEMBRANE—TURN DOWN VERTICAL FACE OF WALL

1/4" HEM

4" MIN.

CONTINUOUS CLEAT, FASTENED 6" O.C. (MAX.)
8" KEMPEROL MEMBRANE STRIP OVER METAL JOINTS (OPTIONAL)

METAL DRIP EDGE—PRIME FLANGE W/KEMPEROL PRIMER.

KEMPEROL MEMBRANE FLASHING—EXTEND FULL WIDTH OF FLANGE & 4" MINIMUM ONTO KEMPEROL FIELD MEMBRANE

FASTENERS 4" O.C., STAGGERED 1"

KEMPEROL FIELD MEMBRANE—TURN DOWN VERTICAL FACE OF WALL

1/4" HEM

4" MIN.

CONTINUOUS CLEAT, FASTENED 6" O.C. (MAX.)
8" KEMPEROL MEMBRANE STRIP OVER METAL JOINTS (OPTIONAL)

METAL DRIP EDGE–PRIME FLANGE W/KEMPEROL PRIMER

KEMPEROL MEMBRANE FLASHING–EXTEND FULL WIDTH OF FLANGE & 4" MINIMUM ONTO KEMPEROL FIELD MEMBRANE

FASTENERS 4" O.C., STAGGERED 1"

KEMPEROL FIELD MEMBRANE–TURN DOWN VERTICAL FACE OF WALL

1/4" HEM

CONTINUOUS CLEAT, FASTENED 6" O.C. (MAX.)
8" KEMPEROL MEMBRANE STRIP OVER METAL JOINTS (OPTIONAL)

METAL Drip EDGE—PRIME FLANGE W/KEMPEROL PRIMER.

KEMPEROL MEMBRANE FLASHING—EXTEND FULL WIDTH OF FLANGE & 4" MINIMUM ONTO KEMPEROL FIELD MEMBRANE.

FASTENERS 4" O.C., STAGGERED 1".

KEMPEROL FIELD MEMBRANE—TURN DOWN VERTICAL FACE OF WALL.

1/4" HEM

4" MIN.

GUTTER & SUPPORT STRAPS BY OTHERS. EXPOSED FASTENERS MUST BE FASTENED ALONG VERTICAL FACE OF DRIP EDGE & USE ACCEPTABLE SEALING WASHERS.
KEMPEROL FIELD MEMBRANE EXTENDED 6" MIN. OVER KEMPEROL DRAIN FLASHING.

(1) PLY KEMPEROL MEMBRANE FLASHING—EXTEND MINIMUM OF 3" INTO PREPARED AND PRIMED DRAIN BOWL.

PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF KEMPERTEC PRIMER & KEMPEROL MEMBRANE

STRAINER

CLAMP RING (OPTIONAL)

6" MIN. OVERLAP

KEMPEROL RESIN/SAND FILL AS REQUIRED TO DEVELOP SMOOTH TRANSITION

ACCEPTABLE ROOF DRAIN ASSEMBLY PREPARE & PRIME DRAIN BOWL AS REQ'D. FOR KEMPEROL MEMBRANE APPLICATION
ONE OR TWO PLY KEMPEROL MEMBRANE WALL FLASHING BEYOND

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND MINIMUM OF 3" INTO PREPARED AND PRIMED DRAIN BOWL

STRAINER AND CLAMP RING (OPTIONAL)

NOTE:
KEMPEROL FIELD MEMBRANE MUST EXTEND 6" MIN. OVER KEMPEROL DRAIN FLASHING

ACCEPTABLE SCUPPER DRAIN ASSEMBLY PREPARE & PRIME DRAIN BOWL AS REQ'D. FOR KEMPEROL MEMBRANE APPLICATION
THRU-WALL SCUPPER FLASHING

POLYURETHANE CAULKING (BY OTHERS)

COUNTERFLASHING AS REQUIRED (BY OTHERS)

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND THRU TO INSIDE OF OPENING

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

CONTINUOUS BOTTOM PLY OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE

2"  2"
POLYURETHANE CAULKING
(BY OTHERS)

COUNTERFLASHING AS REQUIRED
(BY OTHERS)

(1) PLY KEMPEROL MEMBRANE FLASHING
EXTEND THRU TO INSIDE OF OPENING

KEMPEROL FIELD MEMBRANE

2"
ACCEPTABLE CONCRETE, ASPHALT, PAVER, OR TILE OVERBURDEN

KEMPEROL FIELD MEMBRANE EXTENDED 6" MIN. OVER KEMPEROL DRAIN FLASHING.

(1) PLY KEMPEROL MEMBRANE FLASHING—EXTEND MINIMUM OF 3" INTO PREPARED AND PRIMED DRAIN BOWL.

WRAP DRAIN SLEEVE W/GEOTEXTILE FILTER FABRIC & EXTEND 12" MIN. INTO HORIZONTAL PLANE

ACCEPTABLE PLAZA DRAIN ASSEMBLY
ADJUST COLLAR AS REQUIRED TO ASSURE TOP OF GRATE IS FLUSH W/PAVEMENT.
PREPARE & PRIME DRAIN BOWL AS REQ'D. FOR KEMPEROL MEMBRANE APPLICATION.
KEMPEROL FIELD MEMBRANE

(1) PLY KEMPEROL MEMBRANE—EXTEND HORIZONTALLY ONTO PREPARED AND PRIMED DRAIN BOWL

SET DRAIN FLANGE IN KEMPEROL PRIMER/SAND FILL AS REQUIRED TO DEVELOP A SMOOTH TRANSITION

ACCEPTABLE PARK DECK DRAIN ASSEMBLY
ADJUST COLLAR AS REQUIRED TO ASSURE TOP OF GRATE IS FLUSH W/PAVEMENT.
PREPARE AND PRIME DRAIN FLANGE AS REQ’D FOR KEMPEROL MEMBRANE APPLICATION.
KEMPEROL FIELD MEMBRANE EXTENDED 6" MIN. OVER KEMPEROL DRAIN FLASHING.

(1) PLY KEMPEROL MEMBRANE FLASHING—EXTEND MINIMUM OF 3" INTO PREPARED AND PRIMED DRAIN BOWL

GEOTEXTILE FILTER FABRIC
EXTEND 12" MIN. ONTO HORIZONTAL PLANE

MESH SCREEN & DRAIN STRAINER

6" MIN. OVERLAP

KEMPEROL RESIN/SAND FILL
AS REQUIRED TO DEVELOP SMOOTH TRANSITION

DRAIN CLAMPING RING

ACCEPTABLE PLANTER DRAIN ASSEMBLY
PREPARE & PRIME DRAIN BOWL AS REQ'D.
FOR KEMPEROL MEMBRANE APPLICATION
KEMPEROL RESIN/SAND FILL AS REQUIRED TO DEVELOP SMOOTH TRANSITION

KEMPEROL FIELD MEMBRANE EXTENDED 6" MIN. OVER KEMPEROL DRAIN FLASHING

(1) PLY KEMPEROL MEMBRANE FLASHING—EXTEND IN HORIZONTAL PLANE A MINIMUM OF 6" BEYOND EDGE OF DRAIN BODY

6" MIN. OVERLAP

RECESS CONCRETE SLAB AS REQUIRED TO PROVIDE FLUSH PROFILE OF COMPLETED FLASHING

ACCEPTABLE TRAFFIC GRATE—ADJUST TOP OF GRATE TO BE ±1/8” ABOVE FINISHED PLANE OF FINISHED MEMBRANE

GRIND DOWN GRATE SUPPORT FLANGE AS REQUIRED TO ALLOW APPLICATION OF KEMPEROL MEMBRANE

ACCEPTABLE TRENCH DRAIN ASSEMBLY PREPARE & PRIME DRAIN BOWL AS REQ'D. FOR KEMPEROL MEMBRANE APPLICATION
FIELD FABRICATED PIPE PENETRATION FLASHING

POWER TOOL CLEAN TUBE STEEL PER SSPC-SP3.

KEMPEROL MEMBRANE SKIRT WRAPPED AROUND PIPE W/ 2" MIN. OVERLAP

KEMPEROL MEMBRANE COLLAR CUT INSIDE DIA. 1/2" SMALLER THAN PIPE DIAMETER

KEMPEROL FIELD MEMBRANE CUT TIGHT TO PENETRATION

RADIAL CUTS TO SKIRT AS REQUIRED
FIELD FABRICATED WARM PIPE PENETRATION FLASHING

SYMM. ABOUT

WARM PIPE–METAL SLEEVE REQ'D. @ 150°F OR GREATER

RAIN HOOD, CLAMP & CAULKING (BY OTHERS)

KEMPEROL MEMBRANE SKIRT WRAPPED AROUND METAL SLEEVE W/ 2" MIN. OVERLAP

KEMPEROL MEMBRANE COLLAR CUT INSIDE DIA. 1/2" SMALLER THAN SLEEVE BASE DIAMETER

KEMPEROL FIELD MEMBRANE—CUT TIGHT TO SLEEVE BASE 6" MIN.

1/3" TYP.

1" (TYP.)

RADIAL CUTS TO SKIRT AS REQUIRED
IRREGULAR PENETRATION
POWER TOOL CLEAN METAL SURFACE TO BE FLASHED PER SSPC-SP3.

KEMPEROL RESIN

ANGLED RESIN FILL TYPICAL @ ALL TERMINATION POINTS OF KEMPEROL MEMBRANE.

KEMPEROL MEMBRANE SKIRT WRAPPED AROUND METAL PENETRATION W/2" MIN. OVERLAP @ ALL JOINTS.

KEMPEROL MEMBRANE COLLAR CUT SNUG FIT AROUND PENETRATION TO PROVIDE 1" MIN. VERTICAL TURN UP.

KEMPEROL FIELD MEMBRANE CUT TIGHT TO PENETRATION
IRREGULAR PENETRATION
POWER TOOL CLEAN METAL SURFACE TO BE FLASHED PER SSPC-SP3.

KEMPEROL RESIN

KEMPEROL MEMBRANE SKIRT WRAPPED AROUND METAL PENETRATION W/2” MIN. OVERLAP @ ALL JOINTS.

KEMPEROL MEMBRANE COLLAR CUT SNUG FIT AROUND PENETRATION TO PROVIDE 1” MIN. VERTICAL TURN UP.

KEMPEROL FIELD MEMBRANE CUT TIGHT TO PENETRATION

1” TYP.

6” (MIN.)

6” (TYP.)
TOP OUTSIDE CORNER—SEE TYPICAL KEMPEROL INSIDE CORNER DETAIL FOR SIMILAR FABRICATION.

AS REQUIRED (VARIES)

KEMPEROL MEMBRANE FLASHING

3" MIN.

KEMPEROL FIELD MEMBRANE

BOTTOM OUTSIDE CORNER—SEE TYPICAL KEMPEROL OUTSIDE CORNER DETAIL.
IRREGULAR PENETRATION

P-10

UNI-STRUT CHANNEL

KEMPEROL MEMBRANE COLLAR CUT SNUG FIT AROUND PENETRATION TO PROVIDE 1" MIN. VERTICAL TURN UP.

KEMPEROL FIELD MEMBRANE CUT TIGHT TO PENETRATION

KEMPEROL RESIN/SAND FILL IN CHANNEL TO TOP OF MEMBRANE SKIRT – SLOPE TO DRAIN

KEMPEROL MEMBRANE SKIRT WRAPPED AROUND METAL PENETRATION W/2" MIN. OVERLAP @ ALL JOINTS

KEMPEROL FLEECE FLAP

6" (TYP.)
(2) PLY KEMPEROL MEMBRANE TOP &
(1) PLY BOTTOM SET WET-IN-WET W/
2" MIN. OFFSET END/SIDE LAPs
EXTEND TOP PLY 6" MIN. HORIZONTALLY
ONT0 FIELD SUBSTRATE.

APPROVED CONTINUOUS CLOSED-CELL
POLYETHYLENE FOAM BACKER ROD
CONTINUOUS BOTTOM PLY OF KEMPEROL
MEMBRANE @ WALL TO DECK TRANSITION
KEMPEROL FIELD MEMBRANE

2"
8" MINIMUM

BEVELED EDGE 3/8" MAX. @30' (TYP.)
APPLY BOND BREAKER TAPE ON BOTH
SIDES OF THE JOINT
APPROVED COMPRESSIBLE FILLER
(AS REQUIRED)
CUT-IN REGLET 1” MIN. DEEP, APPLY APPROVED CAULKING AS REQUIRED.

(2) PLY KEMPEROL MEMBRANE TOP &
(1) PLY BOTTOM SET WET-IN-WET W/
2” MIN. OFFSET END/SIDE LAPS
EXTEND TOP PLY 6” MIN. HORIZONTALLY
ONTO FIELD SUBSTRATE.

APPROVED CONTINUOUS CLOSED-CELL
POLYETHYLENE FOAM BACKER ROD

CONTINUOUS BOTTOM PLY OF KEMPEROL
MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE

BEVELED EDGE 3/8” MAX. @30° (TYP)
APPLY BOND BREAKER TAPE ON BOTH
SIDES OF THE JOINT
APPROVED COMPRESSIBLE FILLER
(AS REQUIRED)
POLYURETHANE CAULKING (BY OTHERS)

COUNTERFLASHING AS REQUIRED (BY OTHERS)

(2) PLY KEMPEROL MEMBRANE TOP &
(1) PLY BOTTOM SET WET-IN-WET W/
2" MIN. OFFSET END/SIDE LAPS
EXTEND TOP PLY 6" MIN. HORIZONTALLY
ONTO FIELD SUBSTRATE.

APPROVED CONTINUOUS CLOSED-CELL
POLYETHYLENE FOAM BACKER ROD

CONTINUOUS BOTTOM PLY OF KEMPEROL
MEMBRANE @ WALL TO DECK TRANSITION

KEMPEROL FIELD MEMBRANE

1-1/2" (MAX)

BEVELED EDGE 3/8" MAX. @30° (TYP)
APPLY BOND BREAKER TAPE ON BOTH
SIDES OF THE JOINT
APPROVED COMPRRESSIBLE FILLER
(AS REQUIRED)
APPROVED CONTINUOUS CLOSED CELL POLYETHYLENE FOAM BACKER ROD.

(2) PLY KEMPEROL MEMBRANE TOP & (1) PLY BOTTOM SET WET-IN-WET W/ 2” MIN. OFFSET END/SID LAPS.

RECESS CONCRETE SLAB (BARTEL SPS) TO ALLOW FOR FLUSH APPEARANCE OF COMPLETED JOINT FLASHING.

RESIN CANT (TYP.)

CONCRETE SLAB OR DECK

BEVELED EDGE 3/8” MAX. @ 30° (TYP.)

APPLY APPROVED BOND BREAKER TAPE W/ADHESIVE BACKING @ VERTICAL JOINT SURFACES

1-1/2” (MAX)

COMPRESSIBLE CLOSED-CELL JOINT FILLER @ 10-20% COMPRESSION.
ACCEPTABLE HIGH LOAD SEALANT
(BY OTHERS)

CLOSED CELL POLYETHYLENE FOAM
BACKER ROD 10%–20% COMPRESSION

(2) PLY KEMPEROL MEMBRANE JOINT
FLASHING SET WET–IN–WET W/
2” MIN. OFFSET END/SID LAPS.

RECESS CONCRETE SLAB (BARTEL SPS)
TO ALLOW FOR FLUSH APPEARANCE
OF COMPLETED JOINT FLASHING.

KEMPEROL FIELD
MEMBRANE

2” 4”

6” MIN.

CONCRETE SLAB OR DECK

BEVELED EDGE 3/8” MAX. @ 30° (TYP.)

APPLY APPROVED BOND BREAKER
TAPE W/ADHESIVE BACKING @
VERTICAL JOINT SURFACES

1–1/2” MAX

COMPRESSIBLE CLOSED–CELL JOINT
FILLER @ 10–20% COMPRESSION.
FLASHING AT VEHICULAR TRAFFIC JOINT

- KEMPEROL MEMBRANE
- ELASTOMERIC CONCRETE NOSING TO EXTEND ABOVE KEMPEROL MEMBRANE BY 1/8" MIN. (BY OTHERS)
- KILN-DRIED SILICA SAND BROADCASTED INTO WET RESIN
- BOND BREAKER APPLIED TO SIDES OF JOINT (BY OTHERS)
- THERMOPLASTIC RUBBER MEMBRANE GLAND (BY OTHERS)
- (2) PLY KEMPEROL MEMBRANE LOOP
- EXPANSION JOINT FLANGE (BY OTHERS)

BEVELED EDGE
COMPRESSIBLE CLOSED-CELL JOINT FILLER @ 10-20% COMPRESSION
KEMPEROL MEMBRANE FLASHING

"L" shaped outside corner handcut from polyester fleece—deform inside edge to provide 1" minimum up turn

KEMPEROL FIELD MEMBRANE

6" MIN.

3" MIN.
EXTEND FLASHING 2" UP SIDES OF DOOR OPENING

METAL SILL FLASHING SET IN BED OF SEALANT (BY OTHERS)

IF VERTICAL HEIGHT OF FLASHING IS LESS THAN 6" MINIMUM, EXTEND KEMPEROL MEMBRANE FLASHING UNDER METAL SILL PLATE & REINSTALL SET SILL PLATE IN BED OF POLYURETHANE SEALANT. (RECOMMENDED FOR ALL CONDITIONS)

KEMPEROL MEMBRANE FLASHING EXTEND 4" MIN. HORIZONTALLY ONTO FIELD SUBSTRATE.

ASSURE FULL CONTACT OF COMPOSITE W/ SUBSTRATE & RESIN SATURATION OF FLEECE IN CORNER AREA.

CONTINUOUS 4" WIDE STRIP OF KEMPEROL MEMBRANE @ WALL TO DECK TRANSITION.

KEMPEROL FIELD MEMBRANE
(2) Ply Kemperol Membrane Flashing
Extend Field Ply 12" Min. Horizontally onto Modified Bitumen/Bur Membrane.

12" Min.

(2) Plies of fiberglass roof felt set in solid mopping of hot asphalt or mastic
Broadcast Kemperol surfacing sand into the wet resin
Exist. granulated modified bitumen cap sheet or built-up roof membrane
KEMPEROL FIELD MEMBRANE—PRIME
SURFACE OF MEMBRANE 12" MIN.
HORIZONTALLY FOR BUR TIE-IN

24" MIN.

(2) PLIES OF FIBERGLASS ROOF FELT SET IN
SOLID MOPPING OF HOT ASPHALT OR MASTIC
EXIST. GRANULATED MODIFIED BITUMEN CAP
SHEET OR BUILT-UP ROOF MEMBRANE

BROADCAST SURFACING SAND
INTO THE WET RESIN

12"

CUT-IN REGLET 1"
MIN. DEEP

12"
(2) Ply Kemperol membrane flashing extend field ply 12" min. horizontally onto modified bitumen/BUR membrane.

(2) Plies of fiberglass roof felt set in solid mopping of hot asphalt or mastic broadcast sand into the wet resin

Exist. granulated modified bitumen cap sheet or built-up roof membrane

Kemperol resin/sand fill as required to develop smooth sloping transition

Varies with required slope

6"  6"  6"
ACCEPTABLE MINERAL AGGREGATE SURFACING BROADCAST INTO AN APPLICATION OF KEMPEROL AGGREGATE BONDING RESIN (TYP.)

PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF KEMPERTEC PRIMER & KEMPEROL MEMBRANE (TYP.)

KEMPERTEC PRIMER APPLIED TO PROPERLY PREPARED SUBSTRATE

(1) PLY OF KEMPEROL MEMBRANE W/ FLEECE 165 REINFORCING

(1) PLY OF KEMPEROL MEMBRANE W/ FLEECE 200 REINFORCING

ANGLED RESIN FILL TYPICAL @ ALL TERMINATION POINTS OF KEMPEROL MEMBRANE & FLASHING.
ACCEPTABLE MINERAL AGGREGATE SURFACING BROADCAST INTO AN APPLICATION OF KEMPEROL AGGREGATE BONDING RESIN (TYP.)

PREPARE, LEVEL & PATCH SUBSTRATE AS REQUIRED W/APPROVED LEVELING COMPOUND PRIOR TO APPLICATION OF KEMPERTEC PRIMER & KEMPEROL Membrane (TYP.)

KEMPERTEC PRIMER APPLIED TO PROPERLY PREPARED SUBSTRATE

(1) PLY OF KEMPEROL MEMBRANE W/ FLEECE 165 REINFORCING

(1) PLY OF KEMPEROL MEMBRANE W/ FLEECE 200 REINFORCING

ANGLED RESIN FILL TYPICAL @ ALL TERMINATION POINTS OF KEMPEROL MEMBRANE & FLASHING.
DOOR, FRAME, SADDLE & PIVOT HINGE BY OTHERS. COORDINATE INSTALLATION OF HINGE BOX W/WATERPROOFING APPLICATION.

PIVOT HINGE BOX SET IN 1/2" MIN. THICK BED OF KEMPEROL RESIN/SAND MORTAR. PRIME ALL CONTACT SURFACES W/KEMPEROL PRIMER.

METAL DOOR SADDLE SET IN CONTINUOUS BED OF KEMPEROL RESIN/SAND FILL. PRIME ALL CONTACT SURFACES W/KEMPEROL PRIMER.

STONE OR CONCRETE PAVER SET IN ACCEPTABLE MORTAR SETTING BED.

(1) PLY KEMPEROL MEMBRANE FLASHING EXTEND 2" MIN. HORIZONTALLY ONTO KEMPEROL FIELD MEMBRANE.
KEMPEROL FLEECE - 6" WIDE STRIP SATURATED IN RESIN

BUTT FLEECE TIGHT - 1/16" GAP MAX.

KEMPEROL FIELD MEMBRANE

KEMPEROL FIELD MEMBRANE
AGGREGATE SURFACING ON TREADS (TYP.)

SECURE METAL NOSING WITH EPOXY-SET OR EXPANSION ANCHORS (BY OTHERS)

ROUTE OUT CONCRETE TREAD TO RECEIVE NOSING

METAL NOSING (BY OTHERS) INSTALLED IN BED OF URETHANE SEALANT (BY OTHERS)
CUT AND REMOVE DEFECTIVE OR DAMAGED MEMBRANE TO CREATE AN EVEN REPAIR AREA

REPRIME EXPOSED SUBSTRATE WITH KEMPERTEC PRIMER

APPLY KEMPEROL MEMBRANE WITH 165 FLEECE, BUTTING NEW MEMBRANE TO EXISTING MEMBRANE

APPLY KEMPEROL MEMBRANE WITH 6" WIDE STRIP OF KEMPEROL JOINT FLEECE CENTERED OVER ALL BUTT JOINTS
REMOVE EXISTING SURFACING FROM MEMBRANE FOR 2" AROUND THE DAMAGED AREA PRIOR TO BEGINNING REPAIR

CUT AND REMOVE DEFECTIVE OR DAMAGED MEMBRANE TO CREATE AN EVEN REPAIR AREA

REPRIME EXPOSED SUBSTRATE WITH KEMPERTEC PRIMER

APPLY KEMPEROL MEMBRANE WITH 165 FLEECE, BUTTING NEW MEMBRANE TO EXISTING MEMBRANE

APPLY KEMPEROL MEMBRANE WITH 6" WIDE STRIP OF KEMPEROL JOINT FLEECE CENTERED OVER THE REPAIR AREA

APPLY KEMPEROL SURFACING TO MATCH EXISTING
STEEL SLOPE ROOFING (SHINGLES, SLATE, METAL, TILE) (TYP.)

CONTINUOUS CLEAT (TYP.)

NEW METAL DRIP EDGE COPING (TYP.)—PREP & PRIME FLANGE W/PRIMER

KEMPEROL MEMBRANE TO EXTEND FROM 4” ON THE ROOF DOWN FASCIA AND LINE INSIDE GUTTER BOX

ACCEPTABLE SUBSTRATE (CONCRETE, WOOD, METAL)

8” KEMPEROL MEMBRANE STRIP OVER METAL JOINTS
KEMPEROL MEMBRANE WITH A MIN 2" OVERLAP

KEMPEROL MEMBRANE W/8.3" WIDE FLEECE OVER METAL SEAM

APPROVED SUBSTRATE PREPARED AND PRIMED PER KEMPER REQUIREMENTS
Kemper System America, Inc. maintains the highest manufacturing standards and remains the industry leaders through our extensive research and development efforts. Our rigorous manufacturing standards and our superior product performance allow us to maintain critical industry certifications.
Chemical Resistance for Kemper System Products

Survey table for chemical resistance of:
unsaturated Polyesters (UP)
   KEMPEROL BRM/V210M Waterproofing

two-component polyurethanes (2K-PU)
   KEMPEROL 2K-PUR Waterproofing

polymethyl methacrylates (PMMA)
   KEMPEROL AC Waterproofing
   KEMPERDUR AC Finish

epoxy resins (EP)
   KEMPERTEC EP/EP5-Primer
   KEMPERDUR EP-FR Finish
### Chemical Resistance for Kemper System Products

<table>
<thead>
<tr>
<th>Product</th>
<th>solid</th>
<th>solution</th>
<th>liquid</th>
<th>UP</th>
<th>2K-PUR</th>
<th>PMMA</th>
<th>EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Accumulator Acid</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Acetic Acid &lt; 10 %</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Acetic Acid conc.</td>
<td></td>
<td>x</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Acetone</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Aluminumchloride Solution 30%</td>
<td>x</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ammonia</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ammonium Carbonate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ammonium Chloride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ammonium Perchlorate</td>
<td>x</td>
<td>x</td>
<td>o</td>
<td>o</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ammonium Phosphate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Ammonium Sulphate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Aqua Regia</td>
<td>x</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>B Barium Chloride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Barium Hydroxide</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Barium Hydroxide Solution</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Barium Nitrate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Beer</td>
<td></td>
<td>x</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Bleach</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>o</td>
</tr>
<tr>
<td>Borax</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Boric Acid</td>
<td>x</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Butanal</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Butanol</td>
<td>x</td>
<td></td>
<td>o</td>
<td>o</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Butylacetate</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Butyric Acid</td>
<td>x</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>o</td>
</tr>
<tr>
<td>C Calcium Chloride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Calcium Formiate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Calcium Hydroxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Calcium Hydroxide moist</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Calcium Hydroxide Solution</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Calcium Nitrate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Carbon Tetra Chloride</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Castor Oil</td>
<td>x</td>
<td></td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Caustic potash solution 10 % (lye)</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Caustic potash solution 10-50 % (lye)</td>
<td>x</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>+</td>
</tr>
</tbody>
</table>

+ resistant: no affect to the Kemper System after 60 days exposure at 68°F (20°C) to the listed material

o resistant with restrictions: no affect to the Kemper System after 3 days exposure at 68°F (20°C) to the listed material

- not resistant: severe affects to the Kemper System when exposed to the listed material (i.e. Waterproofing system is stable when only small amounts are present and are removed immediately)

Note: Specific testing is required for unlisted chemicals, mixtures, concentrations and temperatures.
# Chemical Resistance for Kemperol® Products

<table>
<thead>
<tr>
<th>Product</th>
<th>solid</th>
<th>solution</th>
<th>liquid</th>
<th>UP</th>
<th>2K-PUR</th>
<th>PMMA</th>
<th>EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caustic potash solution conc. (lye)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caustic Soda 10 % (lye)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caustic Soda 10-50 % (lye)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caustic Soda conc. (lye)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloracetic Acid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorinated Water</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorinated Water (Swimming pools)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chloroform</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chromic Acid 10%</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Citric Acid</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cobalt Nitrate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper Sulphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclohexanol</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyclohexanone</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dibutyl Phthalate</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diocetyl Phthalate</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol &lt; 50 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol conc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ether</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylacetate (Aceticacidethylester)</td>
<td>x</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethylglycol Acetat</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrum Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrum Chloride Solution 50%</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrum Sulphate</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ferrum Sulphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formaldehyde 30-40% (Formalin)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formic Acid &lt; 30 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formic Acid 31-85 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Oil EL</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel, Petrol</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glucose</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerin</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycol</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrobromic Acid</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrochloric Acid 20 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrochloric Acid conc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydrofluoric Acid</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isopropyl Alcohol</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lactic Acid 10%</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ resistant - no resistant to the Kemper System after 60 days exposure at 68°F (20°C) to the listed material
- no affect to the Kemper System after 3 days exposure at 68°F (20°C) to the listed material
(i.e. Waterproofing system is stable when only small amounts are present and are removed immediately)
- not resistant - severe affects to the Kemper System when exposed to the listed material

Note: Specific testing is required for unlisted chemicals, mixtures, concentrations and temperatures.
### Chemical Resistance for Kemperol® Products

<table>
<thead>
<tr>
<th>Product</th>
<th>solid</th>
<th>solution</th>
<th>liquid</th>
<th>UP</th>
<th>2K-PUR</th>
<th>PMMA</th>
<th>EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lactic Acid conc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead Acetate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lime Chloride</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubricating Grease</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubricating Oil</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Nitrate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium Sulphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maleic Acid</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manganese Sulphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Margarine</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mercury Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methanol</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl Acetate</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl Chloride</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methylamine</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyleneiketone</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methylisobutylketone</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mineral Oil</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molasses (Beet)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nickel Sulphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitric Acid (Azotic Acid)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil for cooking</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil for Engines</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oil from Flax (Linen)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxalic Acid</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ozone</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paraffin</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perchloric Acid &lt; 10 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perchloric Acid 70 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenol</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphoric Acid 10 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphoric Acid 50 %</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phosphoric Acid conc.</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phthalic Acid</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium Bromate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium Carbonate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium Chlorate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

+ resistant - no affect to the Kemper System after 60 days exposure at 68°F (20°C) to the listed material
- not resistant - severe affects to the Kemper System when exposed to the listed material
0 resistant with restrictions - no affect to the Kemper System after 3 days exposure at 68°F (20°C) to the listed material (i.e. Waterproofing system is stable when only small amounts are present and are removed immediately)

Note: Specific testing is required for unlisted chemicals, mixtures, concentrations and temperatures.
<table>
<thead>
<tr>
<th>Product</th>
<th>solid</th>
<th>liquid</th>
<th>UP</th>
<th>2K-PUR</th>
<th>PMMA</th>
<th>EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium Chloride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Chromat</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Cyanide</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Dichromat</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Fluoride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Iodid</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Nitrat</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Permangante</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Phosphate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Potassium Sulphate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Propanol</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Propionic Acid 10 %</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Propionic Acid conc.</td>
<td>x</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Salicylic Acid</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Salt</td>
<td>x</td>
<td>x</td>
<td></td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Salt moist</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Silver Nitrate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Acetat</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Bromid</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sodium Carbonat</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Chlorat</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sodium Chlorid</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Cyanide</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Fluoride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Hypochlorite</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium HypoChlorite Solution</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sodium Nitrate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Perborate</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sodium Perchlorat</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sodium Peroxide</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sodium Phosphate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Sulfite</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium Sulphate</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sodium-Potassium Silicate</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Stearic Acid</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Succinic Acid</td>
<td>x</td>
<td>x</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sugar</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Sugar moist</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Sulfuric Acid 10 %</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
<tr>
<td>Sulfuric Acid 20 %</td>
<td>x</td>
<td></td>
<td></td>
<td>0</td>
<td>0</td>
<td>+</td>
</tr>
</tbody>
</table>

+ resistant - no affect to the Kemper System after 60 days exposure at 68°F (20°C) to the listed material
α resistant with restrictions - no affect to the Kemper System after 3 days exposure at 68°F (20°C) to the listed material (i.e. Waterproofing system is stable when only small amounts are present and are removed immediately)
- not resistant - severe affects to the Kemper System when exposed to the listed material

Note: Specific testing is required for unlisted chemicals, mixtures, concentrations and temperatures.
# Chemical Resistance for Kemperol® Products

<table>
<thead>
<tr>
<th>Product</th>
<th>solid</th>
<th>solution</th>
<th>liquid</th>
<th>UP</th>
<th>2K-PUR</th>
<th>PMMA</th>
<th>EP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfuric Acid 40 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfuric Acid 60 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfuric Acid conc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfuric Acid conc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table Salt</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Table Salt Solution</td>
<td>x</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Tannic Acid</td>
<td></td>
<td>x</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Tartaric Acid</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Tetra Hydro Furane (THF)</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Tin Chloride</td>
<td>x</td>
<td>x</td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Toluene</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Tri Sodium Phosphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>o</td>
<td></td>
<td>o</td>
</tr>
<tr>
<td>Trichlorethan</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Trichlorethylene</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Triethanolamine</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Triethylamine</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Turpentine</td>
<td>x</td>
<td>0</td>
<td>0</td>
<td></td>
<td>O</td>
<td></td>
<td>O</td>
</tr>
<tr>
<td>Urea</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Urine</td>
<td>x</td>
<td>0</td>
<td>0</td>
<td></td>
<td>o</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Trichlorethan</td>
<td>x</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Water (Sea-, Mineral-, Potable)</td>
<td>x</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Wine</td>
<td>x</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Xylol</td>
<td>x</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
<td></td>
<td>o</td>
</tr>
<tr>
<td>Zinc Chloride</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Zinc Nitrate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Zinc Sulphate</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>+</td>
<td></td>
<td>+</td>
</tr>
</tbody>
</table>

+ resistant - no affect to the Kemper System after 60 days exposure at 68°F (20°C) to the listed material
o resistant with restrictions - no affect to the Kemper System after 3 days exposure at 68°F (20°C) to the listed material
(i.e. Waterproofing system is stable when only small amounts are present and are removed immediately)
- not resistant - severe affects to the Kemper System when exposed to the listed material

Note: Specific testing is required for unlisted chemicals, mixtures, concentrations and temperatures.
KEMPER SYSTEM AMERICA, INC.'s (“KSA”) below warranties are only available for projects installed by KSA applicator firms and applicator personnel trained and approved in accordance with current “TRAINING AND APPROVAL PROCEDURES” and applied in accordance with current “POLICY AND PROCEDURES FOR APPLICATIONS,” including currently published application and specification requirements, construction details, and technical bulletins. Please contact your local sales representative for other custom warranties.

**PREMIER NDL LIMITED WARRANTY (EDGE-TO-EDGE PROJECTS)**

**Eligibility:** Available for select roofing and waterproofing projects that are full installations; Kemperol membrane must encapsulate the substrate completely edge to edge with no chance of moisture migration into the Kemperol system from other surfaces.

**Eligibility Limitations:** Not intended for applications on individual residences.

**Intent of Coverage:** This limited warranty provides repair/replacement materials and labor required to repair/replace the materials in the event defects in the Kemperol materials or related installation workmanship allow water to infiltrate through the system, as defined in the warranty.

**Minimum Square Footage of KSA material:** 1,000 square feet

**Maximum $ liability of KSA for this warranty:** No Dollar Limit (NDL)

The following warranty riders are available on a per-project basis. Contact KSA Technical Services for specific requirements.

- **Overburden Removal & Reinstallation Rider:** (NOT applicable for permanent overburden such as concrete, tile in a setting bed, wood decking, green/decorative landscaping, etc.)
- **125 mph Wind Coverage Rider:** (Specific substrate applications only. Special requirements apply.)
- **150 mph Wind Coverage Rider:** (Direct-to-structural substrate application only. Special requirements apply.)

**SELECT WARRANTY (ROOFING, WATERPROOFING, AND FLASHING WARRANTY)**

**Eligibility:** Available for select roofing, waterproofing, and flashing projects that are full or partial installations. Specifically intended for installations on individual residences and balconies.

**Intent of Coverage:** This limited warranty provides repair/replacement materials and labor required to repair/replace the materials in the event defects in the Kemperol materials cause loss of watertight integrity, as defined in the warranty.

**Minimum Square Footage of KSA material:** 500 square feet

**Maximum $ liability of KSA for this warranty:** Original Cost To Owner of KSA material.

**MATERIALS PRODUCT WARRANTY**

**Eligibility:** For all membrane and surfacing/coating products and for applications that do not qualify for Premier and Select Labor and Materials warranties.

**Intent of Coverage:** This limited warranty provides replacement materials in the event the Kemperol materials are defective in their composition, as defined in the warranty. Labor required to repair/replace the materials are not included.

**Maximum $ liability of KSA for this warranty:** Original Cost To Owner of KSA material, prorated equally over the duration of the warranty.

**Note:** Refer to individual warranties for specific terms and conditions, coverage, exclusions, and the rights, responsibilities and obligations of both the Building Owner and KSA. NO OTHER WARRANTIES ARE MADE OR IMPLIED; ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.

Rev. 07/2015

Headquarters: Kemper System America, Inc. | 1200 North America Drive | West Seneca, NY 14224
Customer/Technical Service: Phone (800) 541-5455 | Fax (201) 767-4304 | inquiry@kempersystem.net