

# Technical Data Sheet

## KEMPEROL® 2K FR COLOR SERIES



Work pack includes: Component A: 'Color' Formulation, Component B: Clear Formulation

### Product Description

**KEMPEROL® 2K FR** is a two-component, high performance, UV and color stable, odor-free and solvent free, Low VOC, fire-rated, cold liquid-applied roofing resin.

Available colors: Light Gray, Military Beige, Patina Green, Reflect White (Reflect 2K FR), Stone Gray.

### Composition & Materials

A monolithic membrane is created in the field by combining the KEMPEROL® 2K FR two-part, cold liquid-applied reactive-cure polyurethane resin with KEMPEROL® polyester reinforcing fleece.

### Use

KEMPEROL® 2K FR membrane is for roofing and flashing applications and it achieves Class A fire rating as part of an assembly in accordance with ASTM E 108 / UL 790.

### Limitations

KEMPEROL® 2K FR 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

KEMPEROL® 165 Fleece: 33 ft<sup>2</sup> (3 m<sup>2</sup>) 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 50 °F (10 °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: [www.kempersystem.net](http://www.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 KEMPERTEC® D Primer or EP Primer and Joint Sealant. Alternatively, the use of quick cure 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.

Sustainability Information	
% Biobased Carbon Content ASTM D6866-21	43%
Recycled content % (post / pre)	0/0
Manufacture location	Buffalo, NY

 COOL ROOF RATING COUNCIL	Initial	Weathered
	Solar Reflectance	0.87
Thermal Emittance	0.90	0.89
Rated Product ID Number	0662-0048	
CRRC Lincensee ID Number	0662	
Classification	Production Line	
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.		

CRRC Product Rating for KEMPEROL® 2K FR - Reflect White (also known as KEMPEROL® Reflect 2K FR.)

Membrane Properties		
Physical Property	Test Method	Value
Colors		Light Gray / Military Beige / Patina Green / Reflect White / Stone Gray
Physical State		Cures To Solid
SRI		Initial / 3 Year Aged
Light Gray		51 / 61
Military Beige		57 / 63
Patina Green		48 / 57
Reflect White (Reflect 2K FR)		110 / 98
Stone Gray		25 / 25
Thickness (165 Fleece)		80 mils
VOC Content	Method V1.2	2 g/l
CDPH Standard		Pass
TVOC Concentration		≤ 0.5 mg/m3
Peak Load @ 73 °F, avg.	D5147	90 lbf/in
Elongation	D5147	Min 30%
Tearing Strength (Reflect White Only)	D5147	90 lbf
Tearing Strength (Other Colors)	D5147	75 lbf
Puncture Resistance (Reflect White Only)	D5602	56 lbs.
Puncture Resistance (Reflect White Only)	FTMS 101-2031	140 lbs.
Dimensional Stability (Reflect White Only)	D1204	0.15%
Water Absorption (Reflect White Only)	D570	max 1%
Impact Resistance	D2240	Shore A:70 +/- 5
Water Vapor Transmission	E96	0.08 perms
Hydrostatic Resistance	D751	400 psi
Low Temperature Crack Bridging (Reflect White Only)	C957 / C1305	Pass
Crack Spanning		2 mm/0.08 inch
Short-Term Temperature Resistance		250 °C/482 °F
Usage Time*		30 minutes
Water Resistant After*		2 hours
Solid To Walk On After*		24 hours
Can Be Driven On After*		48 hours
Apply Coating / Surfacing After*		16-48 hours

\* values obtained at 73°F, 50% relative humidity, may vary depending upon air flow, humidity and temperature.

## Mixing of Resin

Note: Prior to opening the containers of KEMPEROL® 2K FR Resin, wear appropriate safety glasses and protect hands and wrists by wearing gloves.

**Step 1:** Mix resin Component A (color formulation) with a spiral agitator until the liquid is a uniform 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 workpacs into smaller quantities – mix the entire workpac.**

## Application

**Step 1:** After the Resin is mixed, using a KEMPEROL® roller nap or brush apply the resin liberally and evenly onto the surface in even stroke. Covering one working area at a time, between 10 - 15 ft<sup>2</sup>.

**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 the color of the resin 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 3:** Apply the remaining 1/2 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 with no dry fleece visible. Work wet membrane to avoid any blisters, openings, or lifting at corners, junctions, and transitions. Always assure full resin saturation of fleece.

Cured KEMPEROL® 2K FR resin may be disposed of in standard landfills. This is accomplished by thoroughly mixing all components. Uncured KEMPEROL® 2K FR resin must be handled in accordance with local, state and federal regulations. Do not throw uncured resin away.

## Disposal

## Ordering Information

### KEMPEROL® 2K FR **Light Gray** Work Pack:

Item#	Size:
329-50-025	0.51 US GAL (1.93L) • 2.5 kg
329-50-055	1.03 US GAL (3.90L) • 5.0 kg
329-50-105	2.41 US GAL (9.12L) • 12.5 kg

### KEMPEROL® 2K FR **Military Beige** Work Pack:

Item#	Size:
329-51-025	0.51 US GAL (1.93L) • 2.5 kg
329-51-055	1.03 US GAL (3.90L) • 5.0 kg
329-51-105	2.41 US GAL (9.12L) • 12.5 kg

### KEMPEROL® 2K FR **Patina Green** Work Pack:

Item#	Size:
329-49-025	0.51 US GAL (1.93L) • 2.5 kg
329-49-055	1.03 US GAL (3.90L) • 5.0 kg
329-49-105	2.41 US GAL (9.12L) • 12.5 kg

### KEMPEROL® 2K FR **Reflect White (Reflect 2K FR)** Work Pack:

Item#	Size:
329-47-025	0.51 US GAL (1.93L) • 2.5 kg
329-47-055	1.03 US GAL (3.90L) • 5.0 kg
329-47-105	2.41 US GAL (9.12L) • 12.5 kg

### KEMPEROL® 2K FR **Stone Gray** Work pack:

Item#	Size:
329-48-025	0.51 US GAL (1.93L) • 2.5 kg
329-48-055	1.03 US GAL (3.90L) • 5.0 kg
329-48-105	2.41 US GAL (9.12L) • 12.5 kg

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