

Special Feature: Rainwater Systems - Repair or Replace?



In this article prepared for RCI Magazine, Mark Bruchez, Technical Director at roof waterproofing specialists KEMPER SYSTEM, argues that failed guttering can usually be repaired rather than replaced - and that the result is likely to outlast alternative replacement options.

Now is the time of year when the problems of failed valley gutters on commercial and industrial buildings start to become more than just a nuisance, forcing building owners to react quickly to avoid the costs and damage caused by leaking roofs. As a result, many replace the gutter in the belief that this is the best solution – not least as they've probably experienced repairs in the past that proved nothing more than a short lived, quick fix.

This doesn't have to be the case. Cold liquid waterproofing offers a real alternative to replacement that is cost effective, highly reliable and long lasting. It also avoids the disruption of replacement and, being a lightweight solution, there is no need for structural reinforcement.

Membrane bonds to existing substrates

KEMPEROL® waterproofing comprises a tear-resistant polyester membrane which is impregnated with resin in a single 'wet on wet' application that bonds directly to the existing gutter. It bridges adjacent sections to give a seamless membrane along the full length of the gutter without mechanical fixings. In addition, the KEMPEROL® reinforcing fleece is tailored on site to fit outlets and downspouts allowing them to be fully bonded and encapsulated within the gutter membrane itself.

KEMPEROL® is permanently elastic, which means it easily accommodates the thermal and structural movement that occurs on metal roofs. Indeed, this movement is typically the primary cause of existing gutter failure, for the constant expansion and contraction creates stresses on the mechanical fixings that eventually – almost inevitably – causes loosening and ultimate failure.

How KEMPEROL® Compares to Rigid Liners

One option that may be considered is rigid liners, however these will require fixings which are then subject to movement and will always be a weak point. Linings are positioned within the existing gutter, which inevitably reduces the volume and water carrying capacity. In many cases the roof overhang requires removal of the lower roof sheets to enable fitting of the liners – adding time and cost, and where the liners are sectioned these will need to be joined – creating additional weak points. The flexible type of ‘continuous’ liners will still require fixings and these long lengths are especially prone to thermal movement, whilst details such as sumps, corners and outlets have to be jointed – often done on site in awkward, constricted situations. Because liners are not bonded to the existing gutter, should failure occur it is notoriously difficult to then identify where the leak originates as rainwater will often track several metres beneath the liner before emerging below.

How KEMPEROL® Compares to Sealants and Coatings

Whilst coatings have the advantage of bonding to the gutter and can ‘bridge’ the failed joints, there is no membrane, which means the joint has no reinforcement and the coating will be subjected to the same movement and stresses that caused the original failure, making this often no more than a temporary, quick fix.

Solvent-Free Option Minimises Down-Time

On many commercial buildings and factories, repairs using solvent based systems may require production to be suspended either to avoid contamination (food and pharmaceutical processes) or for Health & Safety reasons (occupants). Because KEMPEROL® waterproofing is available in a solvent-free version, this disruption can be avoided.

Repairs to Finlock Gutters

Finlock precast concrete gutters were widely used on local authority housing, factories, schools, flats and other medium and low-pitch roofs.



Deterioration of the original linings over time, due to differential movement and expansion, leads to failure resulting in leaks which can affect both the external wall and the cavity itself resulting in structural damage and dampness to the internal wall.

Possible solutions include aluminium lining, felt and bitumen... through to outright removal and replacement. All are relatively expensive and in many cases are not reliable in the long term. This is one reason that Finlock gutter failure has proved such a difficult problem to building owners. KEMPEROL® 1K-SF or 1K-PUR are particularly suited for Finlock and valley gutter repairs where access is awkward as they are applied straight from the can and have an open working time allowing progressive application of the fleece and resin in a single stage operation.

Lead, Copper and Traditional Gutter Repairs



KEMPEROL® is a proven solution for repairs or replacement of lead and copper gutters that is also significantly more cost-effective. Indeed, with the cost of lead increasing threefold in the past few years, KEMPEROL® is increasingly used as a preventative measure on lead roofs to discourage theft and the damage and disruption that results. KEMPEROL® forms an encapsulating membrane which fully bonds to the lead or copper, providing a permanent repair whilst also protecting the valuable substrate against theft. The natural grey finish complements the traditional lead roof appearance, whilst a weathered verdigris finish can be specified for copper roofs and gutters if required.

Summary – An Economical Yet Long-Lasting Repair Solution

Whilst KEMPEROL® is renowned as a flat roof waterproofing material, its application for gutter repairs is perhaps less well known. It is however commonly used and widely proven in this situation, offering a long-lasting repair that is cost-effective and less disruptive. A further benefit for both building owners and contractors is that, whilst undertaking repairs to the gutter, any problems with the roof itself can be undertaken at the same time. This is common on metal roofs with corroded end-laps and loose/corroded fixings. KEMPEROL® can be used to patch repair the fixings and end laps to restore the integrity of the roof at a fraction of the cost of reproofing or recovering. All-in-all KEMPEROL® makes for a hugely versatile, professional waterproofing solution that contractors can use with absolute confidence.