# TECHNICAL BULLETIN – TB247

# MAINTENANCE PROCEDURES FOR EXPOSED BITUMINOUS SHEET MEMBRANES

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## INTRODUCTION & SCOPE

The long successful history of bituminous sheet membrane installations as roofing membranes has led to these membrane systems being taken for granted with little or no maintenance regime to ensure the longevity and water tightness of the membrane system. This document provides guidelines of a maintenance procedure for these membranes that may relate to the warranty period.

## WHY INSPECT?

The roof is exposed to all extremes of weather as well as airborne pollution and, in some instances, the activities by a variety of different trades damaging the applied membrane. The result is that these exposed membranes age by losing the volatile components from the bitumen over time while physical damage is left unreported.

Regular inspections are recommended at least **twice per year** and any remedial action required is to be completed as soon as possible. This includes checking the associated items such as the drainage system is not blocked and any new fittings that have penetrated the applied membrane are correctly detailed.

## PERIODIC ROOF INSPECTIONS

Periodic inspections start immediately upon completion of the membrane installation as the condition of the membrane can be recorded/photographed to be used for comparison purposes when inspecting in the future.

This initial inspection is to note the following:

- The actual membrane installed is **as specified** and accepted by the client.
- The installation has the correct number of layers of applied sheet membrane. Typically the minimum is a two layer system of compatible bituminous membrane.

- The membrane has been laid to fall to drainage to prevent the ponding of water with all top layer membrane overlaps facing downslope.
- Multiple layer bituminous sheet membranes are installed with the top layer overlaps staggered offset to the bottom layer. This ensures the bottom layer sheet overlaps are sealed again with the molten bitumen from the top layer and that the overlaps are not directly one on top of another. This evens out the membrane surfaces and minimises the potential for water to be held by the overlaps.
- The installation of the bituminous sheet membranes using gas torch techniques should finish with a narrow bead of molten bitumen showing along the edge of the overlap. If this bead is not present, water may be held in the overlap and penetrate the membrane system. The overlap should be probed to determine whether or not the overlap has been heated enough to achieve a watertight bond.
- The floor wastes are to be fitted with a clamp ring to ensure the edge of the sheet membrane can be mechanically secured into the waste collection bowl. If the incorrect floor waste has been used, the edge of the membrane can lift and moisture can penetrate under the membrane.
- Where fittings penetrate the applied membrane, ensure the detailing will prevent water getting behind/under the membrane.

- Note: fittings such as PVC piping can be damaged if the torch-on membrane is incorrectly applied. This normally is visible and can be corrected if required.
- All sheet membrane terminating edges should be either mechanically fixed with pressure seal/ metal flashings; or secured by liquid applied flashing systems incorporating a carrier bandage/reinforcement; or secured by clap rings at floor wastes or by being sealed into chases/regulets cut into vertical substrates.

Once the initial inspection has been completed, regular inspections can be programmed for at least twice per year and **immediately after any new work has been undertaken on the roof**. These inspections are essentially visual in nature.

## AREAS TO INSPECT

- The membrane is inspected to see if any sheet overlaps are opening. This includes checking the detailing around fittings penetrating the membrane and all sheet terminating edges.
- The membrane may appear to be not bonded to the substrate in places. This is generally due to residual moisture vapour building up under the impervious sheet membrane. Provided the membrane is intact, minor bubbling is generally not an issue unless it is found to be widespread. In some instances, additional moisture ingress can be due to water penetrating from adjacent external areas that have not been waterproofed.

- Check all sheet terminations as noted above. This applies particularly to all perimeter upturns and the like.
- Check for physical damage and assess if immediate remedial work is required. Very old, exposed bituminous sheet membranes may show cracking developing in the surface and the exposed surface may be powdery. In these instances, the membrane is nearing the stage at which consideration should be given to replacement of the membrane. Another option is to apply a new sheet membrane system directly over the old membrane.
- Check all gutters and drainage systems for blockages and clean out if required.
- Check for vegetation growth which can occur in open sheet joints and in gutters. Vegetation growth can result in the root system penetrating seam overlaps.
- The roof area should not be used for storage with items placed on the membrane. Limit foot traffic over the applied membrane to maintenance staff only. For regularly accessed areas, consider providing loose laid paving to define the walkway path.
- Should water penetration into the building have been detected, the inspection should attempt to relate the leakage to specific areas of the applied membrane in the first instance.

## WHEN TO CALL THE CONTRACTOR

Before any work/alterations/rectifications are commenced, call the waterproofing contractor as bubbling/leaks or other damage may be covered by warranty.

These guidelines are based upon the installed membrane being visible for inspection and that the installation has been done in accordance with the manufacturers published information and is in accordance with the relevant Australian Standards.

**IMPORTANT**

This Technical Bulletin provides guideline information only and is not intended to be interpreted as a general specification for the application/installation of the products described. Since each project potentially differs in exposure/condition specific recommendations may vary from the information contained herein. For recommendations for specific applications/installations contact your nearest ARDEX Australia or ARDEX New Zealand Office.

**DISCLAIMER**

The information presented in this Technical Bulletin is to the best of our knowledge true and accurate. No warranty is implied or given as to its completeness or accuracy in describing the performance or suitability of a product for a particular application. Users are asked to check that the literature in their possession is the latest issue.

**REASON FOR REVISION – ISSUER**

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