

TECHNICAL BULLETIN – TB243

Screeds & Waterproofing Membranes

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INTRODUCTION & SCOPE

The variety of waterproofing membranes currently available includes those that are compatible with most cementitious topping mortars (and/or tiled finishes) and those that are not. To add further confusion, some topping screeds are not to be applied over flexible membranes as bonded systems while self-levelling cements are not to be applied over membranes at all. This bulletin is a brief introduction to membranes to be used with either bonded or unbonded toppings and should be read in conjunction with TB244 Screed System.

WATERPROOFING MEMBRANES

Waterproofing membranes may be liquid applied systems or sheet membranes.

Liquid applied membrane systems include (but are not limited to) the following:

- Acrylic based and acrylic/polyurethane blended premixed flexible products
- Acrylic/cementitious two part flexible products
- Rubber latex based premixed and two part flexible products.
- Bituminous rubber latex premixed & spray applied two part flexible products
- Polyurethane premixed flexible products
- Polyurea spray applied semi-rigid membranes
- Epoxy resin based semi-rigid membranes

Where bonded toppings are to be installed, liquid applied membranes such as the acrylic and rubber latex based (excluding the bituminous latex membranes) systems are generally compatible with cementitious topping screeds and/or tile adhesives.

Some liquid applied membranes (e.g. epoxy based systems) can be successfully treated by “sand seeding” when newly applied so that the sand provides a mechanical key for the applied topping. However the “sand seeding” of polyurethane membranes has been much less successful and is not an Ardex recommended solution for bonded toppings. Other types of liquid applied resin-based membranes, including most polyurethane systems, are not suitable for bonded toppings although they may be used with unbonded screeds.

Sheet membranes may include (but are not limited to) the following:

- PVC sheet
- Butynol Rubber Sheet and modified Undertile variants.
- Polyolefin (TPO) sheet (other than PVC or Butynol)
- Bituminous sheet (Self-adhesive or Torch applied).

Only the Butynol rubber sheet membranes that have been modified for Undertile applications are suitable for bonded topping screeds. All other sheet membranes can be used with unbonded toppings.

BONDED VERSUS UNBONDED SCREEDS

Bonded topping screed installations are the most common as this allows the minimum thickness (15mm) to be applied thus limiting the weight load on the structure.



The substrate is generally concrete although it may be an applied membrane system over the concrete that is compatible with cement based toppings.

Bonded topping screeds are generally applied with a bonding slurry coat consisting of a liquid polymer additive (e.g. acrylic or SBR Rubber latex) mixed with cement. The bonding slurry is broomed thoroughly over the dry membrane and the mixed wet topping mortar applied over the still wet bonding slurry. The liquid polymer additive is also diluted with water and mixed into the screed mortar.

Unbonded topping screeds are not bonded to the membrane thus act to isolate the topping screed from substrates that may be contaminated, cracked or constructed with movement joints that would be unacceptable in the new floor coverings. Because they are unbonded, they also have to be self-supporting.

This generally means sand/cement toppings will include welded wire mesh reinforcement and have a minimum thickness of 40mm. However specialist toppings such as the Ardex A38 Rapid Set screed can be applied at a minimum 45mm thickness and does not require additional reinforcement although it is limited to approx. 40sqm panel/bay size with large areas to be installed in several panels/bays.

Unbonded toppings are placed over a slip sheet (e.g. double layer plastic sheet, ~200micron thick each layer) with the top layer of plastic placed at right angles across the base layer. . Thus the sand/cement (bonded or unbonded) and the Ardex A38 (**unbonded only**) toppings are the only approved systems applicable **over** a waterproofing membrane

Regardless of whether or not the screed is bonded or unbonded, the screed must be compacted to ensure close packing and maximum strength development. However sand/cement topping mortars and the Ardex A38 Rapid set screed must be compacted during installation, especially when the topping thickness exceeds 40mm.

Note: Self-levelling cements are not suitable for application over waterproofing membranes although they may be applied to prepared concrete substrates as bonded toppings and subsequently protected by an applied membrane. Self-levelling toppings are generally applied as a liquid mortar thus can be left to settle without further compaction. They are normally applied as levelling/smoothing toppings directly onto prepared concrete substrates where flat surfaces are required. Aggregate may be added to some self-levelling compounds that will allow the formation of minor fall to drainage. However these products must be protected from moisture penetration by an applied membrane.

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 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

New Bulletin

DOCUMENT REVIEW REQUIRED

NSW 02 9851 9100, **QLD** 07 3817 6000, **VIC** 03 9308 9255, **SA/NT** 08 8268 2511, **WA** 08 9256 8600

New Zealand (Christchurch) 643 384 3029

Web: <http://www.ardex.com> email: technicalservices@ardexaustralia.com

