



TECHNICAL BULLETIN – TB156

ARDEX LEVELLING COMPOUNDS, REPAIR MORTARS AND BULK FILLS SUITABLE FOR USE WITH ARDEX EXTERNAL MEMBRANES

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INTRODUCTION & SCOPE

A common situation occurs when a concrete slab roof or external structure has to be waterproofed when new or when the existing sheet membrane has to be removed and reinstated during restorations.

These membranes require a smooth surface on the concrete substrate and have to be graded with falls to waste to prevent ponding water. New concrete surfaces are commonly too rough, with incorrect or no falls to waste. During renovations where the existing membrane is removed, the mechanical removal may damage the substrate. This means that a levelling compound or repair mortar will be required.

ARDEX manufactures a range of levelling compounds and repair mortars and has designed a range of polymer-modified or bituminous-modified sand-cement screeds. This bulletin discusses the types of products that can be used with ARDEX Shelterbit bitumen torch-on, or self-stick membrane systems (e.g., ARDEX WPM116, ARDEX WPM185 and ARDEX WPM3000X), ARDEX Butynol sheet rubber, ARDEX liquid applied roofing membranes such as or ARDEX WPM909 and in some circumstances ARDEX WPM157 polyurethane membrane.

SCREEDS

What are the requirements for these screeding products? The major requirement for these screeds and toppings is that they are stable in external and potentially wet environments. This excludes internal smoothing products such as those based on ARDEX Ardurapid technology. They also need to be thermally stable to resist the blow torch used for Shelterbit systems and have sufficient porosity to accept the membrane primers and adhesives.

ADVANTAGES OF A LEVELLING COMPOUND

Levelling compounds have several advantages over traditional screeds, including rapid cure and ease of application. Typically, an ARDEX levelling compound will be cured sufficiently in 2-3 days for liquid-applied membranes to be placed. In contrast, sand-cement mortar screeds dry at 1mm per day, and fast-track work normally requires a moisture seal over the screed before the membrane application (for example, a sealing coat of ARDEX WPM300). ARDEX levelling compounds are also quick to apply and spread and provide superior smoothness and hardness compared to sand-cement screeds.

DISADVANTAGES OF A LEVELLING COMPOUND

The primary feature of ARDEX levelling compounds is their good flow, mainly intended to allow them to be easily applied, spread, and self-heal. This means that creating falls typically requires greater skill in trowelling or the addition of either coarse sand or fine aggregate to create a bulk fill.

ARDE LEVELLING COMPOUNDS

Three ARDEX levelling compounds are typically suitable for membrane application: ARDEX LQ92, ARDEX K301 and Ardex Ardite NA. These products are all suitable for external and wet usage, with ARDEX K301 being suitable for use as a wear surface in fully exposed external situations. The flow



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characteristics of these products allow them to be ramped and create falls to a moderate degree without bulk filling. They are poured onto the surface and placed and smoothed with standard flooring trowels, both hand and walk-along floor spreaders.

Product	Maximum thickness neat	Thickness with Aggregate or Sand
ARDEX Ardite NA	1-12mm	10-30mm with 2-5mm aggregate
ARDEX LQ92	1-12mm	10-25mm with 0.3mm washed dry sand (6 litres per 20kg bag of ARDEX LQ92) 10-30mm with 2-5mm aggregate (1:1)
ARDEX K301	2-20mm	10-30mm with 2-5mm aggregate

These levelling compounds are all used with ARDEX P51 primer for porous concrete surfaces. Where extra resilience is required due to the substrate's flexibility, ARDEX LQ92 can be mixed with ARDEX E25 Resilient Emulsion or ARDEX Abalastic liquid. ARDEX K301 can be improved with ARDEX E25 (see ARDEX TB151 for mix ratios).

Due to its flexible nature, ARDEX Ardite NA can be used for timber substrates in addition to concrete, so it may be suitable for use with ARDEX Butynol and ARDEX WPM116 'Fleecy Back' systems over external-grade plywood (consult ARDEX Technical Services for advice about particular applications).

BULK FILLS OR REPAIR MORTARS

The ARDEX range of repair mortars comprises five products: ARDEX A45, ARDEX A46, ARDEX BR340 and ARDEX BR345 Repair mortars and ARDEX K900BF bulk fill levelling compound. The repair mortars can be applied to horizontal and vertical surfaces by hand trowel. ARDEX K900BF is a semi-liquid coarse sand-filled levelling compound that can fill holes and deep fill or create falls or ramps on horizontal surfaces.

Product	Maximum thickness neat	Thickness with Aggregate or Sand
ARDEX A45	2-30mm	NA
ARDEX A46	2-30mm	NA
ARDEX BR340	10-80mm	NA
ARDEX BR345	10-80mm	NA
ARDEX K900BF	3-90mm	NA

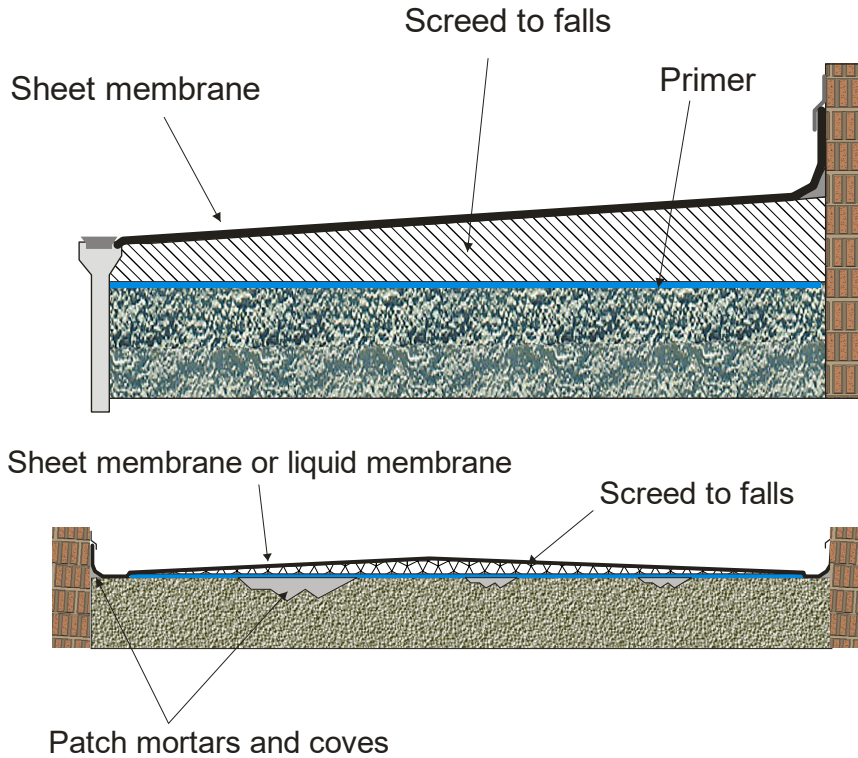
The repair mortars are not generally used with liquid primers or additives. ARDEX K900BF is used over concrete with ARDEX P51 primer (diluted 1:2 with water).

MODIFIED SAND-CEMENT SCREEDS

Traditional floor surfacing involves sand-cement screeds. ARDEX recommends two variations on this screeding system. They incorporate an SBR polymer into the screed to improve its surface bond and cohesive strength performance. These screeds use ARDEX Abacrete or ARDEX WPM405 additive in the gauging water. The additives are also incorporated into a slurry coat bonding bridge applied to the substrate. The screed is then applied onto the slurry coat bonding bridge 'wet-on-wet'.



Schematic diagrams showing typical applications for screeds/mortars and external membranes



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.

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DOCUMENT REVIEW REQUIRED

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Australia: 1300 788 780

New Zealand: 643 384 3029

Web: www.ardexaustralia.com

email: technical.services@ardexaustralia.com

Address: 2 Buda Way, Kempas Creek NSW 2178