



TECHNICAL BULLETIN – TB140

ARDEX UNDERLAYMENTS – LEVELLING OF FLOORS FOR THE INSTALLATION OF HIGH-BUILD EPOXY, POLYURETHANE AND PAINT COATINGS

15th January 2025

INTRODUCTION & SCOPE

Dry internal utility areas, walkways, plant rooms, domestic car garages, etc., often require an epoxy or paint finish as a protective coating. However, industrial floor coatings and paint finishes will mirror the original concrete surface, and unevenness and pitted surfaces look unsightly, resulting in high cleaning costs.

ARDEX Self-Smoothing Compounds can be applied in various applications and conditions from ~2mm thicknesses upwards to 50mm in one operation. Cement curing times as low as 48 hours are possible before coating.

PRECAUTIONS

When specifying this system, applicators must consider that ARDEX levelling compounds have a high compressive strength but a surface hardness equivalent to hardwood flooring. The applied coating will protect the surface from scratch damage and contamination by chemicals or oils.

Any damage in the subfloor, such as active cracks, can transmit through the underlayment and appear on the top surface. For this reason, it is important that all cracks be examined for activity and, if active, repaired by methods such as epoxy injection and metal pinning.

This recommendation is intended for high-build opaque-coloured coatings. It does not refer to clear seal coats or so-called 'feature' floors. Installation using clear seal coats is purely at the installer's risk. The preclusions for the different types of levelling compounds are shown in the table on the next page.

ARDEX does not recommend specific coating brands or offer warranties on such systems.

SURFACE PREPARATION

1. Concrete floors must be structurally sound, with all previous coatings removed, clean, and free of oil, grease, wax, latex compounds, curing compounds, efflorescence, laitance, dust, and all foreign matter, back to an open porous matrix of the concrete. Professional cleaning by mechanical means in line with sound building industry practices is advised.
2. Suggested cleaning and preparation methods, in line with the "International Concrete Repair Institute" Guideline No. 03732, are shot blasting, scarifying, or diamond grinding to provide a surface profile between CSP3 and CSP7.
3. All cracks in the subfloor should be repaired to prevent telegraphing through the underlayment.

DRY SLAB PRIMING

4. The primer for standard absorbent concrete is ARDEXP51 Primer.



5. Mix ARDEX P51 Primer 1:2 with water and apply evenly with a soft push broom. Do not leave any bare spots and remove all puddles and excess primer. Allow to dry to a clear, thin film (min 3 hours max. 24 hours). The levelling compound should not be applied until the primer is dry.

Note: Highly porous surfaces may require two coats of ARDEX P51, the first diluted at 1:3 and the second at 1:1 ratio.

DAMP SLAB PRIMING

6. Apply one coat ARDEX WPM300 by roller at 3m²/litre. Cure for two hours
7. Apply the second coat at 3m²/litre. While ARDEX WPM300 is wet, broadcast 0.5mm clean, dry sand over the surface at ~700 gms/m². ARDEX sells this sand under ARDEX Primer Sand or ARDEX Levelling Sand.
8. Cure overnight and broom and vacuum excess sand off. Apply the levelling compound.

LEVELLING COMPOUND APPLICATION

9. The cement-based levelling compound can be specified from the attached listing, taking into account curing time, thickness and recommended coatings.

Levelling Compound	Situation	Thickness range mm	Cure time to coating	Type of recommended coatings
ARDEX K15	Dry internal	>2mm	~48 hours	>2-3mm Epoxy or Urethanes*
ARDEX K80	Dry internal and industrial	5-50mm	~48 hours	Epoxy, Urethanes or 'floor paints'
ARDEX K275	Dry internal	2-25mm	3 days	>2-3mm Epoxy or Urethanes*
ARDEX K12	Dry internal	2-25mm	3 days	>2-3mm Epoxy or Urethanes*
ARDEX K301	External or wet/dry internal	2-30mm	7 days	Epoxy, Urethanes or 'floor paints'
ARDEX A45	Dry internal	2-30mm	>24 hours	>2-3mm Epoxy or Urethanes*
ARDEX A46	External or wet/dry internal	2-30mm	3 days	Epoxy, Urethanes or 'floor paints'

10. *The surface of the levelling compound should always be protected from wear, oil, salt, chemicals and water by applying a suitable wear protection system, such as an epoxy coating or flooring paint.*

**Epoxy or Urethane industrial coatings are to be high build, pigmented and opaque, solventless and tension free (e.g., 100% solids). Floor paints are to be pigmented.*

→The coating becomes the wear surface, not the levelling compound ←



ARDEX K301 and ARDEX A46 can be used as uncoated surfaces if required.

Note: Always install an adequate number of properly located test areas, including the finish coating, to determine the product's suitability for the intended use.

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-ISSUER

Change of slogan and address

DOCUMENT REVIEW REQUIRED

36 months or whenever third-party suppliers change their recommendations.

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