



System recommendation

SRO931 – Levelling Internal Dry Floors – New Concrete

This ARDEX recommendation is regarding the levelling of internal dry area floors prior to the installation of most types of floor finishes. It applies to new concrete substrates but does not apply to internal wet areas. The concrete must be structurally sound (at least 20 MPa compressive strength and at least 1.5 MPa tensile strength).

PREPARATION

All new concrete shall have completed the minimum 4-6 weeks curing & drying periods to allow the development of any micro-cracks as any cracking will continue through any applied levelling compound.

The moisture content of all concrete substrates shall be determined by the methods described in **AS1884-2012, Appendix A**. The relative humidity within (at 40% slab thickness) the concrete is determined (over 72 hours) and where the result is less than 75% RH, the levelling cement and/or sheet vinyl may be installed. Where the result is greater than 75% RH, the concrete is too damp for the installation of levelling compounds and sheet vinyl and a moisture barrier will be required.

For new concrete where the required minimum moisture content cannot be achieved in the available time, the following are systems for treating the “green” concrete prior to the application of levelling compounds:

1. **ARDEX S 4 Green Slab Seal** – applied as soon as the new concrete is hard enough to walk and within 48 hours of the concrete being cast, it acts as a curing agent. Alternatively it is applied to new concrete that is at least 14 days old (but less than 28 days old) with a moisture content of $\leq 7\%$ and falling. This is not suitable as a protection against rising damp.
2. **ARDEX WPM 300 Hydroepoxy** – applied as a moisture barrier to new concrete that is at least 7 days old and at least 20MPa compressive strength. This is applied in 2 coats with “sand-seeding” of the wet top coat.
3. **ARDEX WPM 368** – One part moisture barrier that does not require “sand seeding”. Applied over “green” concrete in 2 coats to achieve a waterproof barrier prior to installation of levelling compounds.

Note: the **ARDEX S 4 Green Slab Seal** treated concrete is sanded and vacuumed 24 hours after application to remove contaminants purged from the concrete. It is ready for the levelling cement to be applied with no further priming required.



All new concrete substrates shall be mechanically (by grinding, shot-blasting, scabbling or scarifying) prepared to remove all contaminants such as curing compounds, weak surfaces, laitance, waxy/oily residues and debris from other trades to achieve an open pored surface. Vacuum to remove residual dust.

The two moisture barriers also act as the prime coats for the levelling compounds so no further priming is required when a moisture barrier is used.

PRIMING – WHERE NO MOISTURE BARRIER HAS BEEN APPLIED

For aged, dry concrete, the surface must be primed with **ARDEX P 51** water based primer used in accordance with the product data sheet. This primer must be allowed to fully dry prior to application of the levelling cement.

The following table is a guide to the levelling compounds that are suitable for new concrete floor substrates. The last columns indicate methods for bulking out with washed and dried 2-5 mm aggregate to get to higher thicknesses. ARDEX sells an aggregate suitable for this in a 25 kg bag.

ARDEX Levelling and/or Smoothing Cement	Application Thickness	Internal Floor finish type	For bulking out with 2-5 mm aggregate	Bulked out thickness
K15 MICROTEC	Any thickness	Tiles- all types Linoleum, Vinyl, Carpet, Timber*	Equal volume mix with aggregate	10 mm - any thickness
K120	2.5 – 12mm	Tiles- all types Linoleum, Vinyl, Carpet, Timber*	Equal volume mix with aggregate	10-20 mm
K220	2 – 20 mm	Tiles- all types Linoleum, Vinyl, Carpet, Timber*	Equal volume mix with aggregate	10-30 mm
K250	1-25 mm	Tiles- all types Linoleum, Vinyl, Carpet, Timber*	Max 1:1 by weight mix with aggregate	10-50 mm



K12N	1.5 - 35mm	Tiles- all types Linoleum, Vinyl, Carpet, Timber*	Equal mix with aggregate by weight	10-50 mm
K900 Bulk Fill	3 -90mm	Tiles, Carpet and ARDEX levellers as above at less than 10mm thick.	Not required	3-90 mm
LQ92	Max 25mm	Tiles – all types	Equal volume mix with aggregate	10-25 mm
A45 & ARDEX A30	Max 30mm	Tiles- all types Linoleum, Vinyl, Carpet, Timber*	Equal volume mix with aggregate OR 1/3 volume mix with sand	20-50 mm OR 5-30 mm

**Strip timber and parquet are suitable but details from ARDEX Technical Bulletin TB036 need to be considered*

Notes: *ARDEX A 45 & ARDEX A 30 Patching / Repair Mortars can be used for ramping & coving to create falls in small areas. ARDEX LQ92 can also be used to create falls when bulked out with sand as per datasheet.*

Once the ARDEX levelling systems have set and dried, minor surface imperfections in the levelled surface can be smoothed using the **ARDEX Feather Finish** (maximum 3mm thick). The various floor finishes can now be applied. Tile finishes can be achieved with appropriate ARDEX tile adhesives & grouts. Carpet and resilient floor coverings can be installed using the following NEXUS Adhesives:

- For sheet vinyl coverings, use **NEXUS 880** High Performance Vinyl Sheet Adhesive.
- For vinyl plank use **NEXUS 880** or **NEXUS 870** Vinyl Plank Adhesive.
- For carpet tile use **NEXUS 840** Pressure Sensitive Adhesive.

All ARDEX products and NEXUS adhesives shall be mixed and used in accordance with the product data sheets. ARDEX Technical Bulletin TB102 relates to the addition of aggregate to the levelling cements and may provide more details than this document.



Disclaimer:

The recommendation selected is based upon questions answered on the ARDEX Australia website. This recommendation is designed as a general application for your described situation and should not be considered site specific documentation for general distribution. Always consult the latest relevant ARDEX Technical Bulletins and information on the product packaging and/or product data sheets (available on the ARDEX Website). Australian and other relevant standards should be followed during installation. If you have any further questions or would like further clarification please contact the ARDEX Technical Services Hotline on 1800 224 070 (9am to 5pm Monday to Friday).