System recommendation
SRO940 – Levelling Over Heated Internal Floor Slabs

This recommendation is regarding the levelling and smoothing of concrete floors where electrical heating elements are included in the concrete substrate. The concrete floors must be structurally sound and comply with the recommendations of AS1884-2012 (i.e. at least 20MPa compressive strength and at least 1.5MPa surface tensile strength). The levelling compounds may be covered with a variety of floor coverings such as resilient (e.g. vinyl or linoleum), carpet or all types of tile (e.g. ceramic, porcelain or natural stone). This recommendation is based upon **ARDEX Technical Bulletin TB029**.

PREPARATION

Internal concrete floors must be mechanically prepared (by grinding, short-blasting or scarifying) to achieve a roughened clean and open pored surface. Vacuum to remove dust.

The concrete substrate must be checked and corrected for moisture in accordance with **AS1884-2012 Appendix A**; or any other conditions that may affect the levelling cement and/or finished floor covering.

All expansion joints in the substrate must be carried through the levelling cement and any damaged or incomplete joint sealant shall be removed and replaced to reinstate the joint. These joints must not be covered with the levelling compound.

The heating system must be turned off 7 days prior to the installation of the leveller to allow the concrete temperature to reduce to between +10^{o}C and +18^{o}C.

PRIMING

The prepared concrete floor is to be primed with 1 volume of **ARDEX P51** primer diluted with 2 volumes of water. This primer is applied evenly over the floor with a soft broom and any puddles brushed out. Leave to dry to a clear, thin film (min. 3 hours)

The following **ARDEX** Levelling cements may be used;

ARDEX Product	E25 additive litres	Water litre	Thickness over heating system
K15 Microtec 20kg bag	1.6	4	≥3mm over heated substrate
K12 N 20kg bag	1.6	4	≥3mm over heated substrate
K80 20kg bag	Nil	4	≥6 mm over heated substrate

K55 **20kg bag**	Nil	5.25	≥3mm over heated substrate
K120 **20 kg bag**	1.6	3.5	≥3mm over heated substrate
K220 **20 kg bag**	1.6	3.5	≥3mm over heated substrate

FLOOR FINISHES

The following levelling cements can be used with the floor finishes nominated below.

For vinyl tiles, vinyl strips and vinyl sheet; carpet; floating timber; ceramic/porcelain tiles and rubber matting use:

ARDEX K 15; ARDEX K 12 N; ARDEX K 55; ARDEX K 120; ARDEX K 220;

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). 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 levelling compounds and NEXUS adhesives shall be mixed and used in accordance with the product data sheets. ARDEX Recommendation SRO931.002 relates to the addition of aggregate to the levelling cements and may provide more details than this document.

The installation of ceramic/porcelain floor tiles must be completed using flexible adhesives and grouts in accordance with the product data sheets and the recommendations of AS3958.1-2007. These **ARDEX** tile adhesives include:-

ARDEX X 77; ARDEX X 18; ARDEX X 17; ARDEX X 10

ARDEX Abaflex; ARDEX X 78+E90; ARDEX WA 100; ARDEX S28 +E90

Note: *Ensure the tile adhesive is applied with the appropriate size notched trowel to achieve the recommended bed thickness and contact to both the substrate and the tile.*

The grout systems consist of pigmented, cement based powders mixed with **ARDEX Grout Booster**. These **ARDEX** grouts are;

- **ARDEX FG 8** sanded grout for joints 1 - 8mm ;
- **ARDEX FS-DD** un-sanded grout for joints 1 - 4mm;
- **ARDEX WJ 50** sanded grout for joints from 5 – 50mm.

Ensure movement joints are included along all perimeters and at not more than 4m intervals in both directions of a grid pattern in large flor areas. The joints can be filled **with ARDEX ST Neutral Cure Silicone**.

COMMISSIONING

Heated floors are high stress situations and it is important to ensure the levelling cement is fully dry and cured prior to turning the heating system on.

Generally, allow a minimum of 3 days drying/curing time unless the installation has been completed in ambient conditions of 18^{o}C or more where the drying time can be reduced to 2 days prior to the installation of vinyl, rubber or carpet floor finishes.

Tiled floors must be left for 7 days after the installation of the tiles to ensure the tile adhesive and grout is fully dry and set.

The heating system is to be turned on and the temperature is to be raised at approximately 2^{o}C per day until the desired temperature is reached.

The maximum recommended operating temperature is 28^{o}C for the surface. The heating system must be controlled with an appropriate thermostat system.

ARDEX Technical Bulletin TB029 relates to levelling over in-floor heating and may have more details for you 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).