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# ARDEX K 31

## High Strength Self-leveling Underlayment

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Produces a smooth, flat, absorbent surface for the subsequent laying of all kinds of flooring materials

Cement-based

Leveling and smoothing of floor areas

For thicknesses from 1.5 – 10mm in one application

Suitable for external underlayment underneath floor coverings

Self-smoothing

Pumpable

Rapid hardening – walkable in approx. 3 hours

High early strength

Ready to receive some floor finishes in 24 hours

Crack free

Suitable for floors with underfloor heating

Ideal for use with Ardex floor covering adhesives

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本企业通过ISO9001:2000质量管理体系



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# ARDEX K 31

## High Strength Self-leveling Underlayment

### DESCRIPTION

ARDEX K 31 is a rapid hardening self leveling compound, walkable after approximately 3 hours and ready for use after 24 - 72 hours. Grey powder with special cements, high quality synthetic resins, selected fillers and other special additives.

### AREAS OF APPLICATION

Dry, internal, cementitious sub-floors or external underlayment underneath floor coverings

Filling, smoothing and leveling of concrete slabs and cementitious screeds prior to application of resilient floor coverings.

Heavily trafficked commercial floors such as hospitals and airports.

### SUBSTRATE PREPARATION

Principally, the substrate must be mature, sound, solid, clean and dry with good surface integrity – in other words, sufficiently cured, firm, load bearing and free from all contaminants such as dust, laitance, oil & grease, adhesive & coating residues, release agents, curing compounds, etc.

Use Ardex DGR to remove polish, wax, grease, oil and similar contaminating substances.

Concrete floors must be at least 4 weeks old.

Mechanically prepare the substrate surface using recommended preparation methods such as shot-blasting, scarifying, diamond grinding, shaving or other suitable methods to provide a roughened, clean, sound, solid and open porous surface.

Acid etching is not an acceptable method of cleaning the subfloor. Do not use other solvents or sweeping compounds.

Repair minor defects such as superficial cracking and holes using an appropriate Ardex product, ie: A 45 or solvent-free liquid epoxy. All joints and cracks subject to movement must be brought through to the final floor finish and suitably detailed for the particular application.

Substrates where the measured moisture level is above 5.5% or 75% by Relative Humidity (RH) test method must first be sealed with Ardex DPM or Ardex WPM300 prior to any leveling installation.

Direct to earth sub-floors must be protected from rising damp by containing a functioning damp-proof membrane (DPM) – if this is not included underneath the substrate, then use Ardex DPM or Ardex WPM300.

After suitable preparation, the substrate must be thoroughly vacuumed and properly primed for a successful installation.

For further information, contact Ardex Technical Services.

### PRIMING

Ardex P 51 (pre-diluted with water) should be applied to porous or rough absorbent substrates. Apply evenly with a bristle push broom. Allow to dry to a thin, clear film (minimum 1 hour - maximum 24 hours). Very absorbent substrates may require 2 coats of diluted P 51 primer. Allow each coat to dry sufficiently before proceeding.

Use Ardex resin primer on smooth, dense and non-absorbent substrates. Do NOT install leveling compounds until the primer has thoroughly dried or cured.

Refer to the relevant product datasheet for specific instructions in relation to each primer.

### MIXING

5.75L of clean water per 25kg bag of ARDEX K 31. ARDEX floor leveling products react and harden quickly when mixed with water. Thorough mixing with a heavy duty electric drill fitted with an Ardex mixing paddle in the shortest possible time is essential.

Always mix the powder into the water.

The normal mixing time for a 25kg bag is 1½ - 2 minutes.

Concrete or screed mixers, paint mixers, spiral mixers and hand mixing are not suitable.

### INSTALLATION

Ardex K 31 can be applied in temperature ranges (substrate & atmospheric) from 10° - 35°C.

Ardex K 31 has a flow time of approx. 20 minutes at 23°C. At lower temperatures this time is extended and at higher temperatures this time is shortened.

Work to an area that suits the size of the installation team such that fresh mortar is poured into workable mortar, which can then be spread, gauged and troweled within the flow time of the material.

Pour the mixed K 31 material onto the prepared & primed substrate and then spread into place using appropriate tools. Rake the material to gauge the thickness if required and then smooth the surface with a flat trowel if required. The use of a spiked roller may aid the final leveling of the material, but is not normally necessary. If used, the spiked roller should be used within the flow time of the product and limited to a maximum of 4 passes.

Studded shoes should be worn when walking in the fresh mortar to avoid leaving marks.

For ease & efficiency in applying material in large areas, ARDEX K 31 can be pumped with continuously working auger or piston style pumps with a capacity of 20 – 40L. of mortar per minute. If the pumps are not in operation for 15 minutes they should be cleaned.

Protect the surface of the setting material from wind, sunlight and contamination for 24 hours.

The application of a small test area prior to complete installation is recommended in unusual circumstances.

### APPLICATION THICKNESS

Ardex K 31 can be applied from 1.5 – 10mm in one application.

Higher thicknesses can be achieved by adding a suitable washed & dried aggregate. Finish the surface with a neat coat of K 31 if required.

Gradient smoothing and ramping may be achieved by water reduction and the addition of fine, clean & dry sand.

For further information, contact Ardex Technical Services.

### SPECIAL APPLICATIONS

In such cases where the floor will be subjected to extremely heavy traffic & loads or vibration, K 31 should be used in conjunction with Ardex E 25 Resilient Emulsion. In such instances, use a mixture of water (4.7L) and E 25 (1.9L) as the gauging liquid.

For external underlayment use, please contact ARDEX Technical Services for professional advice.

### CURING & DRYING TIMES

#### Walkability

Allow approximately 3 hours at 23°C before foot traffic.

#### Application of Floor Coverings

Porous floor coverings such as conventional carpet, ceramic tiles and floating floors can be applied onto the cured K 31 after 24 hours, regardless of thickness.

Direct stick impervious floor coverings such as vinyl, rubber and linoleum can generally be applied after 24 hours for thicknesses less than 5mm. For thicknesses from 5 – 10mm, allow 48 hours curing.

Refer to the relevant product datasheet or Manufacturers' instructions for specific application and usage details in relation to the chosen floor covering.

#### Full Cure

Ardex K 31 will gain sufficient strength after 16 hours to allow access for the commencement of finishing or light-medium traffic activity.

Allow 7 days curing at 23° before subjecting the material to full service conditions.

Note:- higher temperatures may reduce curing & drying times, whilst lower temperatures will extend the drying time.

### CLEAN-UP

Clean all tools, equipment, hands, etc with water immediately after use. Hardened material will have to be removed using mechanical means.

# ARDEX K 31

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### COVERAGE

Approximately 1.6kg/mm/m<sup>2</sup>.

Thus a 25kg bag will cover approximately 5m<sup>2</sup> at 3mm thickness – assuming a flat surface.

### PACKAGING

25kg multi-layer paper bags incorporating a poly liner.

### STORAGE & SHELF LIFE

Ardex K 31 has a shelf life of approximately 6 months if stored in dry conditions in the original un-opened packaging.

### TECHNICAL DATA

#### General

Packaging:	25kg
Coverage:	5m <sup>2</sup> @ 3mm
Shelf-Life:	6 months

#### In Accordance with Ardex Quality Standards

##### Powder

Mixing Ratio:	5.75L Water to 25kg Powder
Bulk Density of Powder:	~1.3kg/L
Consumption:	~1.6kg powder/mm/m <sup>2</sup>

##### Wet-Fresh-Mixed Mortar

Application Temperature:	10°C – 35°C
Mixed Mortar Density:	~ 2.0kg/L
pH of Fresh Mortar:	~ 12
Flow Time (23°C):	~ 20 minutes
Walkability (23°C):	~ 3 hours
Application Thickness:	1.5 – 10mm
Thickness with Aggregate:	10 – 25mm

##### Cured Mortar

Ready for Floor Coverings (23°C / 50%RH):	
up to 5mm,	~ 1 day
up to 10mm,	~ 2 days
Resistant to Chair Castors:	Yes
Suitable with Floor Heating:	Yes
Moisture Tolerant:	Intermittent:
Yes; Flooding:	No
Freeze-Thaw Stable:	No

#### In Accordance with Chinese National Standard:-JC/T985-2005

##### Flow

Initial:	> 140mm
After 20 minutes:	> 130mm

##### Compressive Strength

After 1 day:	typically>12 MPa
After 28 days:	typically 38-43 MPa

##### Flexural Strength

After 1 day:	typically>4 MPa
After 28 days:	typically 8.5-11 MPa

Adhesion Strength: typically>1.8 MPa

Shrinkage: typically < 0.1%

Abrasion Resistance: approx 0.4g

Impact Resistance: No cracks or de-lamination

### HEALTH & SAFETY

Ardex K 31 is considered non-hazardous in normal usage, however it contains Portland cement & quartz sand and reacts alkaline which may cause some skin irritation after prolonged contact. Avoid generation and breathing of dust. Avoid contact with eyes or skin. Wear suitable protective dust mask, gloves and safety glasses. In case of contact with eyes, rinse for several minutes under running water. In case of contact with skin, rinse with running water. If dust is inhaled, remove to fresh air, ensure breathing passages are clear and rinse mouth with water. In the case of adverse symptoms, seek medical advice.

Physiologically and ecologically safe when in the cured state.

For further information, please consult the Material Safety Data Sheet (MSDS).

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The technical details, recommendations and other information contained in this datasheet are given in good faith and represent the best of our knowledge and experience at the time of printing. It is your responsibility to ensure that our products are used and handled correctly and in accordance with any applicable National or Local Standard, our instructions & recommendations, and only for the uses they are intended. Regional specific recommendations, standards, codes of practice, building regulations or industry guidelines may affect specific installation recommendations. Our Company policy is one of continuous Research & Development; we therefore reserve the right to update this information at any time without prior notice. We guarantee the consistent high quality of our products; however, as we have no control over site conditions or the execution of the work, we accept no liability for any loss or damage which may arise as a result thereof. The supply of our products and services is also subject to certain terms, warranties & exclusions; and these details will be made available to you on request. You should make yourself familiar with them.