



CI/SfB

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PRODUCT DATA SHEET

# ARDEX A 38

## Rapid Hardening and Drying Cement for Floor Screeds in Internal or External Locations

### Features

- Rapid Hardening – walkable in 3 hours
- Receives ceramic and natural stone tiles directly after only 4 hours for bonded, unbonded and floating screeds
- Install resilient, wood finishes and vinyl floor coverings after 48 hours
- After only one day the compressive and tensile bending strengths of ARDEX A 38 exceeds the acceptable minimum attained by an ordinary cement screed after 28 days
- Can be used with underfloor heating systems
- Can be pumped for fast application



What is the Rapidry Plus Formula?

It is the ability to totally bind the water used for mixing within the mortar, ensuring rapid drying and hardening properties



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# ARDEX A 38

## Rapid Hardening and Drying Cement for Floor Screeds in Internal or External Locations

### DESCRIPTION

ARDEX A 38 is a special cement for producing a rapid setting, rapid hardening and rapid drying floor screed for internal or external use, including swimming pools, allowing ceramic tiles or stone to be fixed after only 4 hours, even on unbonded and floating screeds. After only one day the compressive strength and tensile bending strength of an ARDEX A 38 screed exceeds the acceptable minimum attained by an ordinary cement screed after 28 days and is also dry, irrespective of thickness. ARDEX A 38 can be used to produce a bonded screed, an unbonded floor screed laid onto a membrane, or a floating floor screed laid onto a compressive quilt/insulating material. Bay divisions and expansion joints should be incorporated as for normal cement/sand screeds, taking into account the advice given in the British Standard Code of Practice for the flooring being subsequently applied.

The mortar is mixed and applied in the same way as for normal cement/sand mortar, except that the working time is reduced to approximately 60 minutes at 20°C. ARDEX A 38 can be walked on 3 hours after application and is ready for bonded, unbonded and floating screeds to receive ceramic tiling/stone after 4 hours at 20°C.

**NOTE:** Where the concrete base is insufficiently dry, or is direct to ground, the ARDEX A 38 cement and sand screed should be applied as an unbonded or floating screed on a suitable DPM. ARDEX A 38 cement and sand screed may be bonded directly to damp and/or direct to ground concrete slabs. However, the rapid drying properties will be negated due to the moisture in the underlying substrate.

### USE

ARDEX A 38 is used to produce bonded, unbonded and floating screeds in internal or external situations where early foot traffic is required and where rapid hardening is essential, e.g. to allow ceramic tiles or natural stone tiles to be laid after 4 hours irrespective of screed thickness.

See overleaf for the grades of sand to be used. A 1:5 mix is suitable for all normal screeding situations. ARDEX A 38 screeds are suitable for ground supported concrete floor slabs without an effective damp proof membrane, and in wet locations. Screeds made using ARDEX A 38 are not suitable for use as a wearing surface.

### THICKNESS

ARDEX A 38 should be applied at the following thicknesses for normal cement/sand screeds i.e.:

- Minimum 15mm, (design thickness up to 40mm) for bonded screeds.
- Minimum 50mm for unbonded screeds.
- Minimum 75mm for floating screeds, {65mm in lightly loaded (domestic) locations}.

### SUBSTRATE PREPARATION

#### ***Bonded Screed***

The ARDEX A 38 cement and sand screed can be laid as a bonded screed by applying an ARDEX A 38 grouting slurry to a dry and suitably prepared concrete base. To prepare the grouting slurry for internal use, dilute ARDEX E 100 with an equal volume of water. Mix the ARDEX A 38 cement with an equal volume of sand and then mix with the diluted bonding agent to produce a grouting slurry of creamy consistency.

The ARDEX A 38 cement and sand screed mortar must be placed and compacted onto the base 'fresh in fresh', whilst the grouting slurry is still wet and workable.

#### ***Unbonded Screed***

For unbonded screeds it is good practice to ensure that the concrete slab surface is reasonably true and flat prior to applying a separating or damp proof membrane.

#### ***Floating Screed***

For floating screeds, place a suitable separating or damp proof membrane over the insulation before applying the screed mortar.

An unbonded or floating ARDEX A 38 screed can receive ceramic or natural stone tiling after 4 hours.

### MIX PROPORTIONS

Maximum 1 part by weight of ARDEX A 38 screeding cement to 5 parts by weight screeding sand. The sand used should be good quality well graded 0/8mm sand.

BS 8204-1:2003 recommends that screeding sands are classified to BS EN 13139. Alternatively a 0/8mm fine aggregate with fines category 1 with range MP should be used.

Experience has shown that sand complying with the following grading table provides a workable screeding mortar with good compactability.

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| <i>Sieve size (BS 410)</i> | <i>Proportion by dry mass passing nominal mesh size.</i> |
|----------------------------|--|
| 10.00mm                    | 100%   |
| 5.00mm                     | 90% – 100%   |
| 2.36mm                     | 65% – 97%  |
| 1.18mm                     | 40% – 90%  |
| 600µm                      | 24% – 75%  |
| 300µm                      | 8% – 40%   |
| 150µm                      | 0% – 10%   |
| 75µm                       | 0% – 3%  |

Where the available screeding sand is good quality, but does not have the required coarse fraction, a nominal 6mm aggregate can be mixed with the screeding sand. The ratio of screeding sand to 6mm aggregate will depend upon the actual gradings involved and the workability of the mix. For example; a mix of 1 x 25kg bag of ARDEX A 38 with 2 x 25kg bags of nominal 6mm aggregate and 3 x 25kg bags of screeding sand.

Total mix water, including the water contained in the sand/aggregate should typically range from an optimum of 10 litres up to a maximum of 11 litres per 25kg bag of ARDEX A 38 screeding cement.

Where the screed thickness is consistently greater than 50mm a fine concrete mix can be used by partially replacing some of the screeding sand with a suitable amount of 8mm or 10mm single sized aggregate. The optimum proportions of cement to sand, or to sand plus aggregate, should be determined within the mix proportions of 1 part ARDEX A 38 cement with 5 parts by weight of sand or sand plus aggregate in order to obtain good workability and achieve the required soundness category.

The sand or fine and coarse aggregates used should not contain lime or other materials that could be detrimental to the workability of the screed mortar during application or the performance of the set and hardened screed. Do not add any other cement or lime materials to ARDEX A 38 mixes.

### MIXING

Mix to a normal screed mortar consistency. If a mixer is used it should be of a pan, trough or other forced action type. Normal 'free-fall' mixers are not suitable for mixing semi-dry screed mortars. Use clean equipment and do not use other cements, lime or screed additives etc., in the mix.

### WATER CONTENT

Add sufficient water to obtain a workable mix. With an evenly graded, fairly dry sand, the water requirement will normally be about 10-11 litres per 25kg bag of ARDEX A 38. When a sample of mortar is squeezed in the hand the sample should retain its shape and not crumble, the hand being left slightly moist. When a sample is compacted on the base, no film of water should form on the surface. To achieve rapid drying and rapid strength development etc., as stated, not more than 11 litres should be added (including the water contained in the sand) per 25kg bag of ARDEX A 38 cement.

### APPLICATION

The working time of the mixed mortar is approximately 1 hour at 20°C, therefore mixing, placing, compaction and trowelling off must proceed without delay.

The amount of mortar mixed and the area to be screeded should be limited so that trowelling off and finishing can be completed within the working time. Where a new bay is laid against a set and hardened screed it is recommended that such daywork joints are vertical and treated with the grouting slurry and may be tied together with steel reinforcement. Apply ARDEX A 38 cement and sand mortar at temperatures above 5°C.

### *Application on a floor heating system:*

When an ARDEX A 38 screed has been laid on a hot water floor system, 3 days should be allowed to elapse before heating up the screed to a temperature of 25°C and maintained for a further 3 days. The maximum floor temperature should then be used and maintained for a further 4 days. In doing so, draughts must be avoided. The floor should then be allowed to cool down to room temperature (above 15°C) before laying floorcoverings.

**NOTE:** ARDEX A 38 screed can be thermally loaded up to 65°C.

### SURFACE FINISH

Screeds are not designed as wearing surfaces and the screed surface should be given adequate protection once dry against damage, wear and contamination during subsequent building operations. Protective covering will also minimise any curling and lipping at joints in unbonded or floating screeds.

### PUMPING

It is possible to pump ARDEX A 38 screed mixes using a proprietary screed pump. Contact our Technical Services Department for further details.

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### COVERAGE

Approximately 0.31kg ARDEX A38 cement per m<sup>2</sup> for each millimetre of screed thickness using a 1:5 mix. For slurry bonding allow an extra 2 x 25kg ARDEX A38 cement and 3 x 5kg of bonding agent ARDEX E 100 per 100 square metres.

### PACKAGING

ARDEX A38 is packed in paper sacks incorporating a polyethylene liner – net weight 25kg.

### STORAGE AND SHELF LIFE

This product must be stored in unopened packaging, clear of the ground in cool dry conditions and be protected from excessive draught. If stored correctly, as detailed above, the shelf life of this product is 12 months from the date shown on the packaging.

### PRECAUTIONS

ARDEX A 38 is considered non-hazardous in normal usage. The presence of cement in the product gives an alkaline mortar, which may cause some irritation if prolonged contact with the skin takes place. Care should be taken to avoid inhalation or ingestion of dust and prevent contact with the eyes. For further information consult the relevant health and safety data sheet.

### TECHNICAL DATA

|                                |            |
|--------------------------------|------------|
| Weight of fresh mortar approx. | 2kg/litre  |
| Working time at 20°C approx.   | 60 minutes |

### Compressive Strength 1:5

|               |                        |
|---------------|------------------------|
| After 1 day   | 25.0 N/mm <sup>2</sup> |
| After 7 days  | 40.0 N/mm <sup>2</sup> |
| After 28 days | 45.0 N/mm <sup>2</sup> |

### Tensile Bending Strength 1:5

|               |                       |
|---------------|-----------------------|
| After 1 day   | 4.0 N/mm <sup>2</sup> |
| After 7 days  | 4.5 N/mm <sup>2</sup> |
| After 28 days | 5.5 N/mm <sup>2</sup> |

### Drying Time

After 4 hours suitable to receive ceramic tiles/natural stone to bonded, unbonded and floating screeds.

### Soundness (BRE Screed Test)

Annex D and E of BS 8204-1:2003 contains advice on the use of this in situ crushing resistance test on bonded, unbonded and floating screeds. The installed ARDEX A38 can normally be tested after 24 hours using the BRE screed tester, if required. The depth of an indentation of a correctly mixed and compacted screed should comply with the requirements of the floor finish and category of use.

### Moisture content

Should the moisture content need to be determined the specific properties and composition of an ARDEX A38 screed mean that the moisture content cannot be determined with electric conductivity or hygrometer methods. The speedy moisture tester (Carbide method) must be used.

Please consult ARDEX Technical Services for further advice. The following British Standard Codes of Practice can be referred to for advice on screeding:-  
*BS 8204: Part 1. In situ Floorings – Bases and Screeds.*

*BS 5385: Part 3. Appendix C. Ceramic Floor Tiling and Mosaics.*

*BS 8000: Part 9. Code of Practice for cement/sand floor screeds and concrete floor toppings (Workmanship on building sites).*

**NOTE:** The information supplied in our literature or given by our employees is based upon extensive experience and, together with that supplied by our agents or distributors, is given in good faith in order to help you. Our Company policy is one of continuous Research and Development; we therefore reserve the right to update this information at any time without prior notice. We also 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.

Country specific recommendations, depending on local standards, codes of practice, building regulations or industry guidelines, may affect specific installation recommendations.

**TECHNICAL ADVICE HELPLINE:**

**01440 714939**

**ARDEX online: [www.ardex.co.uk](http://www.ardex.co.uk)**