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PRODUCT DATA SHEET

ARDEX A 23

Rapid Hardening Cement for Floor Screeds

Features

- Rapid hardening – walkable after 5 hours
- Install ceramic tiles after 48 hours and natural stone after 72 hours
- Install resilient and wood floor finishes after 6 days
- Apply as a bonded, unbonded or floating screed
- Can be used with underfloor heating systems
- Can be pumped for fast application



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ARDEX A 23

Rapid Hardening Cement for Floor Screeds

DESCRIPTION

ARDEX A 23 is a special cement for producing a rapid hardening floor screed for internal use which allows ceramic tiles to be fixed after 48 hours, natural stone after 72 hours, and resilient floor coverings after 6 days.

USE

ARDEX A 23 is used to produce bonded, unbonded and floating screeds in internal locations where early foot traffic is required and where rapid drying is essential, e.g. to allow ceramic/porcelain tiles to be laid after 48 hours.

A 1:7 mix is suitable for most normal screeding situations.

ARDEX A 23 can be installed on ground supported concrete slabs if an effective damp proof membrane is present. ARDEX A 23 is not suitable as a wearing surface.

THICKNESS

ARDEX A 23 should be applied at the conventional thicknesses for normal cement/sand screeds i.e. Minimum 20mm, (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 23 cement and sand screed can be laid as a bonded screed by applying ARDEX A 23 grouting slurry to a dry and suitably prepared concrete base. If the concrete is not dry, 2 coats of ARDEX DPM may be used prior to applying the ARDEX A 23 screed 'fresh in fresh' in a priming layer of ARDEX R 3 E or a third coat of ARDEX DPM. To prepare the grouting slurry for use in internal dry locations, dilute ARDEX P 51 with an equal volume of water. Mix the ARDEX A 23 cement with an equal volume of screeding sand and then mix with the diluted bonding agent, to produce a grouting slurry of creamy consistency.

The ARDEX A 23 cement and sand screed mortar must be 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 layer or damp proof membrane.

Floating Screed

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

MIX PROPORTIONS

Maximum 1 part by weight of ARDEX A 23 screeding cement to 7 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.

Sieve size (BS 410)	Proportion by dry mass passing nominal mesh size.
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 20kg bag of ARDEX A 23 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 9 litres up to a maximum of 11 litres per 20kg bag of ARDEX A 23.

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 23 cement with 7 parts by weight of sand, or sand plus aggregate, in order to obtain good workability and achieve the required soundness category.

The sand, fine or 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 23 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 litres per 20kg bag of ARDEX A 23. 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 strength development, as stated, not more than 11 litres should be added (including the water contained in the sand) per 20kg bag of ARDEX A 23 cement.

APPLICATION

The working time of the mixed mortar is approximately 45 minutes 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 23 cement and sand mortar at temperatures at 5°C and rising.

Application on a floor heating system:

When an ARDEX A 23 screed has been laid on a hot water floor system, 6 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.

SURFACE FINISH

For fixing ceramic tiles and quarry tiles, etc., the screed should be finished with a wood float. Prior to laying thin floorcoverings e.g. vinyl sheet, a very smooth surface may be obtained by priming the ARDEX A 23 with ARDEX P 51 and applying ARDEX K 11 or ARDEX K 15 NEW Sub-Floor Levelling and Smoothing Compounds. If a primer free installation is required then use ARDITEX NA.

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

PUMPING

It is possible to pump ARDEX A 23 screed mixes using a proprietary screed pump. Contact our Technical Services Department for further details.

COVERAGE

Approximately 0.27kg ARDEX A 23 cement per m² for each millimetre of screed thickness using a 1:7 mix. For slurry bonding allow an extra 2 x 20kg ARDEX A 23 cement and 4 x 5kg of bonding agent ARDEX P 51 per 100 square metres.

PACKAGING

ARDEX A 23 is packed in paper sacks incorporating a polyethylene liner – net weight 20kg.

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 23 contains Portland cement and, therefore in line with current legislation, is classified as irritating to eyes and skin. For this reason the following precautions should be observed; Avoid contact with skin and eyes; in case of contact with the eyes rinse immediately with plenty of water and seek medical advice; wear suitable gloves and keep the product out of reach of children. Avoid generation of airborne dust during mixing. 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. Up to 45 minutes

Compressive strength using 0-8mm graded aggregate.

7 days 21N/mm²

28 days 30.0 N/mm²

Drying Time

Under good conditions after 48 hours, normally suitable to receive ceramic tiles to bonded, unbonded and floating screeds. After 6 days suitable to receive resilient floorcoverings and wood floors. The time taken to harden, and the drying time of the ARDEX A 23 cement, is determined by screed thickness and ambient conditions on site.

Low temperatures will slow down the rate of hardening whilst high temperatures will accelerate hardening, thus reducing the working time.

NOTE: High or low relative humidity will slow or accelerate the drying time respectively.

Drying times apply to 23°C and 50% relative humidity for screeds up to 50mm thick. The use of a Speedy moisture tester is recommended to determine the moisture content prior to applying the appropriate floorcovering.

For rapid drying screeds that dry uniformly, irrespective of thickness, consult the ARDEX A 38 or ARDEX A 35 data sheets. Where higher early and late strength development is required, a 1:5 mix may be used. Note the maximum mix water content that should be used, including the moisture in the aggregate, is 10.5 litres per 20kg bag of ARDEX A 23 cement for floor 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 A 23 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 testing of ARDEX A 23 cement/sand screed. Should the moisture content need to be determined 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.

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