



CI/SfB

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OCTOBER 2005  
BUILDING DIVISION  
PRODUCT DATA SHEET

Now fixes  
porcelain and  
fully vitrified  
tiles!

# ARDEX S 16

## Grey Rapid Hardening and Rapid Drying Tile and Natural Stone Adhesive

### Features

Can be trafficked and grouted 2-3 hours after fixing

Suitable for fixing porcelain and fully vitrified tiles

For internal, dry or intermittently damp locations

For use on walls and floors

Ideal for natural stones - reduced risk of water staining

Available in 22kg and 11kg bags

Rapidry Formula



What is the  
Rapidry Formula?

It is the ability of the mortar to totally bind the water used  
for mixing, virtually eliminating the risk of water staining.



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# ARDEX S 16

## Grey Rapid Hardening and Rapid Drying Tile and Natural Stone Adhesive

### DESCRIPTION

The BS EN 12004 C2 FT designation for ARDEX S 16 classifies the adhesive as an "improved fast setting cementitious adhesive with additional characteristics and reduced slip". ARDEX S 16 is a special rapid hardening and drying, cement-based adhesive for fixing ceramic and natural stone floor and wall tiles, glass mosaics, porcelain and fully vitrified tiles and rigid foam insulating materials, e.g. polystyrene, etc., in internal situations. Tiles and mosaics fixed with ARDEX S 16 can be grouted and subjected to loads only 2 hours after fixing at normal temperatures. It is particularly suitable for use in situations where the adhesive bed has to dry quickly or the tiling has to be grouted and put into use shortly after fixing.

ARDEX S 16 is a grey powder based on special cements, high quality synthetic resins and fillers, which is mixed with water to produce a slump free, easily applied mortar with a working time of approximately 30 minutes.

The mortar adheres strongly to most building materials such as concrete, cement/sand render and screeds, brickwork, blockwork, etc. In some cases surface preparation, such as priming may be required prior to fixing. For fixing on wood floors consult our ARDEX-FLEX 7001/7001 W Timber System data sheet.

The use of the ARDEX E 90 mortar admix allows direct fixing on existing clean glazed surfaces without the need for priming. For asphalt floors consult our data sheet "Fixing Ceramic Tiles to Internal Asphalt Floors".

ARDEX S 16 is not recommended for fixing tiles in swimming pools, external locations, etc. In these situations we recommend the use of ARDEX-FLEX S 38 for bedding floor tiles, and ARDEX X 7, ARDEX X 7 G Plus, ARDEX-FLEX 5000, ARDEX-FLEX 5001 or ARDEX-FLEX 6001 as appropriate for wall and floor tiling.

### SURFACE PREPARATION

The surface being adhered to must be clean, firm, free of dust, dirt, oil, grease and other barrier materials as well as being strong enough to support the weight of the tiles being fixed. Ensure that the background's required drying time, as given in the relevant part of BS 5385, is allowed to elapse prior to fixing the tiles.

ARDEX S 16 can be applied to dry or moist surfaces, e.g. cement/sand, concrete etc., but moisture sensitive materials must be dry and remain dry after fixing. Gypsum plaster surfaces must be thoroughly dry and then primed with ARDEX P 51 primer, diluted 1 part to 3 parts water. Wood and wood-based surfaces, e.g. blockboard, plywood, etc., should be dry, sealed on their backs and edges and rigidly braced to provide a dimensionally stable background as described in BS 5385.

Tiles can then be fixed using ARDEX S 16, incorporating ARDEX E 90 mortar admix, after priming the face of the boards with ARDEX P 82 primer. Alternatively, when fixing to suitable wood-based boards on floors the use of undiluted ARDEX P 51 primer can be used. When fixing to very smooth, dense and impervious surfaces, such as existing ceramic tiles (glazed or unglazed), glazed bricks, terrazzo etc., ARDEX E 90 mortar admix should be incorporated in the ARDEX S 16.

### MIXING

ARDEX S 16 powder is added to clean water in a clean container whilst stirring and mixed thoroughly to give a slump free, easily worked mortar. The mix proportions by volume are:-

Approximately 3 parts ARDEX S 16 powder to 1 part water. A 22kg bag requires approximately 5<sup>1</sup>/<sub>2</sub>-6 litres of water.

The mortar is immediately ready for use and has a working time of approximately 30 minutes at a temperature of 20°C.

**NOTE:** Do not mix more than can be used within this time. The working time and strength development will be retarded at lower and accelerated at higher temperatures. Do not apply at temperatures below 5°C.

### FIXING TECHNIQUES

For fixing ceramic tiles or mosaics, use a notched trowel to give a ribbed mortar bed on the substrate, into which the tiles are firmly bedded whilst the mortar is moist and soft. Use a 3mm x 3mm notch at 6mm centres for mosaics and thin flat backed wall tiling, a 5mm x 5mm notch at 10mm centres for general wall tiling and 8mm x 8mm notch at 16mm centres for floor tiling. Floor tiles and tiles with keyed back profiles must also be buttered to ensure solid bedding. The area covered with ARDEX S 16 mortar should be limited so that tiles can be fixed within the open time. If the mortar is applied immediately after mixing, the open time is approximately 10 minutes but this time will be greatly reduced if the mixed mortar is left longer before applying. On particularly rough or uneven surfaces it is advisable to pre-level the surface with ARDEX S 16 mortar and once this initial layer has hardened, (approximately 1 hour after application) proceed with the normal fixing technique.

Fix open-textured rigid foam insulation panels, boards, glass-wool slabs, etc., by applying strips of mortar on the backs of the boards immediately before bedding onto the wall or ceiling, and applying when necessary, the additional mechanical fixings.

### GROUTING

Ceramic tiles and mosaics fixed in ARDEX S 16 may be grouted as soon as the tile bed is sufficiently firm, usually 2 to 3 hours after fixing at 20°C. The tile joints should be grouted with the appropriate ARDEX or ARDEX-FLEX grout mortar. Where chemical-resistant jointing is necessary, or where impervious, easily cleaned jointing is required, we recommend ARDEX WA epoxide grouting compound.

### COVERAGE

A 22kg bag of ARDEX S 16 will yield approximately 16.3 litres of mortar, using approximately 1.35kg of powder per m<sup>2</sup> per mm thickness of adhesive bed. The actual coverage achieved in practice will depend on the back profile of the tile and notched trowel and technique used to bed the tiles e.g. a 22kg bag of ARDEX S 16 will cover approximately 9.3m<sup>2</sup> when using a 5mm x 5mm square toothed and notched trowel held at an angle of 45 degrees.

### PACKAGING

ARDEX S 16 is packed in paper sacks incorporating a polyethylene liner - net weight 22kg or 11kg.

### STORAGE AND SHELF LIFE

ARDEX S 16 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 S 16 is considered non-hazardous in normal usage. The presence of cement in the product gives an alkaline mortar which may cause some local 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

Bulk density of powder	approximately	1.3kg/litre
Weight of fresh mortar	approximately	1.8kg/litre
Initial Set (Vicat) DIN 1164	approximately	1/2 hour at 20°C
Final Set (Vicat) DIN 1164	approximately	1 hour at 20°C

### Compressive Strength (DIN 1164)

After 3 hours	5.2 N/mm <sup>2</sup>
After 6 hours	9.0 N/mm <sup>2</sup>
After 1 day	13.0 N/mm <sup>2</sup>
After 28 days	18.0 N/mm <sup>2</sup>

### Tensile Bending Strength (DIN 1164)

After 3 hours	1.8 N/mm <sup>2</sup>
After 6 hours	2.6 N/mm <sup>2</sup>
After 1 day	4.2 N/mm <sup>2</sup>
After 28 days	5.0 N/mm <sup>2</sup>

### Ball Pressure Hardness (Brinell)

After 28 days	50.0 N/mm <sup>2</sup>
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### Early Tensile Adhesion Strength Development (DIN 18156-M)

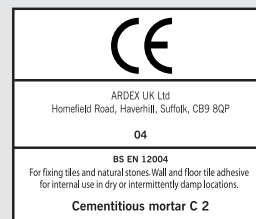
After 3 hours	0.8 N/mm <sup>2</sup>
After 6 hours	1.2 N/mm <sup>2</sup>
After 1 day	1.8 N/mm <sup>2</sup>

### PROPERTIES TESTED TO THE REQUIREMENTS OF BS EN 12004

Tensile Adhesion Strength	Greater than 1 N/mm <sup>2</sup> under all test conditions.
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### Slip Resistance

Slip - less than 0.5mm



**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.