

ArdiFlex S2

High performance, fibre reinforced, highly deformable tile/stone adhesive

DESCRIPTION

High polymer modified, off-white coloured adhesive specifically formulated to have enhanced properties of slip resistance and deformability necessary for fixing tile and stone on substrates that are subjected to deformation and/or vibrations. The fibre reinforcement further increases the bond strength and impedes the crack propagation in the composite material.

ArdiFlex S2 is used for fixing ceramic, vitrified & fully vitrified tiles, glass mosaic, porcelain, terrazzo, metal or glass tiles, non-staining natural stone. The set adhesive is water-resistant and suitable for use in swimming pools.

STANDARDS

- Complies with **IS 15477: 2019** Type 4TS2 "Specification for Adhesives for use with Ceramic, Mosaic and Stone Tiles"
- Conforms with the requirements of **EN 12004: 2017** and is a deformable (S1), improved (2), slip resistant (T), cementitious adhesive (C), with extended open time (E) of class to **C2TES2**

USES

Fixing large format tiles/stones on:

- Deformable substrates or substrates subjected to vibration (eg. timber floors, plywood, chipboard, MDF, etc)
- External facades
- Fibre cement boards, plaster boards
- Suspended swimming pools
- Areas exposed to direct sunlight & temperature fluctuations (podiums)

FEATURES

- Fibre reinforced for high performance and strength
- Highly deformable: accommodates differential movement of the covering and substrate
- Good slip resistance required for fixing large format wall tiles
- Extended open time
- Bed thickness upto 15mm : suitable for tiling on uneven substrates
- Excellent bond to various building materials
- Excellent water and frost resistance
- Excellent tensile & shear adhesion
- Easy mixing, smooth application & better workability

PHYSICAL PROPERTIES @ 27± 2°C

Bed Thickness 2 - 15mm
Pot Life approx. 3 hours

Setting Time 24 hours
Temperature Resistance -30°C to 150°C
VOC Content 3.75 g/L

Properties tested to IS 15477:2019 @ 27± 2°C

Property with Test Method	Min. Requirements	Typical Result
Tensile Adhesion Strength (as per Annex A)		
Dry Condition	1.50 N/mm ²	>1.60 N/mm ²
Wet Condition	1.00 N/mm ²	>1.20 N/mm ²
Shear Adhesion Strength (as per Annex B)		
Dry Condition	1.50 N/mm ²	>1.60 N/mm ²
Heat Aging Condition	1.00 N/mm ²	>1.00 N/mm ²
Wet Condition	1.00 N/mm ²	>1.00 N/mm ²
Open time (as per Annex C)	As per Mftr.	35 mins
Adjustment time (as per Annex D)	As per Mftr.	30 mins
Slip (as per Annex E)	< 0.50 mm	0.38 mm
Deformability (as per Annex F)	≥ 5.0 mm (for S2)	5.15 mm

Properties tested to EN 12004 : 2017@ 23± 2°C

Property with Test Method (as per Part 2)	Min. Requirements (as per Part 1)	Typical Result
Tensile Adhesion Strength (Clause 8.3)		
Initial	≥ 1.00 N/mm ²	> 2.00 N/mm ²
After water immersion	≥ 1.00 N/mm ²	> 1.50 N/mm ²
After heat aging	≥ 1.00 N/mm ²	> 1.75 N/mm ²
After freeze-thaw cycles	≥ 1.00 N/mm ²	> 1.75 N/mm ²
Open time @ 30 mins:Tensile Adhesion Strength (Clause 8.1& 8.3)	≥ 0.50 N/mm ²	0.63 N/mm ²
Slip (T) (Clause 8.2)	≤ 0.50 mm	0.20 mm
Transverse Deformation (Clause 8.6)	≥ 5.0 mm (for S2)	5.80 mm

COVERAGE ESTIMATES

Pack size 50 kg Coverage approx. 1.10 - 1.20 kg/m²/mm

Notch Trowel size	Consumption/m ² (@ 45°angle of trowel)
4mm X 4mm	1.50 - 1.55 Kgs
6mm X 6mm	2.30 - 2.40 Kgs
8mm X 8mm	3.00 - 3.15 Kgs

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12mm X 12mm	4.50 - 4.70 Kgs
20mm X 20mm	7.55 - 7.85 Kgs

Note: Coverage will depend on the nature and flatness of the surface and the method of application. For good coverage, it is vital that all surfaces are smooth, plumb, level and free from defects and undulations.

APPLICATION INSTRUCTIONS

Substrate Preparation

Before starting any work ensure that the base is:

- Sufficiently flat to permit the specified flatness of finished tiling, bearing in mind the permissible thickness of the adhesive.
- Suitable for tiling in the service conditions to which it will be exposed.
- Surfaces to be tiled must be dry, clean and free from loose material and contamination.

SITE WORK INSTRUCTIONS

Surface Considerations

New Concrete/Brick/Block Wall:

Before rendering/plastering/tiling, allow walls to air dry for at least 6 weeks.

New Cement/Sand rendering:

Before commencing tiling, allow plastered surface to air dry for at least 2 weeks (3 weeks for swimming pools).

New Concrete Bases:

Before commencing tiling, ensure that bases have been allowed to air dry for at least 4 weeks.

Existing Concrete/Screed Bases:

Cut out all loose or hollow portions and make good with a 1:3 cement: sand mortar applied over a slurry bonding coat* and dry and cure for 7 days.

Ceramic/Vitrified & Fully Vitrified Tile/Terrazzo/Hard Natural Stone Bases:

Check that existing finish is firmly adhering to the base. Remove any loose or hollow sounding tiles and reprofile with a 1:3 cement: sand mortar over a slurry bonding coat*. Any surface contamination should be removed with HEAVY DUTY TILE CLEANER/TILE & STONE CLEANER.

*Slurry bonding coat is prepared by mixing 2 parts of Portland cement to 1 part of ADMIX AD1. Brush on the base immediately before applying the adhesive.

Overlaid Timber Floors/Metal Boards:

Timber floor/Metal boards must be rigid and stable to receive tiles and capable of carrying the additional load without deflection. Adequate ventilation must exist beneath the timber/metal board. Overlay existing floor with WBP grade or marine grade plywood, at least 15 mm thick, timber/metal boards should be screwed down (not nailed) at 300 mm centres. All timber surfaces should be primed on the reverse side and edges with ADMIX AD 1.

Fibre Cement Boards/Tile Backer Boards:

Ensure that boards are dry, securely fixed, rigid and fixings do not protrude. Do not seal or prime surfaces that are to be tiled. The suitability of the boards as a background for ceramic tiling should be confirmed with the manufacturer.

MDF (Internal Dry Areas Only)/Plywood/Chip Board:

Ensure that sheets are capable of carrying the expected load without deflection; dry securely fixed and rigid and that fixings do not protrude. Where necessary insert noggings to support all board edges and to allow screw fixing at 300 mm centres. Seal the reverse side and edges with ADMIX AD 1. Do not seal or prime surfaces that are to be tiled.

Plaster Board:

Ensure that boards are capable of carrying the expected load without deflection; dry securely fixed and rigid and that fixings do not protrude. Where necessary insert noggings to support all board edges and to allow screw fixing at 200 mm centres. Prime the plaster board surface with ADMIX AD 1 where tile/stone would be fixed.

Mixing

Add ArdiFlex S2 to clean water. Mix thoroughly until a lump-free mortar is obtained. A 50 kg bag will require approx. 12.5 - 12.75 litres of water to obtain a slump-free consistency. The adhesive is immediately ready-for-use and has a pot life of approx. 3 hours. No further water should be added. Where mixing by weight is not possible, volume mixing can be carried out at site in the ratio of approx. 1 :3 (water: powder)

APPLICATION

1. Spread not more than the area which can be tiled within the open time of the adhesive.
2. The mixed adhesive is applied to the prepared surface with a trowel and then combed through with a suitably sized square-toothed notched trowel.
3. The tiles should be fixed within the open time of the adhesive and pressed into place with a twisting and sliding action ensuring solid bed fixing is achieved. The open time is dependent on site conditions and will be extended in lower temperatures and shortened at higher temperatures.
4. Check periodically that good contact is maintained with the back of each tile.
5. Touch the adhesive ribs periodically and if a skin has formed, remove the adhesive and apply a new layer.
6. Leave adequate joints between individual wall and floor tiles unless self-spacing tiles are used.
7. Clean off surplus adhesive from the tile face and between joints

Note:

- Do not use in damp conditions and temperature less than 5°C
- Seal the sides & bottom of porous stones with UNDERTILE & STONE PRIMER to avoid migration of moisture. The top surface can be sealed with a suitable protective sealer from ARDEX ENDURA range.
- Use suitable clamps along with adhesive at the time of installation of tiles/stones above 3 m height.
- For large span tiling works, leave movement joints at every 3m interval and fill with a flexible sealant as per BS 5385.
- Prevent foot traffic till the adhesive has completely set.

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SPACERS

Use ARDEX ENDURA spacers for uniform joint width.

GROUTING

Grouting should be carried out after 24 hours on floors and after 10 hours on walls. Use the appropriate grouting material from the range of ARDEX ENDURA cementitious and epoxy grouts.

Note: The addition of ADMIX GT1 to cement - based grouts will enhance adhesion to tile/stones edges, increase water-resistance and improves flexibility.

CLEANING

Tools and containers may be cleaned using clean water when the adhesive is still fresh. The hardened adhesive can be removed from tools mechanically.

STORAGE AND SHELF LIFE

Ardiflex S2 has a shelf life of 12 months when stored in normal dry conditions.

PRECAUTIONS

Keep out of reach of children. Wear suitable protective clothing, gloves and eyes/face protection. After contact with skin, wash immediately with plenty of clean water. In case of contact with eyes rinse immediately with plenty of clean water and seek medical advice.

For more details please refer the relevant Material Safety Data Sheet

CONDITIONS OF SALE

Sold subject to the Company's conditions of sale which are available on request.

NOTE

The information supplied in this datasheet is based upon extensive experience and 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.



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