TECHNICAL DATA FOR BS SMARTBOND 100

Bonding and Repair System for Cement-Based Concrete and Masonry

Description of BS SmartBond 100

BS Smartbond 100 is an essential multipurpose high performance use chemical for the construction industry.
No construction project is complete without it.

BS Smartbond 100 is designed for use with cement compositions in mortar and concrete as a polymer modifier to increase resistance to cracks, reduce water penetration, improve abrasion resistance and durability. It is commonly used with cement mortars as a reliable bonding agent.

Areas of Application of BS SmartBond 100

1. Cold Joint Bonding Slurry: For start stop construction and green joints in concrete casting situations
2. Repairs of Concrete: Such as Spalled concrete, repairs of concrete floors, beams, and precast slabs.
3. Installation and bonding of floor screeds and toppings.
4. Creating abrasion resistance in concrete floors and non-dusting property.
5. Creation of external rendering plaster with Waterproof, weatherproof and frost resistant properties.
6. Create durable crack resistant plasters in Waterproofing and Tanking, Basements, lift pits and water bodies, effluent tanks, and swimming pools.
7. Bonding application may be done for Installation of tiles, making tile grout, and fixing of stones.
8. Creating Hard Plaster for Squash Courts to withstand the regular impact of squash balls.
9. Creating Covings.

Key Benefit of BS SmartBond 100

1. Improved strength in cured cement-based mass
2. Prevents bleeding and segregation of mortars
3. Creates high resistance to water penetration in plaster or concrete admixed with BS SmartBond 100
4. Develops good abrasion resistance for polymerised concrete floors with BS Smartbond 100
5. Compatible with a variety of building materials.
6. Similar modulus and thermal expansion properties to concrete.
7. Non-toxic. Can be used with any construction storing potable water safe for human consumption

Technology in BS SmartBond 100

BS Smartbond 100 consists of nanoparticles from synthetic rubber dispersed in an aqueous base. The technology of BS SmartBond 100 works on a unique mechanism that highly enhances the bonding and polymerising of concrete mix matrix. The product shall have minimum butadiene content of 40% by weight. It shall be capable of being used as a bonding agent and have pull-off bond strength not less than 1 MPa.

Physical Properties of BS Smartbond 100

Appearance	Soft milky-white styrene butadiene copolymer latex compound liquid
pH Level	8 +/- 1
Density	1.01 +/- 0.01 at 25°C
Active Contents	40%

Properties of Polymer Mortar with BS SmartBond 100*

Mortar Mix	
Cement	50 Kg Bag
River Sand (Zone-2)	150 Kg
BS SmartBond 100	10 Kg
Water	10 Litre
Mortar Properties with above mix	
Wet Density	2000 to 2200 Kg/m3
Compressive Strength	Up-to 31 N/mm2
Flexural Strength	Up-to 14 N/mm2
Tensile Strength	Up-to 7.5 N/mm2
Freeze Thaw Resistance	Excellent
Adhesion to masses	Excellent to concrete substrates, steel, kiln bricks, AAC bricks, cement bricks, glass etc.
Resistance to water pressure (head of 98.5 Feet)	Excellent with zero water penetration through a 15mm test block

*Above results are for a typical mix and will vary depending upon the mix constituent available for the test. We strongly advise to carry out site mix design and trials. Polymer mortar is to be used in support of a composite waterproofing system

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Directions for Use: Surface preparation

1. All application surfaces should be clean, sound, and free of loose matter. Remove laitance, oil, grease, demoulding agent or curing compound from concrete surfaces using wire brush or other such equipment.
2. Ensure that reinforcing steel is clean and free from grease or oil; remove scale and rust.
3. When repairing spalled or damaged concrete, ensure that the concrete has been chiselled or cut back to a sound surface

To make bonding slurry with BS SmartBond

1. Wet down absorbent surfaces, such as concrete, bricks, stone, etc. Ensure that they are saturated but free of surface water.
2. Prepare bonding slurry as per following mix ratio
   a. 1-part Smartbond 100 diluted with
   b. 2-parts water by weight and
   c. 6-parts cement (approximately)
3. Using a stiff brush, work the bonding slurry well into the damp surface, ensuring that no pinholes are visible.
4. A 20 Kg pack of BS Smartbond 100 will generate a bonding slurry of 410 to 420 Kg that will cover an area of around 320 to 325 Sq. Ft depending on the substrate.

Advice on Application of polymerised plaster to vertical surfaces:

1. Apply the bonding slurry to the prepared surface
2. Then apply the BS Smartbond 100 polymerised mortar on the still wet bonding slurry.
3. Apply BS Smartbond 100 modified mortars in coats at a maximum thickness of 6mm per coat. Greater thickness can lead to slumping.
4. Several coats can be applied in rapid succession, usually within 15 to 30 minutes of the previous coat.
5. Close the surface using a wooden float or steel trowel.
6. Another method is to let the first coat of render dry overnight and apply another slurry coat before applying the second coat of render.

Application Advice for modified Screeds and toppings, to horizontal surfaces:

1. Screeds, patches, etc., based on Smartbond 100 modified cements, can be laid to any thickness from 60mm down to 6mm minimum.
2. After mixing, the BS Smartbond 100 modified mix should be placed over the still wet bonding slurry, well compacted and struck off to level. It may then be trowelled to the required finish using a wooden float or steel trowel.

Mixing Advice on mortar with BS SmartBond 100

1. Mixing should be preferably carried out in a concrete mixer preferably a pan type mixer
2. Hand mixing is advised only when the total weight of the mix is less than 25kg.
3. Add the BS Smartbond 100 & mix for 2 minutes only, to avoid excessive air entrapment.
4. Finally, without delay, add the water slowly until the required consistency is achieved.
5. Owing to the strong plasticising properties of BS Smartbond 100, rapid thinning can occur - avoid adding excessive water.
6. Until the user becomes familiar with its workability the appearance of a BS Smartbond 100 modified mix is tricky, when of correct consistency it may appear to be too dry. However, it will be found that it can be compacted and trowelled satisfactorily.
7. Avoid using excessive water.

Packaging

BS SmartBond 100 is available in **5 Kg** & **20 Kg** packaging.

Safety and Handling

Wear **protective gloves, safety goggles,** and use **barrier cream** to prevent skin contact. Ensure **adequate ventilation** during application. For detailed safety guidance, please refer to the **Material Safety Data Sheet (MSDS).**

Storage and Shelf Life

Store in a **cool, well-ventilated area,** away from direct sunlight. **Shelf life:** 12 months from the date of manufacture when stored as recommended.

Disclaimer

The information in this sheet is provided for general guidance and is based on current knowledge and experience. Due to the variety of possible application methods and site conditions, no responsibility is assumed for results obtained under specific circumstances.

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