

ShaliBond S

2K Segmental Bridge Epoxy Adhesive for use at +25°C to +45°C



Description

ShaliBond S is a two-component epoxy, solvent free, thixotropic, structural adhesive especially formulated for segmental bridge construction. It has high initial strength gain and also possesses shrinkage free curing.

Approvals / Standards

ShaliBond S meets the requirements of acceptance test and verification as per FIP.

Product Information

Form, Colour, Mixing Ratio	Comp A = Off White viscous paste; Comp B = Black viscous paste; Component A : Component B = 3:1 by weight
Handling & Storage	Store under cover out of direct sunlight and protect from extremes of temperature. In tropical climates the product must be stored in an air-conditioned environment. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.
Packaging	Available in 6 kg unit pack comprising Comp A = 4.5 kg and Comp B = 1.5 kg in 2 sets.
Shelf Life	12 Months from the date of manufacture when maintain in protected storage in original unopened sealed condition at 5 - 38°C.
Handling Precautions	As with all chemical products, care should be taken during use and storage to avoid contact with eyes mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention. Keep away from children and animals. Reseal containers after use.

Technical Characteristics

Property	Method	Result
Density of mix, gm / cc	ASTM D 1475	1.92 ± 0.02
Pot life, 100 gm (at 60°C), minutes	FIP 5.1	21 - 25
Open Time, minutes (at 40 - 45 °C)	FIP 5.2	62 - 68
Sag Flow, mm (at 40 - 45 °C)	FIP 5.3 ASTM D 2730	<15 in 10 mins No sag at 3 mm
Squeezability at • 15 kg • 200 kg	FIP 5.4	Surface area (mm ²) >3000 >7500
Product Application temperature	--	25 °C to 45°C
Compressive strength, N / mm ² (25°C) • 24 hours • 7 days	FIP 5.12	68 - 72 77 - 81
Heat Resistance, 7 days (at 40 - 45°C)	FIP 5.10	> +50°C
Shear Strength, N / mm ² , 7 days (at 25°C)	FIP 5.15	12.5 - 13.0
Shrinkage after 7 days, %	FIP 5.7	0.2 - 0.4
Instantaneous modulus in compression, N / mm ² , 1 hour	FIP 5.13	~10000
Coverage, kg / m ² / mm*	--	~2
• Bond strength on wet concrete, 24 hours (at 25°C) • Tensile bending on wet concrete, 24 hours (at 25°C)	FIP 5.5 FIP 5.14	Concrete fracture Concrete failure

*May vary with surface porosity, mode of application, wastage during application

Field of Application

- Bonding precast segments in bridges & viaducts.
- Anchoring bolts, dowels, steel bars in concrete.
- Bonding external steel reinforcing plates for strengthening beams, columns and slabs.

Advantages

- No creep even at high temperature and constant load.
- Provides water tight seals to joints.
- Impermeable to liquid and water vapour.
- Suitable to dry and damp concrete surfaces (moisture tolerant).
- Hardening is not affected by humidity.
- Thixotropic non sag in vertical and overhead application.
- No primer required.
- Effective transfer of stresses at bond interface.

Application Methodology

➤ Surface Preparation

- Surfaces should be structurally sound, clean, and free from loose particles, oil, grease, or any other contaminants.
- Remove oil grease and wax contaminants by scrubbing with industrial grade detergent or degreasing compounds followed by mechanical cleaning.
- Remove cement laitance, loose particles, mould release agent, curing membrane, and other contaminants from the surface by wet grit blasting, high pressure water jetting (approximately 150 bars) or such other effective methods.
- All dust and loose material must be completely removed from surfaces before application of the adhesive.

➤ Mixing

- Mechanical mixing is necessary. A slow speed (300 - 600 rpm) drill with a mixing stirrer is recommended.
- Mix part A (resin) briefly using a mixing spindle attached to a slow speed electric drill. Add part B (hardener) to part A and mix parts A+B continuously for at least 3 minutes until the streaks of white and black disappear to yield a homogenous grey mix.
- Ensure to scrape down the sides of the container.
- However, if part mixing is necessary, stir each component individually and then measure out precisely each component in the proper ratio into a clean, dry pail for subsequent mixing.
- Over mixing must be avoided to minimize air entrainment.
- Mix only the quantity which can be used within its pot life.

➤ Application

- Apply the mixed adhesive to the prepared surface with a spatula, trowel, notched trowel, or with hands protected by gloves.
- Apply **ShaliBond S** within its pot life to a thickness of 1 mm to 3 mm using a trowel, so as to allow for a small quantity of the bonding material to extrude out of the bond line when pressure is applied to bond the two surfaces.
- The prepared surfaces of the two rigid elements to be bonded should be brought together within the open time of the product and retained in position until **ShaliBond S** cures.

Value base of product data

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control and different test methods.

Health and Safety information

For information and advice on the safe handling, storage and disposal of chemical products, users shall refer to the most recent **Material Safety Data Sheet**.

- Avoid contact with eyes and skin.
- Wear suitable protective clothing such as overalls, goggles, dust mask and gloves. Ensure that there is adequate ventilation in the area where the product is being applied.
- This product is flammable.

- Keep away from sources of ignition.
- In case of fire, blanket flames with foam, carbon dioxide or dry chemicals.
- Eye protection during application is recommended.
- In case of skin contact, wash with soap and plenty of water. Get medical attention if irritation develops or persists.

Cleaning & Maintenance

- Clean all tools immediately after use with STP Thinner only. Do not allow the material to harden.



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