

# SMARTCARE REPAIR STRUCTURAL GROUT EPHS

## GROUT AND ANCHORING SYSTEM

High strength, high flow epoxy resin grout.

### PRODUCT DESCRIPTION

SmartCare Structural Grout EPHS is a three-component creep-resistant, high-strength, high-flow, solvent-free epoxy resin-based precision grout used to secure critical equipment for proper alignment and transmission of static and dynamic loads designed for grouting of gap widths of 10 to 75 mm with balanced physical properties and excellent resistance to chemical attack, vibration and torque.

SmartCare Structural Grout EPHS is formulated for easy installation, with good flow characteristics suitable for pouring or pumping.

### KEY FEATURES

- **Creep resistant:** To improve resistance to deformation under constant loading.
- **Excellent durability:** High compressive, flexural and tensile strengths ensure a long working life.
- **Cost effective:** High early strength gain promotes minimum downtime and early commissioning of plant.
- **User friendly:** Simple, full pack mixing to ensure that the performance characteristics are achieved.
- **Versatile:** Suitable for a wide range of loading situations including repetitive dynamic loads.
- **Excellent in service performance:** Non-shrink capability ensures full surface to surface contact.
- **Excellent flow-ability:** High effective bearing area for even load distribution.
- **Excellent adhesion:** Provides optimum load transfer and vibration dampening to steel and concrete.
- **Chemical resistance:** Designed for use in challenging environments.

- **Resistance to water and chloride:** Prevents intrusion in wet and aggressive environments.

### PRODUCT BENEFITS



### PACKAGING

15L Set (weight approx. 30 kg)

### TECHNICAL PROPERTIES

Properties	Value
Colour	Grey
Mixed density (ASTM D 1475)	2.1 ± 0.05 kg/L
Pot life @ 23°C	75 minutes
Compressive strength @ 35°C (ASTM C 579)	85 N/mm <sup>2</sup> at 1 day
Compressive strength @ 35°C (ASTM C 579)	85 N/mm <sup>2</sup> at 1 day 95 N/mm <sup>2</sup> at 3 days 100 N/mm <sup>2</sup> at 7 days
Flexural strength @7days (ASTM C 580)	>26 N/mm <sup>2</sup>
Tensile strength @7 days (ASTM C 307)	> 12 N/mm <sup>2</sup>
Maximum flow distance for a head of 100 mm at 20°C	35 mm gap - 2000 mm 70 mm gap - 3500 mm

Properties	Value
Coefficient of thermal expansion (ASTM C 531)	$(2 - 5) \times 10^{-5}$
Compressive creep - 2.85 N/mm <sup>2</sup> 1 year, 60°C (ASTM C 1181)	$2.05 \times 10^{-3}$ mm/mm
Adhesion strength @7 days (BS 1881 ASTM D 4541)	>2.5 N/mm <sup>2</sup>
Rapid chloride permeability (ASTM C 1202)	Nil
Water permeability @5 bar (BS EN 12390)	Nil
Chemical resistance	ph. 2.5 to 11.5 Sea water, Hydrocarbon fuels
Application thickness	10 mm min. 75 mm max.
Application temperature	5°C to 40°C for higher temp. follow hot climate precautions
Service temperature	5°C to 80°C

\*All values given are subject to 5-10% tolerance.

\*For elevated temperature, follow high temperature working procedure.

## APPLICATION AREAS

- Under base plate grouting to substantial structural elements.
- Base plate grouting in dynamic load situations, such as turbines and other reciprocating machinery.
- Heavy industrial applications in steelworks, refineries, chemical plants and electroplating works.
- Structural infill where very high strength is required.
- Rail track applications, to support heavy cranes, or on transporter rails.
- Precision alignment of compressors, generators, pumps, fans and electric motors.

- Grouting of rolling, stamping, grinding, crushing, drawing and finishing mills, forging hammers and other equipment subject to high torque, impact and vibration.

## APPLICATION AREAS

### 1. Surface preparation:

Surfaces shall be structurally sound and clean of all contaminants like mould release agent, curing compound, grease, paint and cement laitance. The area shall be dry and free of standing water. Surface cleaning by suitable means is recommended depending on the degree of contamination. A watertight shutter shall be erected all around the area where SmartCare Structural Grout EPHS shall be poured. Any gaps or openings below the formwork or on joints shall be sealed with a suitable mastic sealant or a rubber seal.

Caution: Resin leakage from the grout will result in segregation. The form work shall be coated with a heavy-duty mould release oil to ensure easy de-shuttering.

### Under Plate Grouting

The unrestrained surface area of the grout must be kept to a minimum. Generally, the gap between the perimeter form work and the plate edge should not exceed 75 mm on the pouring side and 25 mm on the other side. Air pressure relief holes should be provided to allow venting of any isolated high spots.

### Formwork

The formwork should be constructed to be leak-proof, as SmartCare Structural Grout EPHS is a free-flow grout. This can be achieved by using a foam rubber strip or mastic sealant beneath the constructed formwork and between joints.

For free-flow grout conditions, it is essential to provide a hydrostatic head of grout. To achieve this, a feeding hopper should be used - please consult your local Asian Paints Berger office for more details.

## Base Plate

If delay is likely before placing steel base plates, it is recommended that the underside and edge are coated with Epimastic 5100 (Surface Tolerant Epoxy Primer) to prevent rust formation and ensure bonding with the SmartCare Structural Grout EPHS grout. All metal surfaces should be cleaned to a bright finish in accordance with Standard Sa 2.5 or equal. Epimastic 5100 (Surface Tolerant Epoxy Primer) can be applied directly onto newly prepared and cleaned steel surfaces.

## 2. Mixing:

Mix part A and part B separately for a minute using a slow-speed drill (300 - 400 rpm) fitted to a suitable paddle mixer. Then add part B into part A and mix thoroughly for 1-2 minutes. Add part C aggregates slowly into the mix and further mix for another 3- 4 minutes till a uniform and homogeneous consistency is achieved.

Note: All parts are pre-weighed, and no part mixing is allowed.

## 3. Placing:

Pour the mixed SmartCare Structural Grout EPHS immediately after mixing and within the pot life. The grout shall be poured continuously from one corner or side to avoid entrapment of air. Spread the poured grout evenly with a steel trowel. For congested areas, it is recommended to lightly tamp the shutters with a rubber mallet to remove the entrapped air.

Note: The grout which has exceeded its pot life shall not be used and shall be discarded immediately.

## 4. Cleaning:

All tools shall be cleaned with solvent immediately after use. Hardened materials can be removed mechanically only.

## PRODUCT LIMITATIONS

- Ensure formwork is secure and watertight to prevent movement and leaking during the placing and curing of the grout. The area should be free of excessive vibration. Shut down adjacent machinery until the grout has hardened.

- In hot weather, base plates and foundations must be shaded from direct sunlight. Bags of grout should be stored in the shade before use.
- In cold weather, the temperature of base plates and foundations should be raised to  $>10^{\circ}\text{C}$ .
- At high temperatures, use chilled water for mixing to keep the grout mix temperature below  $30^{\circ}\text{C}$ . In hot weather, base plates and foundations must be shaded from direct sunlight.
- The mixed materials should be placed within 10 minutes. If any delays happen, discard the batch and mix and use a fresh batch.
- Take additional precautions when conducting the applications during extreme climatic conditions.
- Due to differences in temperature between the grout under the base plate and the exposed shoulders that are subject to more rapid temperature changes, de-bonding and/or cracking can occur.
- Avoid shoulders wherever possible. If shoulders are required, they should be firmly anchored with reinforcing to the substrate to prevent de-bonding.

## STORAGE CONDITIONS

Store the material in a dry, cool, and shaded condition; in tropical climates, the product must be stored in an air-conditioned environment to prevent quality deterioration.

## SHELF LIFE

The shelf life of the product is up to 12 months when stored as per recommendation, though excessive exposure to heat, UV, and sunlight will reduce this period.

## CERTIFICATIONS

SmartCare Structural Grout EPHS complies with ASTM D 1475, ASTM C 579, ASTM C 580, ASTM C 307, ASTM C 531, ASTM C 1181, BS 1881 ASTM D 4541, ASTM C 1202 and BS EN 12390.

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