E³-HP

High-Performance Epoxy Grout

EUCLID CHEMICAL

Description

E³-HP is a high-performance epoxy grout, formulated with a proprietary aggregate blend and a new resin technology. This product is characterized by high bearing surface, low creep and excellent flowability, resulting in a grout that exceeds all current performance standards. **E³-HP** meets the most demanding epoxy installations where bond to existing foundation and machinery is critical.

Primary Applications

- Turbines, compressors or stamping machines with dynamic loading
- Quick re-grouts and start-ups
- Industrial areas requiring maximum bond to foundation with maximum bearing
- Pour-backs for post tension projects

Features / Benefits

- Fast return to service
- High chemical resistance
- Excellent bond, machinery to foundation
- Excellent bearing
- Superior stability under elevated
- service temperatures up to 105°C

Technical Information

Property	Test Method	Result
Compressive Strength 50mm cubes @ 21˚C	**ASTM C 579**	4 hours: 5 N/mm² 6 hours: 34 N/mm² 8 hours: 55 N/mm² 1 day: 82 N/mm² 3 days: 90 N/mm² 7 days: 94 N/mm² 28 days: 102 N/mm²
Creep @ 3 MPa, 23˚C	**ASTM C 1181**	3 days: 1.9 x 10^{-4} mm/mm 7 days: 2.4 x 10^{-4} mm/mm 28 days: 3.6 x 10^{-4} mm/mm 120 days: 7.1 x 10^{-4} mm/mm
Coefficient of Thermal Expansion @ 100˚C, 16 hours	**ASTM C 531**	3.6 x 10^{-5} mm/mm/°C
Flexural Strength	**ASTM C 580**	1 day: 25 N/mm² 28 days: 28 N/mm²
Modulus of Elasticity	**ASTM C 580**	1 day: 8,500 N/mm² 28 days: 10,500 N/mm²
Tensile Strength	**ASTM C 307**	1 day: 13 N/mm² 28 days: 15 N/mm²
Gel Time	**ASTM D 2471**	109 minutes
Peak Exotherm	**ASTM D 2471**	47°C @ 126 minutes
Heat Deflection Temperature	89°C	
Bond to Concrete	Exceeds tensile and shear strength of concrete	
Chemical Resistance	Excellent resistance to most industrial chemicals	
Abrasion Resistance	Greater than concrete	

Appearance

E³-HP is dark grey in colour.

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Packaging

E³-HP is packaged in 0.042 m^3 kits. Resin Part A: 9.6 L, Hardener Part B: 2.4 L, Aggregate Part C: 3 x 27.2 kg bags. **E³-HP** is also available in a 0.01 m^3 unit.

Shelf Life

1 year in original, unopened package.

Coverage

One 0.042 m^3 unit of **E³-HP** will grout approximately 1.7 m^2 when placed at a depth of 25 mm.

Directions for Use

Surface Preparation: New concrete must be a minimum of 28 days old. The concrete must be clean and rough. All oil, dirt, debris, paint and unsound concrete must be removed. The surface must be prepared mechanically using a scabbler, bushhammer, shotblast or other suitable equipment which will give a surface profile of a minimum 3 mm and expose the coarse aggregate of the concrete. The final step in cleaning should be the complete removal of all residue with a vacuum cleaner or pressure washing. **Acid etching is acceptable only when mechanical preparation is impractical.** It is recommended that only contractors experienced in the acid etching process use this means of surface preparation. The salts of the reaction must be thoroughly pressure washed away. Allow the concrete to completely dry. **Note:** Even with proper procedures, an acid etched surface may not provide as strong a bond as mechanical preparation procedures. All concrete must possess an open surface texture with all curing compounds and sealers removed.

Form Preparation: Forms must be liquid tight to prevent leakage, and they should be strong and well braced. To facilitate stripping, the forms should be coated with two applications of a paste wax or each form wrapped with polyethylene.

Mixing: Mix parts A & B (resin & hardener) separately for 2 minutes using a drill and mixing prop. For ease of mixing, add the part B to the part A (not the reverse). The epoxy must be well mixed to ensure proper chemical reaction. After the epoxy has been mixed, add the part C (aggregate) and mix for 2 to 3 minutes more until the aggregate is completely wetted out. For large jobs, use a mortar mixer. Place immediately.

Placement: Pour into blockouts through a funnel or directly if space permits. When grouting plates, pour grout into the headbox and allow to flow under the plate. Straps pre-placed under the plate will aid in working the grout across. Grout should be placed at a minimum of 25 mm thick and a maximum of 152 mm per lift when placed in a large mass. **Note:** Bring all **E³-HP** materials as well as the foundation and baseplate as close to 21°C as possible. Cold temperatures will significantly reduce flow characteristics and will increase the difficulty of baseplate grouting. Higher temperatures will increase initial flow but cut down on working time.

Curing: E³-HP requires no special curing procedures.

Finish: If a smooth finish is desired, the surface of the grout may be brushed and troweled with a light application of EUCO SOLVENT.

Clean Up

Tools and mixer may be cleaned with EUCO SOLVENT, xylene, or acetone.

Precautions / Limitations

- Wear protective gloves and eye glasses when handling epoxies.
- Do not use over frozen concrete.
- Store material at room temperature before use.
- Grout should be placed at ambient temperatures of 10°C to 32°C.
- Rate of strength gain is significantly affected at temperature extremes.
- In all cases, consult the Safety Data Sheet before use.

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