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◆ENG.SPECS ◆CATALOG INDEX
◆MSDS ◆SECTION INDEX
✕FRENCH ◆PRINT
✕SPANISH ◆EXIT CATALOG

E³-HP

HIGH PERFORMANCE EPOXY GROUT SYSTEM

E³-HP high performance epoxy grout is a performance standard for epoxy grouts. E³-HP is formulated from a new resin technology. Further, a proprietary aggregate blend has created a grout which exceeds all current performance standards. This product is characterized by high bearing surface, low creep and excellent flowability. E³-HP is clearly the choice for the toughest and most demanding epoxy installations where bond to existing foundation and machinery is critical.

PRIMARY APPLICATIONS

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

FEATURES / BENEFITS

- Fast return to service
- High chemical resistance
- Excellent bond, machinery to foundation
- Low shrinkage, low creep
- Excellent bearing
- Superior stability under elevated service temperatures of up to 220°F (105°C)

PACKAGING / YIELD

E³-HP is packaged in 1.5 ft³ (0.042 m³) units.

Resin, Part A:	2.54 gal (9.6 liter)
Hardener, Part B:	0.64 gal (2.4 liter)
Aggregate Filler, Part C:	3/60 lb (27.2 kg) bags

SPECIFICATIONS / COMPLIANCES

- E³-HP meets the requirements of ASTM C 307 Type I, Grade II, Class A.
- E³-HP meets the thermal compatibility with concrete requirements of ASTM C 884.

TECHNICAL INFORMATION

Typical Engineering Data

Test results developed under laboratory conditions.

Compressive Strength,
ASTM C-579 2" (50 mm) cubes @ 70°F (21°C)

Age	Strength
4 hours	700 psi(5 MPa)
6 hours	5,000 psi(34 MPa)
8 hours	8,000 psi(55 MPa)
1 day	11,900 psi(82 MPa)
3 days	13,100 psi(90 MPa)
7 days	13,600 psi(94 MPa)
28days	14,800 psi(102 MPa)

Creep Data, ASTM C-1181

3days	1.9 x 10^{-4} in./in.(1.9 x 10^{-4} mm/mm)
7days	2.4 x 10^{-4} in./in(2.4 x 10^{-4} mm/mm)
28 days	3.6 x 10^{-4} in./in.(3.6 x 10^{-4} mm/mm)
120days	7.1 x 10^{-4} in./in.(7.1 x 10^{-4} mm/mm)

Coefficient of Thermal Expansion, ASTM C-531
2.0 x 10^{-5} in./in./°F (3.6 x 10^{-5} mm/mm/°C)

Bond to Concrete: Exceeds tensile and shear strength of concrete.

Chemical Resistance: ASTM D-543 excellent resistance to most chemicals. Specific recommendations available upon request.

Abrasion Resistance: Greater than concrete.

Flexural Strength, ASTM C 580

1 day	3,600 psi(25 MPa)
28 days	4,100 psi(28 MPa)

Modulus of Elasticity, ASTM C 580

1 day	1.2 x 10^{6} psi (8.5 x 10^{3} MPa)
28days	1.5 x 10^{6} psi(10.5 x 10^{3} MPa)

Tensile Strength, ASTM C 307

1 day	1,900 psi	(13 MPa)
28 days	2,200 psi	(15 MPa)

Gel Time, ASTM D 2471
@73°F (23°C) ..... 109 minutes

Peak Exotherm, ASTM D 2471
@73°F° (23C) ..... 116°F (47°C) @ 126 minutes

Heat Deflection Temperature: 192°F (89°C)

Appearance

E^3-HP is a three part epoxy grout system which consists of a Part A (resin), Part B (hardener) and Part C (aggregate). After mixing and placing, the color is similar to that of concrete though the grout may always appear somewhat darker than the surrounding concrete

Shelf life is 2 years in original, unopened package.

COVERAGE

One unit of E^3-HP will grout approximately 18 ft^2 (1.7 m^2) when placed at an average depth of 1" (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 1/8" (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 paste wax or each piece wrapped with polyethylene.

Anchor Bolt Holes and Blockouts-Holes and blockouts should be cleaned of all dust, dirt and debris and allowed to dry. If the sides are smooth, roughen the hole with a stiff bristle wire brush or with a rotary brush hammer if access permits.

Mixing-Mix parts A & B (resin & hardener) 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 2-3 minutes more until the aggregate is completely wetted out. For large jobs, use a mortar mixer for mixing. Place immediately.

Placement-Pour into anchor bolt holes and 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 1" (25 mm) thick and a maximum of 4" (100 mm) per lift when placed in a large mass.

Note: Bring all E^3-HP materials as well as foundation and baseplate as close to 70°F (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-E^3-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, xylol or ketone solvents.

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 40-90°F (4-32°C).
- Rate of strength gain is significantly slowed at temperature extremes.

Registered Company

Form E^3-HP-12.99