E³-DP

Epoxy Grout for Deep Pour Applications

EUCLID CHEMICAL

Description

E³-DP is a high strength epoxy grout designed for grouting machine and equipment bases of all types. Formulated to be used in deep placements, **E³-DP** is suitable for grouting bases of numerous configurations. This formula gives excellent strengths and resistance to many corrosive chemicals. **E³-DP** provides excellent bond to the foundation and provides maximum bearing for long lasting grouting projects. **E³-DP** meets the requirements of the American Petroleum Institute Standard 610, Appendix L for Baseplate and Soleplate Grouting.

Primary Applications

- Large/deep volume precision placements
- Rebuilding foundations, bases and columns
- Vibration dampening for equipment
- Tanks, turbines and housings
- Pour-backs for post tension projects

Features / Benefits

- Low exotherm for large volume areas
- High chemical resistance
- Expansive/non-shrink
- Excellent bearing
- Variable fill ratio
- Excellent bond foundation to base plate
- Stable in deep placements
- Long working time

Technical Information

The following results were determined at 21°C laboratory conditions:

	Standard Unit			High Flow Mix		
Property	**1 Day**	**7 Days**	**28 Days**	**1 Day**	**7 Days**	**28 Days**
Compressive Strength ASTM C 579	76 N/mm²	97 N/mm²	107 N/mm²	76 N/mm²	94 N/mm²	104 N/mm²
Creep ASTM C 1181	2.8 MPa @ 60°C		2.3×10^{-3}	2.8 MPa @ 60°C		2.7×10^{-3}
Flexural Strength ASTM C 580	25 N/mm²	28 N/mm²	30 N/mm²	24 N/mm²	26 N/mm²	29 N/mm²
Tensile Strength ASTM C 307	12 N/mm²	14 N/mm²	14 N/mm²	12 N/mm²	14 N/mm²	14 N/mm²
Coefficient of Thermal Expansion ASTM C 531	12.9×10^{-6} (23° to 99°C)			13.9×10^{-6} (23° to 99°C)		
Bond to Concrete	Exceeds tensile and shear strength of concrete					
Chemical Reistance	Excellent resistance to most industrial chemicals					
Maximum Thickness Per Lift	Up to 45 cm			Up to 23 cm		
Early Age Height Change ASTM C 827 @ 32°C	+0.66%			+0.10%		
Effective Bearing Area ASTM C 1339	>95%			>95%		
Peak Exotherm 72 mm x 152 mm cylinder (adiabatic)	37.6°C			43.3°C		
FLDOT Peak Exotherm 305 mm x 305 mm x 72 mm	34.4°C			40.0°C		
Working Time	90 min.			70 min.		

Flowcrete UK Ltd
Booth Lane Sandbach
Cheshire CW11 3QF United Kingdom
Tel: +44 1270 753 000 Fax: +44 1270 753 333
Email: uk@flowcrete.com

Coverage

One standard 0.039 m^3 unit of **E^3-DP** will cover approximately 0.78 m^2 when placed at a depth of 5 cm. When mixed to a high flow consistency, the yield is 0.033 m^3.

Packaging

E^3-DP is packaged in 0.039 m^3 kits. To mix to a high flow consistency, remove 1 bag of aggregate.
Resin, Part A: 5.3 L, **Hardener, Part B:** 3.7 L, **Aggregate, filler Part C:** 14.5 kg bags

Shelf Life

2 years in original, unopened package

Directions for Use

Surface Preparation: 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 suitable equipment to give a surface profile of at least a CSP 5-7 in accordance with ICRI Guideline 310.2, exposing the coarse aggregate of the concrete. The final step in cleaning should be the complete removal of all dust and residue with a pressure washer and then vacuum until all water is gone. **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. **Base Plate Preparation:** Abrasive blast metal base plates to a commercial finish (SSPC-SP6) to enhance bond. Apply grout immediately to prevent re-oxidizing.
Form Preparation: Forms must be liquid tight to prevent leakage. They must be strong, well braced, and set slightly higher than the bottom of the base plate. To facilitate stripping, the forms should be coated with two applications of a paste wax or each form 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: Slowly mix parts A & B (resin & hardener) for 2 minutes using a drill and mixing prop in a clean mixing pail. 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. Do not whip air into the epoxy while mixing. After the epoxy has been mixed, directly pour the resin into a horizontal shaft mortar mixer. Add the part C (aggregate) to the mixture, one bag at a time and mix thoroughly for 2 to 3 minutes, until the aggregate is completely wetted out. 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, working from one side only. 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 46 cm per lift when placed in a large mass. **Note:** Bring all **E^3-DP** materials as well as the foundation and baseplate as close to 23°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-DP** 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 soap and water.

Precautions / Limitations

- Wear protective gloves and eye glasses when handling epoxies.
- Do not use over frost covered or 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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