E³-FLOWABLE

High-Flow Epoxy Grout

EUCLID CHEMICAL

Description

E³-FLOWABLE is a three-component, high flow, high strength, expansive epoxy grout designed for large plates and narrow configurations where flowability is critical. Additionally, our patent pending DL TechnologyTM aggregate greatly reduces the amount of dust released into the enviornment during mixing and handling.

Primary Applications

- Large or wide plates requiring precision grouting
- Machinery, equipment or structural elements needing maximum bearing support
- Rail grouting, keyways and inverted baseplates
- Narrow clearance situations including anchor bolts
- Precision alignment of generators, compressors, electric motors and pumps

Features / Benefits

- DL Technology™ aggregate is safer
- Positive effective bearing
- High early strengths, fast return to service
- User friendly placing characteristics
- Excellent bond, machinery to foundation
- >95% effective bearing
- High chemical resistance
- Clean tools with soap and water

Technical Information

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

	Standard Unit				High Flow Mix			
Property	**1 Day**	**7 Days**	**28 Days**	**Post Cure**	**1 Day**	**7 Days**	**28 Days**	**Post Cure**
Compressive Strength ASTM C 579	69.4 N/mm²	83.3 N/mm²	86.8 N/mm²	100.7 N/mm²	70.0 N/mm²	80.0 N/mm²	83.3 N/mm²	93.8 N/mm²
Creep ASTM C 1181	2.8 N/mm² @ 60°C		3.1 x 10^{-3}	/	2.8 N/mm² @ 60°C		3.3 x 10^{-3}	/
Flexural Strength ASTM C 580	27.0 N/mm²	27.7 N/mm²	30.0 N/mm²	31.3 N/mm²	24.3 N/mm²	25.7 N/mm²	27.0 N/mm²	27.7 N/mm²
Tensile Strength ASTM C 307	10.4 N/mm²	11.8 N/mm²	13.2 N/mm²	/	7.6 N/mm²	10.4 N/mm²	13.2 N/mm²	/
Coefficient of Thermal Expansion ASTM C 531	16.0 x 10^{-6} (23° to 99°C)				17.0 x 10^{-6} (23° to 99°C)			
Effective Bearing Area ASTM C 1339	>95%				>95%			
Working Time ICRI PROTOCOL	95 minutes at 23°C				68 minutes at 23°C			
Peak Exotherm ASTM D 2471	29.3°C at 140 minutes				35.0°C at 162 minutes			
Chemical Resistance	Excellent resistance to most industrial chemicals							
Abrasion Resistance	Greater than concrete							

*Post Cure Procedure: Demold specimens after 24 hours; place in oven @ 60°C for 18 hours; remove from oven for 24 hours; test.

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Packaging

E³-FLOWABLE is packaged in standard 0.042 m^3 units. **Part A, resin:** 10 kg, **Part B, hardener:** 2.29 kg, Part A and Part B are contained in a 5 gallon plastic pail, and **Part C, aggregate:** 13.6 kg bags. May also be ordered as a 4 bag high flow mix, which will yield 0.038 m^3.
E³-FLOWABLE is also packaged in 0.0084 m^3 units. **Part A, resin:** 2 kg, **Part B, hardener:** 0.52 kg, **Part C, aggregate:** 13.6 kg bag. Part A, Part B and Part C are all contained in a 6 gallon plastic pail. A maximum of 2.72 kg of aggregate can be removed from this unit to achieve the high flow mix.

Shelf Life

1 year in original, unopened package.

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 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 vacuum cleaner followed by pressure washing. Then, vacuum all water up and allow to dry completely. **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 must 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.
Mixing: Mix parts A & B (resin & hardener) separately using a drill and mixing prop. Then, pour the Part B into the Part A container. Mix for 2-3 minutes, scraping the bottom and sides of the container, to ensure proper chemical reaction. Do not whip air into the epoxy while mixing. After the epoxy has been mixed, directly pour all of the mixed resin into a horizontal shaft mortar mixer. Add Part C (aggregate) to the mixture one bag at a time and mix 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. Straps pre-placed under the plate will aid in working the grout across. Grout can be placed at a minimum of 12 mm thick to a maximum of 150 mm per lift when placed in a large mass. **Note:** Bring all **E³-FLOWABLE** materials as well as 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 reduce working time.

Curing: E³-FLOWABLE does not require 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 proper PPE when handling epoxies.
- Do not use over frost covered or frozen concrete.
- Store all materials at 23°C for at least 24 hours 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.
- Do not remove, our add more aggregate, than stated on this technical data sheet.
- In all cases, consult the Safety Data Sheet before use.

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