



E³-HCR

HIGHLY CHEMICAL RESISTANT EPOXY GROUT W/DL TECHNOLOGY™

EUCLID CHEMICAL

DESCRIPTION

E³-HCR is a three-component, highly chemical resistant novolac epoxy grout designed for industrial applications in aggressive chemical environments where exposure to concentrated acids, alkalis, corrosives or solvents can occur. A special resin and hardener formulation plus patented DL Technology™ aggregate, sets the E³-HCR apart from competitive products. E³-HCR has extremely high compressive strength, with ultra-low creep and outstanding Effective Bearing Area (EBA). Our DL Technology™ helps to greatly reduce the amount of dust released into the environment during mixing and handling.

PRIMARY APPLICATIONS

- Grouting for machinery/pump baseplates
- High chemical resistance requirements
- Secondary containment
- Process equipment

FEATURES/BENEFITS

- Highly chemical resistant
- DL Technology™ aggregate minimizes dust
- Positive effective bearing
- Ultra-high early strengths, fast return to service
- User friendly placing characteristics
- Excellent bond, machinery to foundation
- >95% Effective bearing
- Exceptional flexural and tensile strengths
- Very low creep
- Clean tools with soap and water

TECHNICAL INFORMATION

PROPERTY	1 DAY	7 DAYS	28 DAYS	POST CURE*	CHEMICAL RESISTANCE CHART
Compressive Strength ASTM C 579, 2 in (50 mm) cubes @ 73°F. (23°C)	15,000 psi (104.2 MPa)	17,000 psi (118.1 MPa)	19,500 psi (135.4 MPa)	20,000 psi (139 MPa)	Solvent
Compressive Creep ASTM C 1181	400 psi (2.8 MPa) @ 140°F. (60°C)		2.3 x 10 ⁻³ in/ in/°F.	-----	Acetone 1
Flexural Strength ASTM C 580	5,400 psi (37.5 MPa)	5,700 psi (39.6 MPa)	5,750 psi (40.0 MPa)	5,800 psi (40.3 MPa)	Butyl Acetate 1
Tensile Strength ASTM C 307	2,400 psi (16.7 MPa)	2,450 psi (17.0 MPa)	2,500 psi (17.4 MPa)	2,550 psi (17.7 MPa)	Isopropyl Alcohol, 70% 1
Bond Strength, ASTM C 882	N/A	3,200 psi (22.2 MPa)	3,350 psi (23.3 MPa)	-----	MEK 1
Coefficient of Thermal Expansion ASTM C 531, 7 Days	3.1 x 10 ⁻⁶ in/in/°F. (73 to 210°F.) (23 to 99°C)				Mineral Spirits 1
Effective Bearing Area ASTM C 1339	>90%				Acids
Working Time ICRI PROTOCOL	34 minutes at 73°F (23°C)				Acetic, 10% 3
Peak Exotherm ASTM D 2471	155°F. (68.3°C) at 125 minutes				Acetic, 25% NR
Chemical Resistance	Excellent resistance to most industrial chemicals				Acetic, 50% NR
Abrasion Resistance	Greater than concrete				Hydrochloric, 10% 1
*Post Cure Procedure: Demold specimens after 24 hours; place in oven @140°F. (60°C) for 18 hours; remove from oven for 24 hours; test					

Rating Key

- 1 = Long term Exposure (30 days)
2 = Extended Exposure (7 days)
3 = Splash / Spill (3 days)
NR = Not Recommended

PACKAGING

E³-HCR is packaged in standard 1.43 ft³ (0.04 m³) units. **Part A**, resin: 21.31 lb. (9.68 kg), **Part B**, hardener: 5.37 lb. (2.44 kg), Part A and Part B are contained in a 5 gallon plastic pail, and **Part C**, aggregate: 5/32 lb. (14.5 kg) bags.

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 1" (25 mm) thick to a maximum of 6" (150 mm) per lift when placed in a large mass. **Note:** Bring all E³-HCR materials as well as foundation and baseplate as close to 75°F. (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-HCR 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

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 75°F. (23°C) for at least 24 hours before use.
- Grout should be placed at ambient temperatures of 50°F. to 90°F. (10°C to 32°C).
- Rate of strength gain is significantly affected at temperature extremes.
- Do not remove, or add more aggregate, than stated on this technical data sheet.
- In all cases, consult the Safety Data Sheet before use.

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