GROUTS

Master Format #: 03 63 00

E³-HCR

HIGHLY CHEMICAL RESISTANT EPOXY GROUT WITH DL TECHNOLOGY™

EUCLID CHEMICAL

PACKAGING

1.43 ft³ (0.04 m³) kit (1 pail, 5 bags)
Code: 088HCR 03

APPROXIMATE YIELD

1.43 ft³ (0.04 m³) kit (Standard): One 5 gallon pail containing both part A resin (21.31 lb (9.68 kg)) and part B hardener (5.37 lb (2.44 kg), and five 32 lb (14.5 kg) bags containing Part C (aggregate). Yields 1.43 ft³ (0.04 m³).

CLEAN UP

Tools and mixer may be cleaned with soap and water before material hardens.

SHELF LIFE

1 year in original, unopened package

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 patent pending DL TechnologyTM aggregate, sets 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.

PRODUCT CHARACTERISTICS

FEATURES/BENEFITS

- Highly chemical resistant
- DL TechnologyTM 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

PRIMARY APPLICATIONS

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

CHEMICAL RESISTANCE

Solvent	
Acetone	1
Butyl Acetate	1
Isopropyl Alcohol, 70%	1
MEK	1
Mineral Spirits	1

Acids	
Acetic, 10%	3
Acetic, 25%	NR
Acetic, 50%	NR
Hydrochloric, 10%	1
Hydrochloric, 37%	1
Sulfuric, 10%	1
Sulfuric, 50%	1
Sulfuric, 98%	1

Bases/Alkalies	
Sodium Chloride, 50%	1
Sodium Hydroxide, 1-50%	1

Miscellaneous	
Diesel	1
Gas	1
Mineral Spirits	1

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

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Test Method	Test Property	Standard Unit
ASTM C579 2 in (50 mm) cubes @ 73 °F (23 °C)	Compressive Strength	1 day . . . . . .15,000 psi (104.2 MPa) 7 days . . . . . .17,000 psi (118.1 MPa) 28 days . . . . . .19,500 psi (135.4 MPa) Post Cure* . . . . . .20,000 psi (139 MPa)
ASTM C1181 400 psi (2.8 MPa) @ 140 °F (60 °C)	Compressive Creep	2.3×10^{-3} in/in/°F
ASTM C580	Flexural Strength	1 day . . . . . 5,400 psi (37.5 MPa) 7 days . . . . . 5,700 psi (39.6 MPa) 28 days . . . . . 5,750 psi (40.0 MPa) Post Cure* . . . . . 5,800 psi (40.3 MPa)
ASTM C307	Tensile Strength	1 day . . . . . 2,400 psi (16.7 MPa) 7 days . . . . . 2,450 psi (17.0 MPa) 28 days . . . . . 2,500 psi (17.4 MPa) Post Cure* . . . . . 2,550 psi (17.7 MPa)
ASTM C882	Bond Strength	1 day . . . . . N/A 7 days . . . . . 3,200 psi (22.2 MPa) 28 days . . . . . 3,350 psi (23.3 MPa)
ASTM C531 7 days	Coefficient of Thermal Expansion	3.1×10^{-6} (73 to 210 °F) (23 to 99 °C)
ASTM C1339	Effective Bearing Area	> 90%
ICRI Protocol	Working Time	34 minutes at 73 °F (23 °C)
ASTM D2471	Peak Exotherm	155 °F (68.3 °C) at 125 minutes
	Chemical Resistance	Excellent resistance to most industrial chemicals. See chemical resistance section for more details.
	Abrasion Resistance	Greater than concrete

*Post Cure Procedure: Demold specimens after 24 hours; place in oven @140 °F (60°C) for 18 hours; remove from oven for 24 hours; perform test.

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 E^3-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: E^3-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 of EUCO SOLVENT.

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 to 90 °F (10 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.