TREMCO
Construction Products Group

E³-HCR

Highly Chemical Resistant Epoxy Grout with DL Technology™

PRODUCT 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 Technology™ 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.

USAGE/PURPOSE

- ❑ 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

EUCLID CHEMICAL

- ❑ Exceptional flexural and tensile strengths
- ❑ Very low creep
- ❑ Clean tools with soap and water

PACKAGING

1 pail containing Part A & Part B and 5x 14.5kg bags of Part C

TYPICAL PHYSICAL PROPERTIES

PROPERTY		TEST METHOD	STANDARD UNIT
Compressive Strength	1 Day	ASTM C579 50mm cubes @ 23°C	104.2 MPa
	7 Days		118.1 MPa
	28 Days		135.4 MPa
	Post Cure*		139 MPa
Compressive Creep		ASTM C1181 2.8 MPa @ 60°C	2.3 x 10^{-3} in/in/°F
Flexural Strength	1 Day	ASTM C580	37.5 MPa
	7 Days		39.6 MPa
	28 Days		40.0 MPa
	Post Cure*		40.3 MPa
Tensile Strength	1 Day	ASTM C307	16.7 MPa
	7 Days		17.0 MPa
	28 Days		17.4 MPa
	Post Cure*		17.7 MPa
Bond Strength	1 Day	ASTM C882	N/A
	7 Days		22.2 MPa
	28 Days		23.3 MPa
Coefficient of Thermal Expansion	7 Days	ASTM C531	3.1 x 10^{-6} (73 to 210°F) (23 to 99°C)
Effective Bearing Area		ASTM C1339	> 90%
Working Time		ICRI Protocol	34 minutes at 23°C
Peak Exotherm		ASTM D2471	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 @ 60°C for 18 hours; remove from oven for 24 hours; perform test.*

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APPROXIMATE YIELD
Approximately 40lts per unit.

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

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.

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 25 mm thick to a maximum of 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 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.

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

PRECAUTIONS/LIMITATIONS
- ❑ Wear proper PPE when handling epoxies.
- ❑ Process equipment.
- ❑ 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 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.

HEALTH & SAFETY PRECAUTIONS
The Safety Data Sheet (SDS) must be read and understood prior to use.

TECHNICAL SERVICE
Tremco CPG Australia Pty Ltd has a team of Representatives who provide assistance in the selection and specification of products. For more detailed information or service and advice, call Customer Service on (02) 9638 2755 or fax (02) 9638 2955.

GUARANTEE/WARRANTY
TREMCO products are manufactured to rigid standards of quality. Any product which has been applied (a) in accordance with TREMCO written instructions and (b) in any application recommended by TREMCO, but which is proved to be defective, will be replaced free of charge. Any information provided by TREMCO in this document in relation to TREMCO's goods or their use is given in good faith and is believed by TREMCO to be appropriate and reliable. However, the information is provided as a guide only, as the actual use and application will vary with application conditions which are beyond our control. TREMCO makes no representation, guarantee or warranty relating to the accuracy or reliability of the information and assumes no obligation or liability in connection with the information. To the extent permitted by law, all warranties, expressed or implied are excluded.

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