EQUIPMENT FOUNDATION SYSTEMS

CHOCKFAST® Red HF Epoxy Grout

High-flow, pumpable epoxy grout

Technical Bulletin # 1040B

Product Description

CHOCKFAST® Red HF Epoxy Grout is the next generation, three-component, epoxy-based grouting compound designed to improve the installation of grout in the most difficult machinery and equipment installations. As our latest product in a long line of successful machinery grouting and chocking compounds, CHOCKFAST® Red HF Epoxy Grout is ideal for establishing the long-term support and alignment required by the most demanding industrial machinery installations and operational conditions.

Use & Benefits

CHOCKFAST® Red HF Epoxy Grout offers improved working and placement qualities. It is suitable for small and large volume pours - achieving excellent cured properties for dependable, long-term service.

Working Properties –

- Fluid consistency allows large quantities of grout to be pumped using peristaltic and worm drive (progressive cavity) type pumps.
- Because it is pumpable, it is possible to reach areas with very limited access such as those found in skid package applications or remote applications.
- No need to reduce aggregate loads to improve flow. Reducing aggregate results in loss of physical properties.
- Allows for high level of placement control.
- Can also be poured using traditional placement methods.

Performance Properties –

- Pumping grout increases placement rates and productivity while reducing installation equipment costs.
- High effective bearing area (>95%), extremely low shrinkage rates.
- Fast cure schedule allows quicker return to service.
- Greatly reduces the amount of "over the flange" waste.
- Maintains physical properties even at shallow depths.
- Can be used in conjunction with very large aggregates to fill large voids in skid packages.

Design Considerations

A key feature of CHOCKFAST® Red HF Epoxy Grout is its fluid consistency because it can be effectively pumped using peristaltic and worm-drive (progressive cavity) pumps. Impressive discharge rates can be achieved which contribute greatly when grouting large volume applications such as high-speed compressor packages; grouting of multiple pieces of equipment in a single operation, or working in difficult access areas. The fluid nature of CHOCKFAST® Red HF Epoxy Grout makes pumping not only possible, but a practical new option to consider when planning your next installation. If pumping is not possible, CHOCKFAST® Red HF Epoxy Grout can also be poured using traditional placement methods.

Application Instructions

Pre-condition CHOCKFAST® Red HF Epoxy Grout resin, hardener and aggregate to a temperature between 65°-80°F (18°-27°C) at least 24 hours prior to mixing and placement. CHOCKFAST® Red HF resin (A) and hardener (B) contain fillers which may settle when stored for long periods of time. Prior to beginning any grouting operation, check a sample pail of resin (A) and hardener (B) for fillers that may have settled to the bottom of each pail. If settling is present, separately pre-mix all pails of resin (A) and hardener (B) components to blend in any settled fillers using a variable-speed drill with suitable mixing paddle.

To mix a unit of Chockfast Red® HF Epoxy Grout, add the liquid resin and hardener to a mortar mixer and mix together thoroughly. Be sure to scrape sides and bottom of each can to dispense all liquid into the mortar mixer. Then, steadily add the required amount of aggregate into the mortar mixer until the aggregate is wetted-out. Due to the fluid nature of CHOCKFAST® Red HF Epoxy Grout, no reduction of aggregate is necessary. Please contact your Chockfast® Distributor or ITW Polymer Technologies if aggregate reduction is being considered.

Physical Properties

COMPRESSIVE STRENGTH	13,900 psi (95.8 MPa)	ASTM C-579 MOD
COMPRESSIVE MODULUS	1.6 x 10^6 psi (11.0 GPa)	ASTM C-579 MOD
TENSILE STRENGTH	2,900 psi (20.0 MPa)	ASTM D-638
FLEXURAL STRENGTH	5,200 psi (35.9 MPa)	ASTM C-580
FLEXURAL MODULUS	1.55 x 10^6 psi (10.7 GPa)	ASTM C-580
EFFECTIVE BEARING AREA	> 95 %	ASTM C-1339
COEFFICIENT OF LINEAR THERMAL EXPANSION	19.1 x 10^{-6} in/in/°F (34.4 x 10^{-6} mm/mm/°C)	ASTM C-531
LINEAR SHRINKAGE	Negligible	ASTM D-2256
BOND – STEEL	2,050 psi (14.1 MPa)	ASTM C-1002
BOND – CONCRETE	1,550 psi (10.7 MPa)	ASTM C-882
FIRE RESISTANCE	Self Extinguishing	ASTM D-635
DENSITY	127.9 lb/ft³ (2048.8 kg/m³)	ASTM C-905

Product Information

AMBIENT CURE RATES	50°F(10.0°C)	70°F(21.1°C)	90°F(32.2°C)
1 DAY	620 psi (4.3 MPa)	3,100 psi (21.4 MPa)	11,300 psi (77.9 MPa)
3 DAY	3,500 psi (24.1 MPa)	11,200 psi (77.2 MPa)	12,700 psi (87.6 MPa)
7 DAY	9,000 psi (62.0 MPa)	13,000 psi (89.6 MPa)	13,700 psi (94.5 MPa)
WORKING TIME (approximate)	>240 minutes	150 minutes	90 minutes
PEAK EXOTHERMIC TEMP	NA	130-150°F (54.4 – 65.6°C)	150-160 °F (65.6 – 71.1°C)
MIXED VISCOSITY, A&B ONLY*	6,000 – 16,000 cps	4,000 -10,000 cps	2,500 – 7,500 cps
MIXED VISCOSITY, A,B&C*	>60,000 cps	35,000 – 55,000 cps	25,000 – 37,000 cps

* Brookfield Viscosity / HBT 20 rpm

STANDARD UNIT – 5 Bag Mix

UNIT COVERAGE	2.51 ft³ ; 18.75 gallons (0.071 m³ ; 70.99 liters)
UNIT PACKAGING	Resin (A): 7.11 gallons (26.92 liters) in 2 - 5 gallon (18.93 liter) pails Hardener (B): 2.64 gallons (9.99 liters) in 1 - 5 gallon (18.93 liter) pail Aggregate (C): 5 – 40.00 lb. (18.14 kg) bags
UNIT WEIGHTS	Resin (A): 102.99 lb (46.72 kg) Hardener (B): 36.43 lb (16.52 kg) Aggregate (C): 198.09 lb (89.85 kg)
SHIPPING WEIGHT	337.51 lb (153.09 kg)

SHORT UNIT – 1 Bag Mix

UNIT COVERAGE	0.50 ft³ ; 3.75 gallons (0.014 m³ ; 14.19 liters)
UNIT PACKAGING	Resin (A): 1.42 gallons (5.38 liters) in 1 - 5 gallon (18.93 liter) pail Hardener (B): 0.53 gallons (2.00 liters) in 1 - 1.0 gallon (3.79 liter) pail Aggregate (C): 1 – 40.00 lb. (18.14 kg) bags
UNIT WEIGHTS	Resin (A): 20.59 lb (9.34 kg) Hardener (B): 7.28 lb (3.30 kg) Aggregate (C): 39.62 lb (17.97 kg)
SHIPPING WEIGHT	67.49 lb (30.61 kg)

POUR DEPTH	1-4 in (25.4 – 101.6 mm)
APPLICATION TEMPERATURE	60 - 90°F (15.6 - 32.2°C)
SERVICE TEMPERATURE	Up to 135°F (57.2°C)
CLEANUP	Water through a high pressure washer and IMPAX IXT-59 (or similar epoxy solvent) where necessary.
SHELF LIFE	1 year in dry storage
CHEMICAL RESISTANCE	Refer to Technical Bulletin 675

Reference

For additional guidelines for mixing and installation procedures, contact ITW Polymer Technologies Engineering Services Department.

Date

12/2011

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