

FasTrac CE815 Epoxy Grout



High performance epoxy grout

Description

FasTrac CE815 Epoxy Grout is a high-performance, three-component epoxy grout specifically designed for rotating equipment, machinery and dynamic load applications. FasTrac CE815 Epoxy Grout exhibits exceptional flow characteristics that allows use at full aggregate loading, ensuring maximum development of physical properties. A highly versatile material, FasTrac CE815 Epoxy Grout may be poured or pumped in place using proper equipment.

Uses

FasTrac CE815 Epoxy Grout is recommended for:

- Grouting of pumps & machinery base plates subject to dynamic loading.
- Grouting of Crane Rails.
- Vibration dampening of rotating equipment
- Grouting of post tension pour back pockets
- Grouting anchor bolts & dowels
- Repair and re-build of damaged concrete
- General grouting in corrosive environments
- Grouting of wind turbines

Features & Benefits

- Low heat generated during cure making it suitable for pours up to 600 mm
- Positive expansion per ASTM C827
- Long pot life for easy handling and placement
- High compressive strength
- Excellent creep resistance ensuring it maintains its multi-dimensional support under constant load
- Variable flow capability – can fill gaps from approximately 12 mm to 600 mm
- Pre-packaged aggregate – optimum design flow-ability for pour or pump applications
- Excellent adhesion to concrete and steel
- Chemical resistant to a wide range of chemicals
- Faster curing and superior performance properties to cementitious grouts
- Superior effective bearing area

Physical Properties

Physical Properties at 23.8°C				
Typical results are provided for the Standard and High flow mixed units. Refer to Packaging for the mixing ratios of the resin, hardener and aggregate components for each option.				
TEST METHOD	RESULTS			
	HIGH FLOW (4 BAG UNIT)		STANDARD FLOW (5 BAG UNIT)	
ASTM C579 Compressive Strength B, Load Rate II	1 Day -	62.1 MPa	1 Day -	68.9 MPa
	3 Days -	96.5 MPa	3 Days -	100 MPa
	7 Days -	106.9 MPa	7 Days -	110.3 MPa
ASTM C579 Compressive Modulus of Elasticity	15172 MPa		14483 MPa	
ASTM C1181 Compressive Creep 2.8 MPa @ 60°C	<0.005 in/in (.127 mm/mm)		<0.005 in/in (.127 mm/mm)	
ASTM C307 Tensile Strength	17.2 MPa		15.2 MPa	
ASTM C307 Tensile Modulus of Elasticity	14483 MPa		13789 MPa	
ASTM C580 Flexural Strength	31.02 MPa		28.26 MPa	
ASTM C580 Modulus of Elasticity	13789 MPa		13789 MPa	
ASTM C882 Bond Strength	24.1 MPa		22.8 MPa	
ASTM C884 Thermal Compatibility	Pass		Pass	
ASTM D2471 Gel Time	60 minutes		120 minutes	



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ASTM D2471 Peak Exotherm	43.3° C	32.2° C
Physical Properties at 23.8°C		
TEST METHOD	RESULTS	
	HIGH FLOW (4 BAG UNIT)	STANDARD FLOW (5 BAG UNIT)
ASTM C531 Linear Shrinkage on cure	0.01%	0.01%
ASTM C531 Coefficient of Thermal Expansion	28 x 10 ⁻⁶ cm/cm °C	32 x 10 ⁻⁶ cm/cm °C
	26 x 10 ⁻⁶ cm/cm °C	25 x 10 ⁻⁶ cm/cm °C
Pour Depth at 23.8°C with proper curing and expansion joint allowance	Min 12 mm to 300 mm	Min 12 mm to 600 mm

Curing Properties				
Curing temperature	HIGH FLOW (4 BAG UNIT)		STANDARD FLOW (5 BAG UNIT)	
	Working time	Initial cure time	Working time	Initial cure time
10 °C	4 hours	42 hours	8 hours	84 hours
12.8 °C	3 hours	36 hours	7 hours	72 hours
18.3 °C	2 hours	30 hours	5 hours	60 hours
23.8 °C	1.5 hours	24 hours	3.5 hours	48 hours
29.4 °C	45 mins	18 hours	2.5 hours	36 hours
35 °C	30 mins	12 hours	1.5 hours	24 hours
37.8 °C	20 mins	6 hours	1 hour	12 hours

Application Guidelines

Surface Preparation (Concrete)

Concrete shall be fully cured for a minimum of 28 days and with a minimum compressive strength of 25 MPa and surface tensile strength of 2.0 MPa. All surfaces to be in contact with FasTrac CE815 Epoxy Grout shall be free of oil, grease, laitance and other contaminants. Concrete must be clean, sound, dry and roughened to ensure a mechanical key. The prepared surface must have an exposed coarse aggregate profile. Concrete preparation methods include scabbling, scarifying and high-pressure water blasting NB: Diamond Grinding is insufficient as surface preparation. A concrete surface profile (CSP) of 5 to 10 in accordance with ICRI guideline 310.2 R is required.

Surface Preparation (Steel)

An SSPC-SP6 commercial finish on all metal surfaces will optimize bond development to steel. Prepared surfaces shall be clean, free of oil, grease, rust, loose coatings and any other contaminants. Air relief holes must be provided where base plate design and high spots will create air pockets. Any shims and wedges that are to remain in place, should be positioned a minimum of 50mm from the edge of the baseplate & have rounded corners to reduce stresses created during grouting. The prepared steel can be coated with an epoxy primer if the grouting is not happening immediately. If left for more than a few weeks then the surface should be prepared again. If bond to steel is not required, then coat with a bond breaker such as wax, or grease. NB: commercially available form release oils are insufficient to prevent bond.



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FORMWORK

Formwork shall be constructed of rigid non-absorbent materials, securely anchored, liquid-tight and strong enough to resist forces developed during grout placement. The clearance between formwork and baseplate shall be sufficient to allow for a headbox. The clearance for remaining sides shall be 25 – 50 mm. Formwork must be treated with paste wax or polyethylene tape to prevent bond & facilitate release. NB: commercially available form release oils are insufficient to prevent bond. The unrestrained shoulders of the grout must be kept to a minimum. Height of formwork shall extend a minimum of 25 mm above the bottom of the base plate. Isolation joints may be necessary depending on pour dimensions. Chamfer strips should be built into formwork to provide a 45° chamfer on vertical & top edge sharp corners, alternatively these can be mechanically created once the formwork is stripped post placement of the grout. Contact HYCHEM for additional technical / design support.

MIXING

For optimum performance, all components should be conditioned to between 18°C and 30°C prior to use. Pour all Component B (hardener) into pail containing Component A (resin). Mix thoroughly by hand with a slow speed drill and paddle mixer to avoid air entrapment and continue mixing until streak free (approximately 1 to 2 minutes). Pour mixed liquids into a pan mixer (stationary barrel with moving blades). While mixing, slowly add Component C (aggregate) and mix only until aggregate is completely wet. Do not exceed one-half the maximum capacity of the mortar mixer. Concrete or cement mixers must not be used for mixing epoxy grout. Hand mixing with a drill and paddle mixer is only suitable for the smaller 1 bag units. Working time is approximately 60 minutes when temperatures are at 24°C. Mixed grout must be placed immediately. Contact HYCHEM for additional technical support.

METHODS OF PLACEMENT

Placement thicknesses range from 12mm to 600mm. FasTrac CE815 Epoxy Grout may be poured or pumped into place. All grout shall be placed from one side only, maintaining contact with the bottom of the baseplate at all times. Place grout to the bottom edge of the base plate only. The grout should be placed across the shortest distance possible. The use of a headbox is highly recommended to facilitate flow and avoid air entrapment. For clearances greater than 300mm call HYCHEM for additional technical support. Isolation joints must be used when grouting base plates over 3 meters long. Temperature of substrate and equipment should be between 13°C and 32°C at time of placement.

POST-PLACEMENT PROCEDURES

Final finishing should ensure material is flush with bottom edge of baseplate. Finishing of exposed surfaces is aided by using a solvent wiped trowel just before material hardens. Solvent must not be poured directly onto placed grout. Do not wet cure epoxy grout. Placed FasTrac CE815 Epoxy Grout does not require any special curing procedures but must be protected from rain until initial set has taken place. If chamfer strips were not included in formwork, then exposed shoulders should be mechanically trimmed to provide a 45° chamfer on vertical & top edge sharp corners. Tools and equipment can be cleaned with water and strong detergent before grout sets (sand may be used as an abrasive), alternatively XYLENE can be used for cleanup where necessary. In-service operation may begin immediately after minimum required grout strength and modulus have been achieved.

CONSIDERATIONS

- Flow-ability and strength gain are adversely affected by lower temperatures.
For placement temperatures below 13°C or above 32°C, contact HYCHEM for hot / cold weather grouting guidelines.
- To obtain bond, concrete shall be visibly free of surface moisture.
- When clearances are outside the recommended range or when exceeding maximum placement volumes, contact HYCHEM
- Do not add solvents to increase flow-ability.
- Maximum operating temperature is approximately 60°C.
- Published Physical Properties are typical values at ambient conditions

Compressive Strength results published above are typical results based on laboratory testing using 50 mm cubes. Variations of these results can be expected if alternative sample sizes, or test methodology is used.





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PACKAGING

5 x bag (Standard Flow) unit yields approximately 67 litres. Unit consists of Resin (Part A) + Hardener (Part B) + 5 x 22.7 kg Bags of Aggregate (Part C)

4 x bag (High Flow) unit yields approximately 56 litres. Unit consists of Resin (Part A) + Hardener (Part B) + 4 x 22.7 kg Bags of Aggregate (Part C)

SHELF LIFE

FasTrac CE815 Epoxy Grout has a shelf life of 2 years from date of manufacture if stored under shelter and at 25°C in original un-opened container.

SAFETY PRECAUTIONS

Wear gloves, eye protection and overalls during mixing and application. Ensure there is adequate ventilation and avoid breathing the vapor from the liquid components during mixing. Consult the material Safety Data Sheet before use.

WARNING – ENVIRONMENTAL CONDITIONS

Temperature and the surrounding atmospheric conditions will play a part in the curing process of all epoxy products. Under conditions of low temperatures and high humidity the final cured surface finish can be adversely affected potentially resulting in poor gloss retention, discolouration over time, poor overcoat-ability and intercoat adhesion. Quite often these conditions will result in the formation of a white film over the surface often evident after contact with water. This chemical reaction with the atmosphere is commonly referred to as “amine bloom” or “amine blush”. If this occurs then the existing coating will need to be abraded to completely remove the affected surface to ensure the adhesion of subsequent applications. In some cases partial or complete re-priming may be necessary. Attention also needs to be paid to the substrate temperature which should be at least 3°C and preferably 5°C above the dew point during the curing phase. Industry standards recommend the accurate recording of times and dates, batch numbers, consumption rates and environmental conditions including substrate and air temperatures, humidity levels and dew point readings during both the application and curing processes. Full material warranties cannot be provided unless all the relevant data has been recorded accurately. If in doubt consult the Hychem technical department for advice.

Warranties and Disclaimers

Hychem warrants that this product shall conform to the technical specifications published in the product literature. The quality and fitness of the product is dependent upon the proper use and application of the product by the applicator. Hychem has no role in the application of the finished polymer other than to manufacture and supply its components. It is vital that the person applying this product understands the product and is fully trained, experienced and competent in the use of epoxy grouting products. There are no warranties that extend beyond the description on the face of this instrument, except when provided in writing, directly by Hychem and executed under seal by a company officer.

Field Support

Field support where provided, does not constitute supervisory responsibility. Suggestions made by HYCHEM either verbally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they and not HYCHEM are responsible for carrying out procedures appropriate to a specific application.

Customer Responsibility

The technical information and application advice given in this publication is based on the best information available at the time of print. As the information herein is of a general nature, no assumption can be made as to the product suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by Commonwealth or State Legislation. The owner, his representative or the contractor is responsible for checking the suitability of products for their intended use.

