

Which Product is Right for Your Application?

Engineered Grouts & Chocking Compounds	Product	Description
	Chockfast Red	A 3-component, 100% solids, deep-pour, multi-purpose epoxy grout for fast, permanent alignment of reciprocating equipment. Also used as a polymer concrete for fast reconstruction of worn or damaged foundations. Chockfast® Red provides excellent vibration damping for static and dynamic loads, while its gentle exothermic cure allows for single pours from 2" to 18" (51 mm to 457 mm).
	Chockfast Red SG	A 3-component, 100% solids, enhanced flow, epoxy grout, Chockfast Red SG is used to grout large machinery applications where a lighter consistency material is required and clearances from 1" to 2" (25 mm to 51 mm) are typical.
	ESCOWELD 7505/7530	A 3-component, 100% solids, deep pour, epoxy grout; ESCOWELD® 7505/7530 offers many benefits designed to simplify equipment installation while providing excellent chemical resistance and vibration damping for pumps and other critically aligned rotating equipment. Pours from 2" to 18" (51 mm to 457 mm) are typical.
	CWC 604 Machine Bond	A 3-component, 100% solids, deep pour, epoxy grout; CWC 604 Machine Bond ® offers many of the same benefits characteristic of our other fine epoxy grouts, but where a lighter consistency material is required. Pours from 1" to 18" (51 mm to 457 mm) are typical. CWC 604 Machine Bond ® is available in North America only.
	Chockfast Blue	3-component, 100% solids, high chemical and temperature-resistant, high flow epoxy grout for new or retrofit installations in caustic environments. Chockfast® Blue can also be used as a substitute for steel soleplates or rails; normally used in a thickness range of 1" to 1 ½" (25 mm to 38 mm).
	Chockfast Orange	2-component, low viscosity, structural epoxy "chock", or "poured shim" with variable hardener ratios options. Replaces tediously fitted steel chocks or shims. Assures intimate contact with machined or un-machined equipment bedplates. Virtually 100% effective bearing underneath supported equipment. Normally poured in thickness' of 1-1/4" to 2-1/2" (32 mm to 64 mm)
	Chockfast Black	2-component; filled structural epoxy "chock" or "poured shim"; used to support and maintain permanent frame alignment under hot-running machinery. Elevates equipment, allowing a vent space between equipment and foundation to lower foundation temperatures and minimize upward thermal growth. Virtually 100% effective bearing underneath supported equipment. Normally poured in thicknesses of 1-1/4" to 2-1/2" (32 mm to 64 mm).
	Chockfast Gray	2-component, highly flowable, thin pour "chock" or "poured shim"; designed to maintain proper alignment and support of machinery and equipment. Able to withstand severe industrial environments with a high degree of both physical and thermal shock resistance. Normally poured in thicknesses of ½" to 1" (13 mm to 25 mm).
	ITW Quickset	2-component, high-strength, fast-setting, multi-purpose epoxy with a convenient mixing ratio of 1:1. Can be used as a liquid shim, an anchoring adhesive or as structural gap filler. Sets within 15 minutes, with full cure in 6 hours. Hardens to 78 Shore D in 30 minutes and 84 Shore D in 4 hours. Normally poured in thickness' up to ¾". (19mm)
ITW PRC 100 Non-Shrink Grout	A precision, non-shrink, cement grout that meets or exceeds all requirements of the Corps of Engineers CRD C-621 and ASTM C-1107.	

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Technical Bulletin # 617R

Product Description

CHOCKFAST Red is a three-component, high strength, 100% solids, epoxy grouting compound used to grout large machinery and to support soleplates in all types of foundations. CHOCKFAST Red has an extremely high compressive strength. This along with negligible shrinkage makes it ideal for installing critically aligned machinery within very close tolerances.

Use & Benefits

CHOCKFAST Red has the following advantages when compared to conventional cement grouts:

- Impervious to oil
- Cures at least three times as quickly
- No mixing ratios to measure
- Grouts machinery in final aligned position
- High physical strength
- High impact strength
- Resistance to many more chemicals
- Strong bond to metal and concrete
- Unaffected by weathering and freeze / thaw cycling
- Stated physical properties assured
- Superior resistance to fatigue

Design Considerations

CHOCKFAST Red is quick curing, relative to cement grouts, but the cure is thermally gentle. This allows thick pours to be made without causing the stress cracks often associated with a hot-curing epoxy grout. CHOCKFAST Red may be used in thickness greater than 2 inches (50mm), however, individual pours should generally not exceed 18 inches (46cm) in thickness and 7 feet (2.2m) in length. When grouting critically aligned machinery coupled to another machine, it is advisable to limit the final leveling pour in accordance with the instructions in Bulletin No. 615 (latest revision).

CHOCKFAST Red contains no diluents that could interfere with the curing mechanism or that could cause material loss during or after cure. Therefore, machinery may be positioned at its final elevation before pouring because the shrinkage is negligible. Critical alignments are maintained during machinery operation due to its high dimensional stability and resistance to creep and vibration.

Application Instructions

CHOCKFAST Red may be mixed with contractor's hoe and wheelbarrow or in a small portable mortar mixer. Pre-condition resin, hardener and aggregate to 65°-80°F (18°-27°C) for 48 hrs. before mixing. Thoroughly mix hardener with resin first before mixing in aggregate. Where a very flowable mix is required the aggregate content may be reduced accordingly. However, in load-bearing areas a maximum reduction to 3-1/2 bags is recommended. Please contact the CHOCKFAST Distributor or ITW Polymer Technologies if less than 3-1/2 bags are being considered. See Bulletin No. 642 for mixing and installation procedures.

Physical Properties

COMPRESSIVE STRENGTH	15,250 psi (1,072 kg/cm ²)	ASTM C-579 MOD
COMPRESSIVE MODULUS OF ELASTICITY	2,000,000 psi (140,600 kg/cm ²)	ASTM C-579 MOD
LINEAR SHRINKAGE	Not Measurable	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	11.2 x 10 ⁻⁶ /°F @ 32°F to 140°F (20.1 x 10 ⁻⁶ /°C @ 0°C to 60°C)	ASTM D-696
FLEXURAL STRENGTH	4,025 psi (283 kg/cm ²)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY	2,000,000 psi (140,600 kg/cm ²)	ASTM C-580
TENSILE STRENGTH	1,890 psi (133 kg/cm ²)	ASTM D-638
IZOD IMPACT STRENGTH	4.6 in.lb/in. (0.02 N.m/mm)	ASTM D-256
SERVICE TEMPERATURE	Up to 140°F (60°C)	
FIRE RESISTANCE	Self-Extinguishing	ASTM D-635
SPECIFIC GRAVITY	2.06	

Product Information

UNIT COVERAGE	1.6 ft ³ or 2,765 in ³ (45.3 Liters)
APPLICATION TEMPERATURE	55°F (13°C) to 95°F (35°C)
UNIT PACKAGING	Resin (NH): 1.6 gal (6.1 L) in a 3 gal pail Hardener (NH): 0.9 gal (3.5 L) in a plastic tray inserted into the top of the resin can Aggregate: (4) 46 lb. (21 kg) bags
UNIT WEIGHT	Resin: 15.4 lbs (7 kg) Hardener: 7.6 lbs (3.4 kg) Aggregate: 184 lbs (84 kg)
SHIPPING WEIGHT	207 lbs (94 kg)
CURE TIME (approximate)	54 hours @ 60°F (16°C); 36 hours @ 72°F (21°C) 24 hours @ 27°C (80°F); 18 hours @ 32°C (90°F)
POT LIFE	Approximately 3 hours @ 21°C (70°F)
SHELF LIFE	2 years in dry storage
CLEAN UP	Water or IMPAX IXT-59 or similar epoxy solvent

Date

06/2006

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Warranty: ITW Polymer Technologies, a division of Illinois Tool Works Inc., warrants that its products meet their printed specifications. This is the sole warranty. This warranty expires one year after product shipment.

Warranty Claims: If any product fails to meet the above, ITW Polymer Technologies will, at its option, either replace the product or refund the purchase price. ITW Polymer Technologies will have no other liability for breach of warranty, negligence, or otherwise. All warranty claims must be made in writing within one year of the date of shipment. No other claims will be considered.

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Modification of Warranty: No distributor or sales representative has the authority to change the above provisions. No change in the above provisions will be valid unless in writing and signed by an officer or the Technical Director of ITW Polymer Technologies. No term of any purchase order shall serve to modify any provision of this document.

Mediation and Arbitration: If any dispute arises relating to products or product warranties, either the purchaser or ITW Polymer Technologies may a) initiate mediation under the then current Center for Public Resources (CPR) Model Procedure for Mediation of Business Disputes, or b) initiate a non-binding arbitration under the rules of the American Arbitration Association for the resolution of commercial disputes.

Thin Pour, Rapid Cure, High Strength, Epoxy Grout

Technical Bulletin # 618 I

Product Description

CHOCKFAST RED SG is a three component, high strength, 100% solids epoxy grouting compound which is used to grout large machinery and to support soleplates in all types of foundation designs with clearances as little as 1" (25mm). CHOCKFAST RED SG has extremely high physical properties and negligible shrinkage, making it ideal for final positioning of critically aligned equipment within close tolerances. Skid mounted compressors, extruders, turbines, pumps, motors and crane rails are just a few types of equipment supported on CHOCKFAST RED SG. When using CHOCKFAST RED SG for crane rail applications expansion joints may be placed every 10' (3m).

Use & Benefits

CHOCKFAST RED SG has the following advantages when compared to conventional cementitious grouts:

- Impervious to oil and chemical attack
- Pre-packaged unit
- Higher physical strengths
- Unaffected by weathering and freeze/thaw cycling
- Cures at least three times as quickly
- Grout machinery in final aligned position
- Strong bond to metal and concrete
- Superior resistance to fatigue

CHOCKFAST RED SG contains no non-reactive diluents which could interfere with the curing mechanism or which could cause material loss during or after cure. Machinery may be positioned at its final elevation before pouring because the shrinkage is negligible. Critical alignments are maintained during machinery operation due to CHOCKFAST RED SG's high dimensional stability and resistance to creep and vibration.

Design Considerations

For design considerations and application details, please request Bulletin No. 643 or contact ITW Polymer Technologies' Engineering Services Department.

Application Instructions

CHOCKFAST RED SG may be mixed with a contractor's hoe and wheelbarrow or in a portable mortar mixer. Thoroughly mix hardener with resin first before mixing in aggregate. Where a very flowable mix is required, the aggregate content may be reduced accordingly. Contact the CHOCKFAST Representative or ITW Polymer Technologies when reducing aggregate.

CHOCKFAST RED SG is quick curing relative to cement grouts, but the cure is thermally gentle. This allows thick pours to be made without causing the stress cracks often associated with a hot curing epoxy grout. CHOCKFAST RED SG may be used in any thickness greater than 1" (25mm); however, individual pours should generally not exceed 4" (100mm) in thickness and 5' (1.5m) in length.

CHOCKFAST RED SG cure rates and flowability will be enhanced somewhat if material temperatures are warmer than the existing ambient conditions listed above. It is always a good idea to keep CHOCKFAST RED SG materials in a well-protected area until the job site is fully prepared for mixing and placement.

NOTE: Standard CHOCKFAST RED is available and allows deep single pours to 18" (450mm) for concrete reconstruction. Please see Bulletins No. 642 and 617.

Physical Properties

COMPRESSIVE STRENGTH	18,120 psi (1174 kg/cm ²)	ASTM C-579 (MOD)
COMPRESSIVE MODULUS OF ELASTICITY	1.97 x 10 ⁶ psi (138535 kg/cm ²)	ASTM C-579 (MOD)
LINEAR SHRINKAGE	Not Measurable	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	10.8 x 10 ⁻⁶ /°F @ 32°F to 140°F (19.4 x 10 ⁻⁶ /°C @ 0°C to 60°C)	ASTM D-696
FLEXURAL STRENGTH	4,800 psi (340 kg/cm ²)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY	2.62 x 10 ⁶ psi (184,200 kg/cm ²)	ASTM C-580
TENSILE STRENGTH	2,130 psi (150 kg/cm ²)	ASTM D-638
IZOD IMPACT STRENGTH	7.2 in.lbs./in. (0.32 Newton m/cm)	ASTM D-258
FIRE RESISTANCE	Self-extinguishing	ASTM D-635
SERVICE TEMPERATURE	Up to 140°F (60°C)	
SPECIFIC GRAVITY	2.24	

Product Information

COVERAGE	1.6 ft ³ (45.3 Liters)
APPLICATION TEMPERATURE	55°F (13°C) to 95°F (35°C)
UNIT PACKAGING	Resin (NH): 2.59 gal (9.05 L) in a 3 gal pail Hardener (H): 0.43 gal (1.63 L) in a 1gal can Aggregate: (4) bags - 46 lb. (21 kg) / bag
UNIT WEIGHT	Resin: 23.3 lbs. (10.6 kg) Hardener: 3.6 lbs. (1.6 kg) Aggregate: 184 lbs (84 kg)
SHIPPING WEIGHT	213 lbs. (96.6 kg)
CURE TIME (approximate)	24 to 48 hours @ 70°F (21°C)
POT LIFE	1 hour @ 70°F (21°C)
CLEAN UP	IMPAX IXT-59 or similar epoxy solvent
SHELF LIFE	Two years in dry storage

Reference

For design considerations and application details please request Bulletin No. 642 or contact ITW Polymer Technologies' Engineering Services Department.

Date

06/2006

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Technical Bulletin # 1612D

Product Description

ESCOWELD 7505E/7530 is a highly flowable, epoxy grout system engineered for use with dynamically - operated industrial machinery and equipment where performance and operating reliability are crucial. ESCOWELD grout functions as a critical interface between the equipment and its foundation ensuring proper transference of static and dynamic loads generated by operating equipment to the foundation. This allows the foundation to efficiently absorb and dissipate the loads true to its purpose.

ESCOWELD Epoxy Grout provides proper support for the operating equipment. When coupled with a properly designed anchoring system, ESCOWELD grout maintains critical shaft alignment fundamental for optimum performance of rotating and reciprocating equipment.

ESCOWELD 7505E/7530 also offers improved resistance to many industrial chemicals that would typically destroy conventional cement grouts. A foundation too, is subject to chemical attack. If the foundation mass is reduced by chemical attack, so is its effectiveness as a support and damping mechanism. Using guidelines available from ITW Philadelphia Resins, ESCOWELD grout can also be used to protect concrete foundations from chemical attack that would otherwise deteriorate as a result.

Use & Benefits

The key to the performance of ESCOWELD 7505E/7530 is the combination of ESCOWELD 7505E, a versatile liquid epoxy resin/hardener system, with ESCOWELD 7530, a engineered silica aggregate specifically designed for greater flowability, strength and self-leveling characteristics. Other unique features and benefits that have been offered for over 20 years with ESCOWELD 7505 include:

- Excellent bondability to itself without surface preparation to simplify multiple pour projects.
- Wide range of depth of pour, from 1-1/2" to 18". This simplifies and speeds up many jobs that would otherwise have required multiple pours and additional surface preparation.
- Cures in 24 hours which is especially valuable during tight turn-around schedules or emergency repairs.
- Exceptional dimensional stability as well as excellent resistance to chemical and physical degradation.
- Negligible shrink on cure.

Design Considerations

For optimum results, follow the recommendations closely for site preparation, grout mixing, grout placement, and grout finishing, etc. found in "ESCOWELD 7505E/7530 Installation Procedures, Bulletin No. 1600.

Application Instructions

The performance of any epoxy machinery grout system depends not only on the engineering and physical characteristics of the cured grout, but also on the quality of the mixing and installation. Proper mixing of all components is particularly important in obtaining the maximum strength and adhesive characteristics of epoxy grouts.

- ESCOWELD 7505E is packaged in a single can. Lower portion contains Epoxy Resin and upper portion contains the converter. Pour entire contents of converter into the Epoxy Resin container and mix properly.
- Mix ESCOWELD 7530 aggregate into combined liquid components in a wheelbarrow or mechanical mixer (mortar/plaster mixer) until all dry particles are wetted out.

Physical Properties

COMPRESSIVE STRENGTH	14,000 psi (984 kg/cm ²) (Actual field strength may vary, from 10,000 to 14,000 psi depending on curing and testing conditions)	ASTM C-579 MODIFIED
COMPRESSIVE MODULUS OF ELASTICITY	1.8 x 10 ⁶ psi (1.26 x 10 ⁵ kg/cm ²)	ASTM C-579
LINEAR SHRINKAGE	0.036% (.00036 in/in)	ASTM D-2568
COEFFICIENT OF LINEAR THERMAL EXPANSION	26.2 1 x 10 ⁻⁶ / °C @ 0°C to 60°C (14.6 x 10 ⁻⁶ / °F @ 32°F to 140°F)	ASTM C-531
FLEXURAL STRENGTH	4,700 psi (329 kg/cm ²)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY	1.8 x 10 ⁶ psi (1.26 x 10 ⁵ kg/cm ²)	ASTM C-579
TENSILE STRENGTH	2,100 psi (147 kg/cm ²)	ASTM D-307
ADHESIVE BOND TO STEEL	2,100 psi (147 kg/cm ²)	ASTM C-307
IZOD IMPACT STRENGTH		ASTM D-258
FIRE RESISTANCE	Self Extinguishing	ASTM D-637
SERVICE TEMPERATURE	Up to 140°F (60°C)	
SPECIFIC GRAVITY		
DENSITY	125 lbs/cu ft (1948 kg/cu meter)	

Product Information

COVERAGE	2.4 cu.ft. (68 liters)
APPLICATION TEMPERATURE	55°F To 90°F (13°C to 32°C)
CURE TIME (approximate)	12 hours @ 90°F (32°C) 24 hours @ 80°F (27°C) 36 hours @ 70°F (21°C) 38 hours @ 60°F (16°C)
POT LIFE	2 Hours @ 77°F (25°C)
CLEAN UP	Water or IMPAX IXT-59 Solvent
UNIT PACKAGING	Resin (NH): 2.6 gal (9.8 L) in a 5 gal bucket Hardener (NH): 1.2 gal (4.6 L) in a plastic tray inserted into the top of the resin can Aggregate: (5) 53 lb. (24 kg) bags
UNIT WEIGHT	Resin: 25.7 lbs (11.7 kg) Hardener: 10.2 lbs (4.2 kg) Aggregate: 265 lbs (120 kg)
SHIPPING WEIGHT	305 lbs (138 kg)
SHELF LIFE	2 years

Date 09/2005

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Technical Bulletin # 1104

Product Description

CWC 604 Machine Bond is a three-component, 100% solids, epoxy resin grout specifically formulated for grouting heavy machinery, engines and production equipment. It is designed to resist vibration, chemical attack, high torque loads and the various stresses associated with such installations.

Features:

- Excellent physical properties
- Flowable, self leveling
- Low exothermic cure
- Deeper monolithic pours (18"+)
- Extended placement time
- Easy water clean-up

Basic Uses

- Heavy machinery
- Compressors and engines
- Production equipment
- Auxiliary equipment

Installation Method

Pour in place, self-leveling.

Package & Yield

A unit of CWC 604 Machine Bond consists of three components: Two liquids (Part A - resin, Part B - hardener) and an aggregate (Part C). Parts A and B are packaged in a two-component five gallon pail, and Part C is packaged in four 60 pound bags.

Yield	2 cubic feet (0.057 cubic meters)
Shipping weight	284 pounds (129 kilograms)
Freight Classification	Acid Proof Cement

Surface Preparation

All surfaces to be bonded must be dry, sound and free from any contamination of foreign matter. Concrete surfaces should be prepared by mechanical abrasion such as chipping, bush hammering, sand blasting or similar methods. A rough surface will aid adhesion. Sandblasting is recommended in preparing metal surfaces.

Forming

CWC 604 Machine Bond is a "flowing" grout and must be retained within forms until cured. Forms must be of adequate strength, properly braced and sealed watertight against leakage. Forms must be coated with a suitable release agent, such as paste wax, to permit their removal after the grout has cured. Forms should allow for hydraulic head, as needed, to facilitate the filling of the grout bed area.

Proper Tools, Supplies and Accessories

All material and equipment for mixing, placing and clean-up should be on hand before any mixing is started. The use of a simple checklist is recommended for use by personnel involved in a CWC 604 Machine Bond installation. This list should include: rubber gloves, safety glasses, particle masks, protective clothing, electric or air drill and paddle attachment, concrete or mortar mixer and cleaning solvent. For a detailed material checklist, consult our brochure "CWC 604 Machine Bond Epoxy Resin Grout - Specifications for Installation".

ITW POLYMER TECHNOLOGIES

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ITW Polymer Technologies
Registered to ISO 9001:2008
File No. A-1759ITW Polymer Technologies
ISO 9001:2008
Q-05420

Mixing & Placing

Strict adherence to instructions printed on the container is essential. Resin and curing agent must be thoroughly mixed prior to adding the aggregate. Consult our brochure "CWC 604 Machine Bond Epoxy Resin Grout; Specifications for Installation" for detailed instructions.

All surface preparation and forming must be done before mixing procedures are started

Temperature Factors Affecting Grouting

The temperature of all components of CWC 604 Machine Bond, Parts A, B, and C, should be 75° to 90°F (23.8° to 32.2°C) before mixing to produce a readily self-leveling grout with good flowability. Mixing grout materials when their temperatures are below or at the low end of the indicated ranges adversely affects proper mixing and inhibits the flowability of the grout. Mixing grout materials when their temperatures are above or at the high end of the indicated ranges hastens the cure of the grout thus reducing the "working time". The grout materials should be stored at a temperature within the ranges indicated. Work area and substrate temperatures should also be within the recommended temperature range.

Technical Information

COMPRESSIVE STRENGTH:	16,100 psi
COMPRESSIVE MODULUS OF ELASTICITY:	3.8×10^6 psi
TENSILE STRENGTH:	3,065 psi
TENSILE MODULUS OF ELASTICITY (ASTM D638):	3.4×10^6 psi
FLEXURAL STRENGTH:	7,880 psi
FLEXURAL MODULUS OF ELASTICITY:	2.0×10^6 psi
BOND STRENGTH (ASTM C882):	2,520 psi
SHEAR STRENGTH (ASTM D732):	3,910 psi
COEFFICIENT OF LINEAR THERMAL EXPANSION (ASTM D732):	16.0×10^{-6} in/in/°F
HARDNESS, SHORE D (ASTM C2240):	93
SPECIFIC GRAVITY:	1.89
POT LIFE:	3.5 hours @ 75°F
STORAGE CONDITIONS:	Store dry at 55° to 95°F, condition to 75° to 90°F prior to applying.
VISCOSITY:	Slurry consistency
SHELF LIFE:	1 year
PRECAUTION:	Caution: Eye and skin irritant (evidenced by itching, redness). Potential skin sensitizer. Avoid contact with eyes. Avoid prolonged or repeated skin contact. Do not take internally. Wash thoroughly after handling.

First Aid: Eyes - flush with water for 15 minutes. Get immediate medical attention. Skin - remove contaminated clothing and excess contaminant, wash skin with soap and water. Inhalation -remove to fresh air. Ingestion - get immediate medical attention. See Material Safety Data Sheet for complete information
 Samples cured and tested at 75°F, 14 days.

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Epoxy Grout for Severe Applications

Technical Bulletin # 616K

Product Description

CHOCKFAST Blue is a two-component, aggregate-filled, pourable epoxy grouting compound for severe applications. This highly developed material is often used to replace steel soleplates or rails and is used as an epoxy foundation capping material that is resistant to high operating temperatures. Its unique properties permit usage directly under highly stressed machinery mounting surfaces.

Use & Benefits

Typical applications include the grouting of diesel engines, compressors, generators, gears, pumps and most other heavy equipment. CHOCKFAST Blue is unexcelled under heavy reciprocating and rotary machinery due to its excellent resistance to creep, fatigue and shock forces. It is also an excellent support surface for the CHOCKFAST Black epoxy chock.

Design Considerations

CHOCKFAST Blue is normally used in a thickness range of 1" to 1-1/2" (25-38mm). Thicker sections can be constructed with CHOCKFAST BLUE if proper layering techniques are used. Please contact ITW Polymer Technologies for additional application instructions.

Long pours should be divided into sections not exceeding 3'-6" (1.1m) in length. Longer, thicker or thinner pours are possible, but ITW Polymer Technologies should be consulted before deciding upon them. The pourable viscosity of the CHOCKFAST BLUE provides for essentially 100% surface contact. Because CHOCKFAST BLUE has negligible shrinkage, final alignment may be set before grouting.

Application Instructions

For CHOCKFAST BLUE temperatures that will be between 120°-140°F (49°-60°C) during engine operation the static loading shall not normally exceed 500 psi (35 kg/cm²) which is perfectly practical for most machinery. Below 120°F (49°C), loads up to 2,000 psi (140 kg/cm²) are permissible, but 1,200 psi (85 kg/cm²) should not be exceeded without reference to ITW Polymer Technologies, who are always available for consultation on any application.

Precondition resin and hardener to 70°-80°F (21°-27°C) for 24 hours before mixing. The hardener should be added to the resin and power mixed until a homogeneous color and texture are apparent. Because the resin is aggregate-filled, heavy duty mixing equipment is required. Mixing for 3-5 minutes with a Kol mixer or a large Jiffy mixer blade in a 3/4" drilling machine is usually sufficient.

Physical Properties

COMPRESSIVE STRENGTH	9,000 psi (1336 kg/cm ²)	ASTM C-579 MOD
COMPRESSIVE MODULUS OF ELASTICITY	1,640,000 psi (115300 kg/cm ²)	ASTM C-579 MOD
LINEAR SHRINKAGE	0.0001 in./in. (0.0001 mm/mm)	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	15.4 X 10 ⁻⁶ /F° @ 32°F to 140°F (27.7 x 10 ⁻⁶ /C° @ 0°C to 60°C)	ASTM D-698
FLEXURAL STRENGTH	4,920 psi (345 kg/cm ²)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY	1.7 X 10 ⁶ psi (120300 kg/cm ²)	ASTM C-580
TENSILE STRENGTH	3,156 psi (225 kg/cm ²)	ASTM D-640
IZOD IMPACT STRENGTH	3.4 in.lbs./in. (0.15 Newton m/cm)	ASTM D-258
FIRE RESISTANCE	Self-extinguishing	ASTM D-637
SPECIFIC GRAVITY	2.0	

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www.chockfastgrout.com



Product Information

COVERAGE	800 in. (³ 13.1 Liters)
APPLICATION TEMPERATURE	55°F (13°C) to 95°F (35°C)
UNIT PACKAGING	Resin (NH): 5 gal (18.9 L) in a 5 gal pail Hardener (NH): 0.34 gal (1.3 L) in ½ gal can Aggregate is premixed in the resin
UNIT WEIGHT	Resin: 55.5 lbs (25 kg) Hardener: 2.9 lbs (1.3 kg)
SHIPPING WEIGHT	62 lbs (28 kg)
CURE TIME (approximate)	36 hrs. @ 60°F (16°C) 24 hrs. @ 72°F (21°C) 16 hrs. @ 80°F (27°C) 11 hrs. @ 90°F (32°C)
POT LIFE	35-50 minutes @ 70°F (21°C)
CLEAN UP	IMPAX IXT-59 or other epoxy solvent
SHELF LIFE	Excess of 2 years in dry storage

Reference

For design considerations and application details please request Bulletin # 640 and #642 or contact ITW Polymer Technologies' Engineering Services Department.

Date

06/2006

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The Premier Industrial Chocking Compound

Technical Bulletin # 1032

Product Description

CHOCKFAST ORANGE is a specially formulated 100% solids, two component inert filled casting compound developed for use as a chocking or grouting material. CHOCKFAST is designed to withstand severe marine and industrial environments involving a high degree of both physical and thermal shock. The compound is non-shrinking and has very high impact and compressive strength.

Years of successful in-service experience have shown the use of CHOCKFAST ORANGE to be a far superior yet less expensive method of establishing and permanently retaining precise equipment alignment under extreme conditions.

Use & Benefits

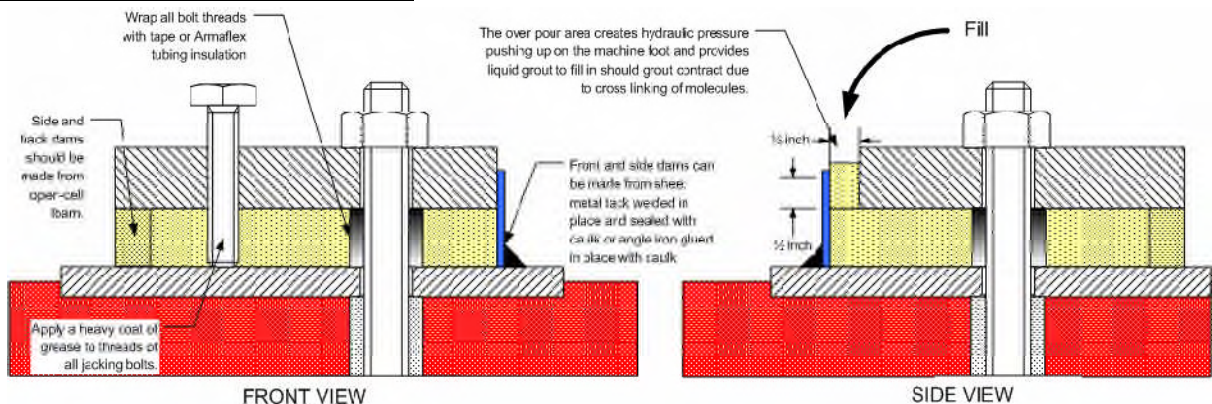
CHOCKFAST ORANGE was developed as a chocking or grouting compound for use under industrial engines and other types of machinery in depths of ½" to 4" (12mm to 100mm). The compound is used under diesel and gas engines, reduction gears, generators, compressors, pumps, bearing blocks, crane rails and numerous other applications.

CHOCKFAST ORANGE requires no special tools or special skills as does chocking with steel. When cast, CHOCKFAST ORANGE flows readily into the chock area filling voids and conforming to all irregularities. This eliminates the machining of base plates or foundations for a perfectly fitted chock.

Design Considerations

For design considerations and application details please request 642 for Industrial applications or contact ITW Polymer Technologies' Engineering Services Department.

Application Instructions



Using open-cell foam damming material, build a dam around 3 sides of the area to be chocked. Wrap the anchor bolt with tape so the Chockfast will not stick to it, Install a metal dam along the front of the chock approximately ½" to ¾" (12mm to 18mm) from the mounting flange. Seal the flange with strip caulking, or Silicone to prevent leaks. Install foam in the overpour area to the top of the mounting flange to prevent the Chockfast from leaking.

Mix the Chockfast as directed on the can. See technical Bulletin #665 to determine the proper amount of hardener to use. Slowly pour the Chockfast into one end of the overpour area and allow it to flow across and under the mounting flange.

Physical Properties

COMPRESSIVE STRENGTH	19,000 psi (1,336 kg/cm ²)	ASTM D-695MOD
COMPRESSIVE MODULUS OF ELASTICITY	533,000 psi (37,482 kg/cm ²)	ASTM D-695
LINEAR SHRINKAGE	0.0002 in/in (0.0002 mm/mm) or 0.02%	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	17.1 x 10 ⁻⁶ /F° @ 32°F to 140°F (30.8 x 10 ⁻⁶ /C° @ 0°C to 60°C)	ASTM D-696
FLEXURAL STRENGTH	7,615 psi (575 kg/cm ²)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY	8.6 x 10 ⁵ psi (72,880 kg/cm ²)	ASTM C-580
TENSILE STRENGTH	4,970 psi (349 kg/cm ²)	ASTM D-638
SHEAR STRENGTH	5,400 psi (380 kg/cm ²)	FED-STD-406 (Method 1041)
IZOD IMPACT STRENGTH	6 in.lbs/in. (0.27 N.m/cm)	ASTM D-256
SHOCK RESISTANCE	Pass MIL-S-901C (Navy) High Impact Shock Test, Grade A, Type A, Class 1	
THERMAL SHOCK	Pass -0°F to 212°F (18°C to 100°C)	ASTM D-746
VIBRATION	Meets MIL-STD-167	
FIRE RESISTANCE	Self extinguishing	ASTM D-635
SPECIFIC GRAVITY	1.58	
BARCOL HARDNESS	40+ fully cured - 35 minimum	ASTM D-2583

Product Information

UNIT COVERAGE	Small Unit: 120 cu.in (1,966 cc) Large Unit: 260 cu.in (4,261 cc)
APPLICATION TEMPERATURE	55°F (13°C) to 95°F (35°C)
PACKAGING per Unit	<u>Small Unit:</u> Resin (NH) - 7.2 lbs. (3.3 kg), 0.53 gal (2 L) in a 1 gal can, Hardener (H) -0.5 lbs. (0.23 kg), 7.7 oz (0.23 L) in an 8 oz plastic bottle <u>Large Unit:</u> Resin (NH) - 14.4 lbs. (6.5 kg), 0.53 gal (2 L) in a 1 gal can, Hardener (H) -0.99 lbs. (0.45 kg), 15.4 oz (0.23 L) in an 16 oz plastic bottle
UNIT SHIPPING WEIGHT	Small Unit: 9 lbs (4 kg) Large Unit: 17 lbs. (7.7 kg)
CURE TIME (approximate)	48 hours @ 60°F (15°C) 24 hours @ 70°F (21°C) 36 hours @ 65°F (18°C) 18 hours @ 80°F (26°C)
POT LIFE	30 min. @ 70°F (21°C)
SHELF LIFE	2 years
CLEAN UP	IMPAX IXT-59 or similar epoxy solvent

Reference

For design considerations and application details please request Bulletin No. 642 or contact ITW Polymer Technologies' Engineering Services Department.

Date 02/2007

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Technical Bulletin # 666H

Product Description

CHOCKFAST® Black is a specifically formulated 100% solids, inert filled casting compound developed for use as a chocking material. It is a cost-effective method of maintaining permanent precise alignment of critical equipment. It will withstand severe environments involving high physical and thermal shock.

Use & Benefits

This unique product is used under gas and diesel engines, compressors, generators, turbines, motors, pumps and various other types of equipment. CHOCKFAST® Black is ideal for use under these hot running reciprocating and rotating machines because of its excellent resistance to creep and fatigue at high operating temperatures. It is non-shrinking and has a very high impact and compressive strength. Resin chocks made with CHOCKFAST® Black reduce possible bearing or crankshaft damage because they (1) minimize heat build-up on foundations, (2) assure precise and unsurpassed contact with bedplates, and (3) provide a high coefficient of friction to help hold engines down tight. The excellent flow-ability of CHOCKFAST® Black allows it to fill voids in the chock area and conform to all surface irregularities

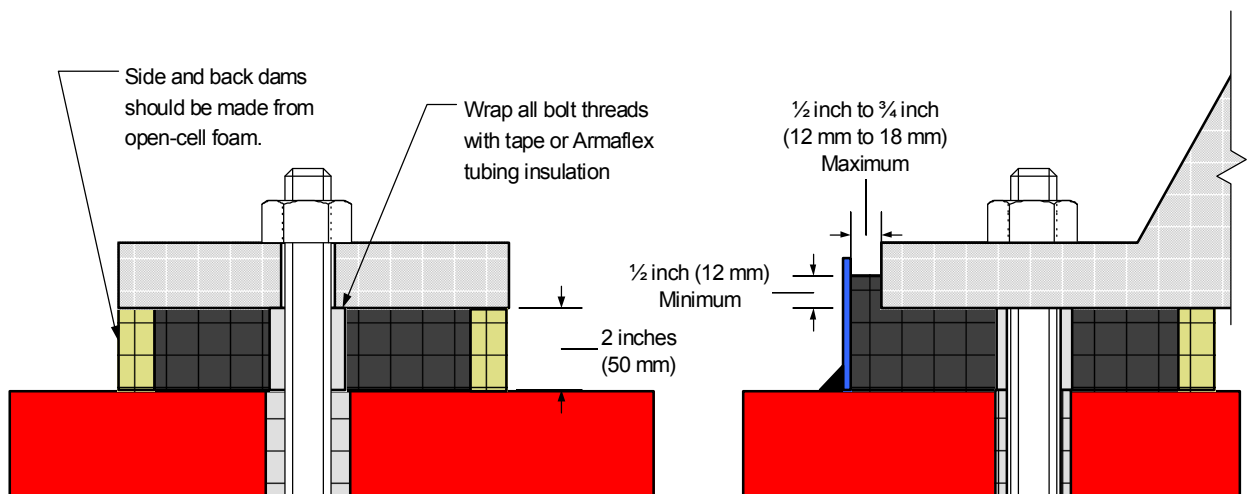
Design Considerations

CHOCKFAST® Black was designed to be a thick pour liquid chocking material. A chock depth of 2" (50mm) is standard; however, thinner or thicker pours can be made satisfactorily. The 2" (50mm) chock elevates equipment above the underlying foundation, which allows a free flow of air thereby reducing possible foundation humping problems.

Contact ITW Polymer Technologies for information regarding pours less than 1-1/4" (32mm) in thickness or greater than 2-1/2" (62mm) in thickness.

Installation Instructions

Construct a chock mold around one or more anchor bolts using open cell foam damming material on three sides. Wrap the shank of the anchor bolt with tape, cover with foam pipe insulation or coat with non-melt grease to prevent the CHOCKFAST from sticking to it and to seal the bolt hole. Place a metal dam 1/2" to 3/4" (12mm to 18mm) from the mounting pad and seal with caulk. Spray the inside of the mold and front metal dam with Release Agent. Mix and pour the epoxy as directed.



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Physical Properties

COMPRESSIVE STRENGTH	17,300 psi (1216 kg/cm ²)	ASTM C-695 (Modified)
COMPRESSIVE MODULUS OF ELASTICITY	800,000 psi (5.6x10 ⁴ kg/cm ²)	ASTM C-695 (Modified)
LINEAR SHRINKAGE	0.00018 in/in (0.00018 mm/mm)	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	32°F to 140°F @ 15.0 X 10 ⁻⁶ /F° (27.0 x 10 ⁻⁶ /C° @ 0°C to 60°C)	ASTM D-696
FLEXURAL STRENGTH	6,200 psi (435 kg/cm ²)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY	1.4 x 10 ⁶ psi (101,300 kg/cm ²)	ASTM C-580
TENSILE STRENGTH	2,900 psi (204 kg/cm ²)	ASTM D-638
SHEAR STRENGTH	5,000 psi (350 kg/cm ²)	FED-STD-406 (Method 1041)
IZOD IMPACT STRENGTH	5.1 in.lbs./in (0.23 N.m/cm)	ASTM D-256
FIRE RESISTANCE	Self Extinguishing	ASTM D-635
SPECIFIC GRAVITY	1.94	
BARCOL HARDNESS	55 Full Cure	ASTM D-2583
MAXIMUM OPERATING TEMPERATURE	200°F (94°C)	

Product Information

UNIT COVERAGE	265 in ³ (4,343 cm ³)
APPLICATION TEMPERATURE	55°F (13°C) to 95°F (35°C)
UNIT PACKAGING	Resin (NH) – 18.2 lbs. (8.3 kg), 1.2 gal (4.5 L) in a 2gal pail Hardener (H) – 0.74 lbs. (0.34 kg), 11.5 oz (0.34 L) in an 16 oz plastic bottle
SHIPPING WEIGHT	21 lbs. (9.5 kg)
CURE TIME (approximate)	48 hours @ 60°F (15°C) 36 hours @ 65°F (18°C) 24 hours @ 70°F (21°C) 18 hours @ 80°F (26°C)
POT LIFE	45 min. @ 70°F (21°C)
SHELF LIFE	Exceed 18 months
CLEAN UP	IMPAX IXT-59 or similar epoxy cleaner

Reference

For design considerations and application details please request Bulletin No. 642 or contact ITW Polymer Technologies' Engineering Services Department.

Date 08/2008

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Chocking & Anchor Bolt Setting Compound

Technical Bulletin # 656G

Product Description

CHOCKFAST Gray (PR-610FR) is a specially formulated 100% solids, two component, inert filled compound developed for use in chocking non-precisely aligned equipment or in setting anchor bolts in concrete. The compound is designed to withstand severe marine and industrial environments involving a high degree of both physical and thermal shock. The compound is non-shrinking, non-burning and has a very high impact and compressive strength. Years of successful experience have shown the use of CHOCKFAST Gray to be a far superior yet less expensive method of establishing and retaining equipment alignment under extreme conditions. When poured as a continuous chock under deck equipment, CHOCKFAST Gray provides a corrosion proof moisture seal. CHOCKFAST Gray is approved or accepted for marine use by A.B.S., Lloyd's Register and other regulatory agencies.

Use & Benefits

CHOCKFAST GRAY was developed as a chocking compound for use under marine deck machinery, pumps, generators and steering gears. Industrially, the compound is used under diesel engines, generators, compressors, pumps, turbines, bearing blocks, crane rails and numerous other applications. It is also used extensively in the setting of anchor bolts into concrete.

When used as a chocking compound for machinery, the CHOCKFAST Gray provides perfectly even support without the tedious hand packing associated with conventional cement grouts. Because the compound flows readily, much thinner cross sections can be used. The compound is also completely chemical and oil resistant, will not powder or crack with age, weathering, or freeze-thaw cycling, and will seal the mounting surfaces protecting them from deterioration. Steel soleplates and rails between the machinery and the concrete foundations are not necessary with CHOCKFAST Gray.

Other successful applications of CHOCKFAST GRAY include mounting of crane rails, chocking of crane bull gears, chocking of machine shop machinery, sealing of cable penetrations, and as a filler to dampen machinery vibrations.

Design Considerations

CHOCKFAST Gray may be used where equipment alignment does NOT have to be maintained precisely AND the equipment's normal operating temperature is below 125°F (52°C). Examples of this class of machinery include winches, pumps, skid mounted diesel generators and other self-contained equipment. CHOCKFAST Gray works best when poured at a depth of between ½" to 2" (12 mm to 50 mm). Please consult your CHOCKFAST distributor or ITW Polymer Technologies if you need to pour CHOCKFAST Gray outside of these limits.

Application Instructions

CHOCKFAST Gray requires no special tools or special skills as does chocking with steel. When cast, CHOCKFAST GRAY flows readily into chock area filling all voids and conforming to all irregularities. This eliminates the machining of base plates or foundations for a perfectly fitted chock.

To facilitate mixing and pouring, store CHOCKFAST Gray at 68° to 77°F (20° to 25°C) for 12 to 24 hours prior to mixing. Pour the entire contents of the hardener container into the resin container and power mix using a Jiffy Mixing blade at 250 to 450 RPM for 3 to 5 minutes traversing the side and bottom to ensure complete mixing. Scrape the side and bottom of the container with the mixing blade. Do not allow air to be drawn into the mixture.

Precondition the surrounding metal and/or concrete surfaces to at least 55°F (13°C). Pour the mixed CHOCKFAST Gray into the overpour area of one end of a prepared mold. Allow the epoxy to flow under the mounting foot, pushing the air out ahead of it. Fill the overpour to at least 1/2" (12mm) above the mounting foot at the highest point in the chock. Do not scrape epoxy from the sides or bottom of the container when pouring.

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File No. 33790ITW Performance Polymers Europe
EC 901.260
Q 06120

Physical Properties

COMPRESSIVE STRENGTH	16,000 psi (1,125 kg/cm ²)	ASTM C-695
COMPRESSIVE MODULUS OF ELASTICITY	520,000 psi (36,568 kg/cm ²)	ASTM C-695
LINEAR SHRINKAGE	0.0003 in/in (0.0003 mm/mm)	ASTM D-2566
COEFFICIENT OF LINEAR THERMAL EXPANSION	16.8 x 10 ⁻⁶ /F° @ 32°F to 140°F (30.3 x 10 ⁻⁶ /C° @ 0°C to 60°C)	ASTM D-696
FLEXURAL STRENGTH		ASTM C-582
FLEXURAL MODULUS OF ELASTICITY		ASTM C-582
TENSILE STRENGTH	4,000 psi (281 kg/cm ²)	ASTM D-638
IZOD IMPACT STRENGTH	7.2 in.lbs./in. (0.32 N-m/cm)	ASTM D-256
FIRE RESISTANCE	Self-extinguishing	ASTM D-635
SERVICE TEMPERATURE	Up to 52°C (125°F)	
VIBRATION RESISTANCE	Pass 33 cps @ 0.02 in. (0.51mm) amplitude Total cycles 237,600	
THERMAL SHOCK RESISTANCE	Pass 20°F to 200°F (- 6.5°C to + 93°C)	
CORROSION RESISTANCE	Pass FTM 151A @ 96 hrs. 0.5% NaCl 96°F (35°C) Fog	
SPECIFIC GRAVITY	1.82	
HARDNESS	35-40	ASTM D-2583

Product Information

UNIT COVERAGE:	Small Unit - 187 cu.in. (3.06 liters) Large Unit - 816 cu.in. (13.37 liters)
APPLICATION TEMPERATURE	55°F (13°C) to 95°F (35°C)
UNIT WEIGHT:	<u>Small Unit:</u> Resin (NH) – 12.5 lbs. (5.6 kg), 0.76 gal (2.9 L) in a 1 gal can, Hardener (H) – 0.6 lbs., (0.3 kg), 0.3 L (9 oz) in an 8 oz plastic bottle <u>Large Unit:</u> Resin (NH) – 53.5 lbs. (24.3 kg), 3.2 gal (12 L) in a 5 gal bucket, Hardener (H) – 2.6 lbs. (1.2 kg), 40 oz (1.2 L) in a ½ gal can
UNIT SHIPPING WEIGHT	Small Unit: 5.9 kg (13 lbs), Large Unit: 56 lbs. (25.5 kg)
CURE TIME (approximate):	18 hrs. @ 85°F (30°C) 24 hrs. @ 65°F (18°C)
POT LIFE:	30-40 mins. @ 70°F (21°C)
SHELF LIFE:	18 MONTHS
CLEAN UP:	IMPAX IXT-59 Solvent or equal

Reference

For design considerations and application details please request Bulletin No. 692 or contact ITW Polymer Technologies' Engineering Services Department.

Date

06/2006

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Technical Bulletin # 1033A

Bulletin Description

ITW QUICKSET is a two-component high strength, fast-setting, multi-purpose epoxy with a convenient mixing ratio of 1:1 by volume.

Use & Benefits

ITW QUICKSET can be used as a liquid shim, an anchoring adhesive or as a structural gap filler. It is recommended for applications requiring rapid turnaround of equipment but not for equipment requiring precise alignment (i.e. less than 0.005" or 0.127 mm movement over the life of the equipment).

ITW QUICKSET can be quickly mixed and applied under concrete blocks, between steel plates or between concrete and steel. ITW QUICKSET was designed to fill a void within 15 minutes then harden to 78 shore D in 30 minutes and 84 Shore D in 4 hours at a concrete / steel temperature of 70° F (21° C). ITW QUICKSET will reach a minimum compressive strength of 14,500 psi (101.5 MPa) in about 6 hours at 70° F (21° C).

Design Considerations

Because ITW QUICKSET was designed to be installed within 15 minutes after mixing, the void area it fills must be of a size that can be completely filled within that time based on the application method chosen. ITW QUICKSET is a hot curing epoxy so the temperature of the epoxy, the temperature of the concrete or steel and the ambient temperature must be taken into consideration when installing it. A maximum thickness of 18mm (3/4 inch) recommended at 21° C (70° F) but ITW QUICKSET can be applied at ambient temperatures between 40° F and 85° F (5° C and 29° C). For applications outside either of these ranges contact the Engineering Services Department at ITW Polymer Technologies.

Application Instructions

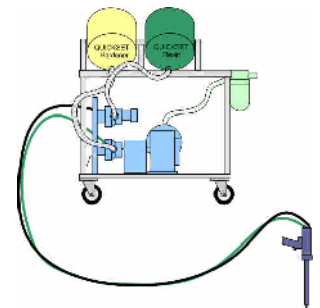
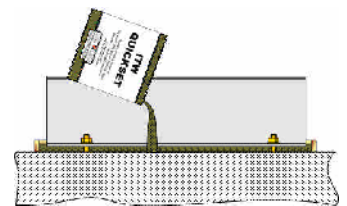
ITW QUICKSET comes in 300 ml x 300 ml dual cartridge tubes, gallon cans, 5 gallon buckets or 55 gallon drums. It can be mixed and applied by either mixing it with a Jiffy Mixing blade for 3 minutes then pouring it in place or by using a manual or automated mixing and dispensing system.

The convenient 300ml x 300ml (21 fl.oz) side-by-side, dual component cartridges comes with a static mixing nozzle and requires an application gun to dispense it. Hand or air operated application guns are not available through ITW Polymer Technologies but can be obtained at large hardware and construction equipment suppliers.

An automated mixing and dispensing system is recommended when it is necessary to apply a large volume of the epoxy in a short period of time. An automated dispensing system consists of metering pumps, hoses and a manually operated dispensing gun with a static mixing nozzle.

Depending on the temperature of the concrete or steel, the thickness of the gap to be filled and the importance of a fast cure rate, ITW QUICKSET epoxy resin and hardener may need to be individually pre-mixed prior to dispensing. It should also be preconditioned for 24 hours while still in the drum to 65°F to 75°F (18°C to 24°C) prior to dispensing.

Please consult ITW Polymer Technologies for additional information.



ITW POLYMER TECHNOLOGIES

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Physical Properties

COMPRESSIVE STRENGTH:	14,500 psi (101.49 MPa)	ASTM D-695
COMPRESSIVE MODULUS OF ELASTICITY:	347,000 psi (2392.5 MPa)	ASTM D-695
LINEAR SHRINKAGE:	< 0.5%	ASTM D-2566
FLEXURAL STRENGTH:	15,400 psi (106.18 MPa)	ASTM C-580
FLEXURAL MODULUS OF ELASTICITY:	191,000 psi (1316.9 MPa)	ASTM D-580
TENSILE STRENGTH:	8,800 psi (60.67 MPa)	ASTM D-638
TENSILE MODULUS:	191,000 psi (1316.9 MPa)	ASTM D-638
TENSILE LAP SHEAR STRENGTH:	908 psi (6.26 MPa) after 30 min. >1,300 psi (9 MPa) after 7 days	ASTM D-1002
% ELONGATION AT BREAK:	5.9%	ASTM D-638
SPECIFIC GRAVITY OF RESIN:	1.17	
VISCOSITY OF RESIN:	48,800 cps @ 10 RPM using Viscosity Brookfield Viscometer Spindle #3	
SPECIFIC GRAVITY OF HARDENER:	1.66	
VISCOSITY OF HARDENER:	8,800 cps @ 20 RPM using Viscosity Brookfield Viscometer Spindle #3	
MIXED VISCOSITY:	27,000 cps @ 20 RPM using Viscosity Brookfield Viscometer Spindle #3	
GEL TIME @ 75° F (24°C):	15 min 100 gram mass	
SHORE D HARDNESS:	70 @ 30 Minutes @ 70oF 78 @ 1 Hour 82 @ 4 Hours 84 @ 1 Day	
FIRE RESISTANCE:	Self Extinguishing	ASTM D 635

Product Information

UNIT COVERAGE:	Dual Tube Cartridge: 37 in. ³ (600ml) 2 gal Unit: 435 in. ³ (7.1 L) 10 gal Unit: 2,282 in. ³ (37.4 L) 110 gal unit: 21,131 in. ³ (346.3 L)
APPLICATION TEMPERATURE:	41°F (5°C) to 95°F (35°C)
PACKAGING per Unit:	Dual Tube Cartridge: Resin - 0.8lbs (0.36 kg), Hardener – 1.1 lbs (0.5 kg) 2 gal Unit: Resin – 9.3 lbs. (4.2 kg), Hardener – 12.86 lbs. (5.8 kg) in two (2) 1 gal cans 10 gal Unit: Resin – 48.5 lbs. (22 kg), Hardener – 68 lbs. (30.8 kg)) in two (2) 5 gal cans 110 gal unit: Resin – 441 lbs. (200 kg), Hardener – 641 lbs. (291 kg) in two (2) 55 gal drums
CURE TIME (approximate):	6 hours @ 21° C (70° F)
POT LIFE:	15 min. @ 21° C (70° F)
SHELF LIFE:	2 years
CLEAN UP:	IXT-59 or similar epoxy solvent

Date 01/2009

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Warranty: ITW Polymer Technologies, a division of Illinois Tool Works Inc., warrants that its products meet their printed specifications. This is the sole warranty. This warranty expires one year after product shipment.

Warranty Claims: If any product fails to meet the above, ITW Philadelphia Resins will, at its option, either replace the product or refund the purchase price. ITW Polymer Technologies will have no other liability for breach of warranty, negligence, or otherwise. All warranty claims must be made in writing within one year of the date of shipment. No other claims will be considered.

Disclaimer: ITW Polymer Technologies makes no other warranty, expressed or implied, and specifically disclaims any warranty of merchantability or fitness for a particular purpose.

Suggestions concerning the use of products are not warranties. The purchaser assumes the responsibility for determining suitability of products and appropriate use. ITW Polymer Technologies' sole liability, for breach of warranty, negligence or otherwise, shall be the replacement of product or refund of the purchase price, at ITW Polymer Technologies' election. Under no circumstances shall ITW Polymer Technologies be liable for any indirect, incidental or consequential damages.

Modification of Warranty: No distributor or sales representative has the authority to change the above provisions. No change in the above provisions will be valid unless in writing and signed by an officer or the Technical Director of ITW Polymer Technologies. No term of any purchase order shall serve to modify any provision of this document.
Mediation and Arbitration: If any dispute arises relating to products or product warranties, either the purchaser or ITW Polymer Technologies may a) initiate mediation under the then current Center for Public Resources (CPR) Model Procedure for Mediation of Business Disputes, or b) initiate a non-binding arbitration under the rules of the American Arbitration Association for the resolution of commercial disputes.

Product Description

ITWPRC 100 NON-SHRINK CEMENT GROUT is a high performance, non-shrink, precision grout that meets or exceeds all requirements of the Corps of Engineers CRD C-621 and ASTM C-1107. It is designed for a wide range of consistencies from damp pack to high fluidity, meeting the most demanding job conditions.

Use & Benefits

ITWPRC 100 NON-SHRINK CEMENT GROUT is recommended for grouting of anchor bolts, baseplates, structural steel and pre-cast columns, dowels, etc. which require non-shrink, high tolerance, high strength performance. It is flowable for easy placement, adheres well to concrete or steel, and exhibits good impact and vibration characteristics.

Design Considerations

Pre-washed graded 3/8" pea gravel may be used in applications thicker than 2". In depths from 2" to 5", add 25% of the 3/8" pea gravel by weight. For depths 5" and deeper, add 50% 3/8" pea gravel by wt. When grouting in hot weather, provide shade around the area to be grouted. Use cool mixing water and protect the grout from the sun for up to 48 hours.

When grouting in cold weather, raise the temperature of the area to be grouted. Preheat the mixing water and cover the grout to retain warmth. **DO NOT** place at temperatures below 40°F or if the temperature is expected to fall below 40°F within the next 24 hour period.

ITWPRC 100 NON-SHRINK CEMENT GROUT should be kept in a shaded, dry area. At no time should the packaged material be exposed to moisture.

Application Instructions

Remove all dirt, oil or loose foreign material from any steel surface to come in contact with CHOCKCRETE. Concrete surfaces must be sound and roughened to insure proper bonding. Concrete surfaces should be saturated for a minimum of 4 hours but preferably for 24 hours prior to placing the grout. Remove all excess water from the foundation prior to placing ITWPRC 100 NON-SHRINK CEMENT GROUT.

Build the forms at least 1" higher than the bottom of the item being grouted.

A portable mortar mixer should be used when mixing the grout. Start with the minimum water requirements. **ADD WATER TO MIXER FIRST**, then slowly add powder. Add additional water as required for desired consistency. Water requirements per 50 lb. bag are:

<u>Plastic</u>	<u>Flowable</u>	<u>Fluid</u>
6.80 to 7.00 pints water	7 to 8 pints water	8.00 to 9.25 pints water
0.85 to 0.88 gal.	0.88 to 0.94 gal	1.00 to 1.19 gal.
7.05 to 7.30 lbs.	7.30 to 7.80 lbs.	8.33 to 9.50 lbs.
3.18 to 3.29 liters	3.29 to 3.79 liters	3.79 to 4.40 liters

CAUTION: DO NOT OVER WATER. Adding more water than recommended can cause bleeding, separation and a reduction of ultimate strength. **DO NOT** re-temper or add additional cement, sand or admixtures without first contacting ITW Polymer Technologies.

The grout should be placed continuously by pouring from one side to the other to avoid air entrapment. Cover with clean wet rags and keep moist until final set.

Physical Properties

	(psi)	Plastic Flowable Fluid			
COMPRESSIVE STRENGTH:	3 days	5,900	5,400	4,800	ASTM C-109
	7 days	8,900	7,700	6,200	
	28 days	11,500	8,400	7,700	
STATIC MODULUS OF ELASTICITY:	3 days	2.64 x 10 ⁶ psi			ASTM C-469
	7 days	2.79 x 10 ⁶ psi			
	28 days	3.00 x 10 ⁶ psi			
		Plastic Flowable Fluid			
EXPANSION PERCENTAGE:	3 days	0.07%	0.03%	0.02%	CRD D-621
	14 days	0.07%	0.03%	0.02%	
	28 days	0.07%	0.03%	0.02%	
COEFFICIENT OF THERMAL EXPANSION:		4.76 x 10 ⁻⁶ in/in °F			ASTM C-531
FLEXURAL STRENGTH:	3 days	1,055 psi			ASTM C-78
	7 days	1,230 psi			
	28 days	1,430 psi			
SPLITTING TENSILE STRENGTH:	3 days	550 psi			ASTM D-496
	7 days	680 psi			
	28 days	750 psi			
STRENGTH OF ANCHORS:		<u>Tensile Strength</u>	<u>Shear Strength</u>		
1-1/4" dia. bolt in a 2-1/2" dia. hole with 9" embedment		53,200 lbs.	24,300 lbs.		ASTM E-488
1/2" dia. bolt in a 1-1/8" dia. hole with 4" embedment		7,100 lbs.	2,000 lbs.		

Product Information

UNIT PACKAGING:	Individual Bags - Super Sack		
UNIT WEIGHT:	22.7 kg (50 lbs.) Bags; 1,361 kg (3,000 lb) Super Sack		
UNIT YIELD:	Plastic Flowable Fluid		
	Approx.	0.43 ft. ³	0.44 ft. ³ 0.45 ft. ³
APPLICATION TEMPERATURE:	45°F Minimum - 90°F Maximum		
		Plastic Flowable Fluid	
SET TIME (approximate):	Initial:	3.5 hrs	4 hrs 3.6 hrs
	Final:	4.75 hrs	4.8 hrs 4.75 hrs
SHELF LIFE:	1 year in dry, shaded storage		
CLEAN UP:	Water		

Date

06/2006

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