

ULTRAFLOW® 4000/8

Non-Shrink Precision Grout



PRODUCT DATASHEET

DESCRIPTION: Rapid Set® ULTRAFLOW® 4000/8 is a high-performance, non-shrink precision grout with long flow life and rapid strength gain. ULTRAFLOW is a high quality blend of Rapid Set cement, additives, and specially graded sand that can be mixed to any consistency from damp pack to fluid with an extended working time to allow for large placements, but gains strength quickly and reaches 4000 psi in 8 hours. ULTRAFLOW is non-metallic and no chlorides are added. ULTRAFLOW is ideal for grouting under base plates and large machinery installations where rapid strength gain and high durability are desired.

USES: ULTRAFLOW is used for structural and non-structural applications, including precision grouting under base plates, precast components, machinery and equipment bases, keyway joints, load bearing pads, columns, anchor bolts, dowel rods and other indoor/outdoor non-shrink applications.

SURFACE PREPARATION: Concrete substrate must be clean, sound, have a rough texture with exposed aggregate, free from oil, dirt, asphalt, sealing compounds, acids, wax, and loose debris. Bolt holes must be cleaned out and grouted in advance to prevent sagging. Remove rust and scale from metal surfaces. Equipment must be secured in place to prevent movement during the grouting procedure. Substrate must be SSD (Saturated, Surface Dry). Saturate the substrate with clean water for a minimum of 4 hours and preferably 24 hours before grout placement. Remove any standing water or puddles before placement of the material. Protect baseplate and concrete base from temperature extremes, such as direct sunlight for 24 hours prior to and following grouting.

FORMS: Forms must be watertight and non-absorbent. Use polyurethane foam, putty, or caulk to seal the joints. Forms must be coated or lined with bond breaker or form release. Provide adequate vent holes to avoid air entrapment. Provide a head placement of 45 degree angle to facilitate placement for grout pour. Build forms 1" higher than bottom of plate and leave 2" to 3" between side of plate and form.

MIXING: Mix with a mechanical mortar mixer or an electric drill with a paddle device if possible. **ULTRAFLOW may be mixed with up to 5.5 quarts (5.2 L) of water per 55-lb (25 kg) bag for fluid consistency. Use less water to achieve flowable or plastic consistency.** Add potable water to the mechanical mixer or bucket first, then add dry grout material while mixing. Adjust water temperature to maintain mixed grout temperature between 45°F and 90°F (7°C and 32°C). Mix thoroughly for a minimum of 3 to 5 minutes. Adding too much water may induce bleeding and segregation. Gauge fluid consistency within 25 to 35 seconds with ASTM C939 Flow Cone Method. ULTRAFLOW is fluid for 30 minutes and remains workable for 1 hour. Consistency of the grout is dependent on jobsite variables such as ambient temperature, water temperature, product temperature and mixing method. For deep pours over 2", 3/8" pea gravel may be added but only after consulting with the CTS Cement Technical Service Department. Do not add any additional dry materials such as cement, sand, additives or admixtures.

PLACEMENT: The concrete, plate, and ambient temperatures must be from 45°F to 90°F

OVERVIEW

Highlights:

Non-Shrink: Durable bearing support and load transfer

Rapid Return to Service: Exceeds 4000 psi (27.6 MPa) in 8 hours

Long Flow Life & Extended Working Time: Fluid for 30 minutes

Effective Bearing Area: 98% area provides maximum support and load transfer

Versatile: Mix to any consistency - fluid, flowable, plastic or damp pack

Freeze Thaw Resistant: Durable in the harshest climates

Conforms to:

ASTM C1107

Army Corps of Engineers CRD C621

MasterFormat® 2016

03 01 60 Maintenance of Grouting

03 60 00 Grouting

03 61 00 Cementitious Grouting

03 62 13 Non-Metallic Non-Shrink Grouting

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and remain in that range until the grout has reached final set. Place grout continuously onto the 45 degree headbox from one side of the plate to minimize air entrapment. ULTRAFLOW must fill the entire space being grouted and remain in contact with the plate. Use multiple mixers if required to ensure continuous placement. It is important for the grout to extend at least 1/2" up the edges of the plate to provide a small head pressure that will keep the grout in contact with the plate bottom. Do not vibrate the grout. The grout shoulder may be cut back as soon as the strength is sufficient to maintain its formed shape. Immediately after cut back and finishing, cover with clean wet rags until final set. Have all required tools, equipment and materials as close to the grouting area as possible.

CURING: Apply a curing compound in accordance with ASTM C309 immediately or wet cure with clean potable water on open surfaces after initial set for 6-8 hours. Once forms are removed, use preferred curing method on exposed grout surfaces. Grouted equipment may be put into service as soon as desired grout strengths are achieved.

YIELD & PACKAGING: ULTRAFLOW is available in 55-lb (25 kg) bags. One 55-lb bag of ULTRAFLOW will yield approximately 0.5 ft³ (0.01 m³).

SHELF LIFE: ULTRAFLOW has a shelf life of 12 months when stored properly in a dry location, protected from moisture, out of direct sunlight, and in an undamaged package.

USER RESPONSIBILITY: Before using CTS products, read current technical data sheets, bulletins, product labels and safety data sheets at www.CTScement.com. It is the user's responsibility to review instructions and warnings for any CTS products prior to use.

WARNING: DO NOT BREATHE DUST. AVOID CONTACT WITH SKIN AND EYES. Use material in well-ventilated areas only. Exposure to cement dust may irritate eyes, nose, throat, and the upper respiratory system/lungs. Silica exposure by inhalation may result in the development of lung injuries and pulmonary diseases, including silicosis and lung cancer. Seek medical treatment if you experience difficulty breathing while using this product. The use of a NIOSH/MSHA-approved respirator (P-, N- or R-95) is recommended to minimize inhalation of cement dust. Eat and drink only in dust-free areas to avoid ingesting cement dust. Skin contact with dry material or wet mixtures may result in bodily injury ranging from moderate irritation and thickening/cracking of skin to severe skin damage from chemical burns. If irritation or burning occurs, seek medical treatment. Protect eyes with goggles or safety glasses with side shields. Cover skin with protective clothing. Use chemical resistant gloves and waterproof boots. In case of skin contact with cement dust, immediately wash off dust with soap and water to avoid skin damage. In case of skin contact with wet cement, wash exposed skin areas with cold running water as soon as possible. In case of eye contact with cement dust, flush immediately and repeatedly with clean water, and consult a physician. If wet cement splashes into eyes, rinse eyes with clean water for at least 15 minutes and go to the hospital for further treatment.

Please refer to the SDS and www.CTScement.com for additional safety information regarding this material.

LIMITED WARRANTY: CTS CEMENT MANUFACTURING CORP. (CTS) warrants its materials to be of good quality and, at its option, will replace or refund the purchase price of any material proven to be defective within one (1) year from date of purchase. The above remedies shall be the limit of CTS' responsibility. Except for the foregoing, all warranties expressed or implied, including merchantability and fitness for a particular purpose, are excluded. CTS shall not be liable for any consequential, incidental, or special damages arising directly or indirectly from the use of the materials.

⚠ WARNING

CANCER and REPRODUCTIVE HARM - www.P65Warnings.ca.gov

TYPICAL PHYSICAL DATA

Set Time, ASTM C191 Mod.

Initial set	95 minutes
Final set	150 minutes

Compressive Strength, ASTM C109 Mod.

8 hours	4000 psi (27.6 MPa)
1 day	6500 psi (44.8 MPa)
3 days	7500 psi (51.7 MPa)
7 days	8000 psi (55.2 MPa)
28 days	8500 psi (58.6 MPa)

Slant Shear Bond, ASTM C882 per C928

28 days	2000 psi (13.8 MPa)
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Freeze-Thaw Resistance, ASTM C666

300 Cycles	99%
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All data produced at 70°F (21°C)



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