

# FLOWABLE FILL

High Performance Backfill



## PRODUCT DATASHEET

**DESCRIPTION:** Rapid Set® FLOWABLE FILL is an easy-to-produce, high performance subbase for fill applications requiring fast turnaround. Flowable Fill is a mixture of Rapid Set hydraulic cement, aggregate, and water designed for soil replacement or reinforcement. Flowable Fill is a self-compacting material suitable in applications requiring Controlled Low Strength Material (CLSM) or Controlled Density Fill (CDF). FLOWABLE FILL sets in 45 minutes allowing early load application.

**USES:** Use FLOWABLE FILL for filling utility cuts, pipe bedding, runway and pavement subbase, and backfilling foundations. FLOWABLE FILL is ideal for airport, highway, industrial, and other civil applications.

**ENVIRONMENTAL ADVANTAGES:** Use FLOWABLE FILL to reduce your carbon footprint and lower your environmental impact. Production of Rapid Set® Cement emits far less CO<sub>2</sub> than portland cement. Contact your local representative for LEED values and environmental information.

**APPLICATION:** Pour in place typically delivered to the jobsite in a concrete mixing truck or batched onsite by a volumetric mixer.

**PREPARATION:** Organize work so that all personnel and equipment are in place before mixing.

**COMPOSITION:** Rapid Set® FLOWABLE FILL mix designs normally contain 80 to 100 lbs of cement per cubic yard (48 kg to 60 kg per cubic meter). More cement may be added to increase strength.

A sand mix is best suited for use in trenches where high flow and future diggability are important.

|                  |                  |                      |
|------------------|------------------|----------------------|
| <b>SAND MIX:</b> | Rapid Set Cement | 100 lbs (45.4 kg)    |
|                  | Sand (ssd)       | 2900 lbs (1315.4 kg) |
|                  | Water            | 480 lbs (217.7 kg)   |

A rock mix is suitable for structural applications such as pavement base and foundation backfill.

|                  |                  |                     |
|------------------|------------------|---------------------|
| <b>ROCK MIX:</b> | Rapid Set Cement | 88 lbs (40 kg)      |
|                  | Coarse Aggregate | 1800 lbs (816.4 kg) |
|                  | Sand (ssd)       | 1700 lbs (771.1 kg) |
|                  | Water            | 400 lbs (181.4 kg)  |

**MIXING:** The use of a power-driven mechanical mixer, such as a mortar mixer or a mobile volumetric concrete mixer, is recommended. Mix and place material quickly.

## OVERVIEW

### Highlights:

**Fast:** Hardens quickly for rapid foot traffic access and pavement overlay

**Controlled:** Easily removed by conventional digging tools

**Effective:** Little to no subsidence

**Easy to Use:** Pour into place.  
No compaction needed

### Subsidence of Backfill Materials:

Other dip

Rapid Set stays flat



### Manufacturer:

CTS Cement Manufacturing Corp.  
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# FLOWABLE FILL High Performance Backfill

**PLACEMENT:** Rapid Set® FLOWABLE FILL may be placed using traditional construction methods. Organize work so that all personnel and equipment are ready before placement.

Do not install on frozen surfaces. To extend working time, use cold mix water or a CTS approved admixture. FLOWABLE FILL may be applied in temperatures ranging from 45°F to 90°F (7°C to 32°C). No curing is necessary.

**COLD WEATHER:** Environmental and material temperatures below 70°F (21°C) may delay setting time and reduce the rate of strength gain. Lower temperatures will have a more pronounced effect. Thinner sections will be more significantly affected. To compensate for cold temperatures, keep material warm, use heated mix water, and follow ACI 306 Procedures for Cold Weather Concreting.

**WARM WEATHER:** Environmental and material temperatures above 70°F (21°C) may speed setting time and increase the rate of strength gain. Higher temperatures will have a more pronounced effect. To compensate for warm temperatures, keep material cool, use chilled mix water, and follow ACI 305 Procedures for Hot Weather Concreting.

**AVAILABILITY:** Rapid Set® Cement is available in 50-lb and 88-lb (23-kg and 40-kg) bags, 2000-lb super sack and bulk tankers.

**USER RESPONSIBILITY:** Before using CTS products, read current technical data sheets, bulletins, product labels and safety data sheets at [www.CTScement.com](http://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](http://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](http://www.P65Warnings.ca.gov)

## TYPICAL PHYSICAL DATA

### Typical Compressive Strength (ASTM D4832) of Rapid Set® Flowable Fill\*

|          |                   |
|----------|-------------------|
| 1 hour   | 3 psi (0.02 MPa)  |
| 3 hours  | 10 psi (0.07 MPa) |
| 24 hours | 20 psi (0.14 MPa) |
| 1 year   | 75 psi (0.52 MPa) |

\*Humidity, ambient and water temperature will vary your results. All data produced at 70°F (21°C).



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