



**SPECIALTY CONSTRUCTION PRODUCTS**

# ChemSpeed™ 75

Very Rapid Setting Concrete Repair Mortar with Migrating Corrosion Inhibitor Suitable for Horizontal and Vertical/Overhead Form & Pour

## P R O D U C T D A T A

### DESCRIPTION

**ChemSpeed 75** is a single component, very rapid setting high performance structural repair mortar with added migrating corrosion inhibitor. This state of the art fly ash formula produces high, early strength at a wide range of temperatures with very low permeability. Areas repaired with **ChemSpeed 75** can be returned to rubber wheeled traffic within 2 hours depending on temperature. **ChemSpeed 75** meets ASTM C928 for rapid repair of concrete and can be extended up to 60% with silica gravel deep placements.

### USES

- Structural repairs to heavy traffic substrates including concrete decks, bridges, parking garages and roadways.
- Fast setting repairs to high load concrete such as loading docks and industrial floors.
- Form and pour repairs to vertical columns and overhead beams.
- Repair adjacent construction and expansion joints.

### ADVANTAGES

- Initial set in 13 to 19 minutes at 72°F (22°C).
- Repairs from 0.50 inch (1.3 cm) to full depth.
- Extremely versatile - use for horizontal repairs or as a form and pour mortar to repair vertical columns and overhead beams.
- Non-shrink with exceptional bond strength.
- High early strength gaining 3000 psi (21 MPa) in 2 hours at 72°F (22°C).
- May be placed down to 20°F (-7°C) if ACI 306 cold weather concreting standards are followed.
- Accepts rubber wheeled traffic over road surfaces or industrial facilities in 2 hours.
- Resists freeze-thaw cycles and deicing chemicals.
- May be extended for economical placement at depths greater than 1.5 inch (3.8 cm).
- Contains migrating corrosion inhibitor for superior protection of structural rebar.
- May be coated in as little as 4 hours

### Packaging Product Number

50 lb (22.7 kg) bag	56 per pallet	F2035.50
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### Estimating Guide

Yield per bag	0.42 ft <sup>3</sup> (0.012 m <sup>3</sup> )
With 60% extension	0.60 ft <sup>3</sup> (0.017 m <sup>3</sup> )

### DIRECTIONS

**Surface Preparation:** If using **ChemSpeed 75** as replacement concrete, area to be repaired must be free of all dust, dirt, loose concrete, oil, grease, old asphalt, curing and sealing compounds, form release agents, efflorescence, or other contaminants that might interfere with adequate bond. Square cut perimeter of holes to a minimum depth of one inch (2.5 cm), undercutting to sound concrete when possible. Exposed reinforcing steel (NACE 3 Standard SSPC SP6) must be cleaned to a bright metal removing all rust or signs of oxidation. Chip out concrete behind or under rebar to a depth of 3/4" (1.9 cm). Coat any exposed steel with **Polyweld EPX<sup>CI</sup>** or other corrosion inhibiting bonding agent as specified and allow to dry. Immediately prior to placement of **ChemSpeed 75** remove any remaining dust or dirt with vacuum or oil free compressed air. Saturate the prepared area with clean, potable water to the point of rejection. Remove any puddles or standing water immediately before placing mortar so that concrete is in a Saturated Surface Dry (SSD) condition. If using **ChemSpeed 75** to build a new area, follow all normal surface preparation procedures for concrete placement including compacting the substrate, forming the area, addressing drainage issues, etc. Apply form release agent to forms and allow to dry.

**Mixing:** Condition the dry mortar and clean potable mix water to 65° to 75°F (18° to 24°C). Use 2.5 quarts of clean potable water per 50 lbs of **ChemSpeed 75**.



**ChemMasters®**

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Do not add additional water or re-temper after initial mixing procedure. When mixing one bag use a variable speed drill with a jiffler paddle. For multiple bags or deeper pours use a mortar mixer. Refer to Estimating Guide for water requirements and yield. For deeper pours add up to 35 lbs. of clean stone to the mix. Add **ChemSpeed 75** to the mixing vessel and continue mixing for approximately 3 minutes to achieve a lump free consistency. Do not over mix. Add up to 1/2 pint of additional water per bag to adjust to the desired finishing consistency.

Over watering causes excessive shrinkage and lower strengths. In exterior applications, check the air content of the mix prior to pouring. If the air content is under 3% add up to 1/2 ounce of chemical air entraining agent per bag to get the air content up to 6%.

**APPLICATION:** Scrub a mortar bond coat into the repair area being sure to fill all voids and pores. Do not allow bond coat to dry before placement of mortar. Poor substrate conditions may require the use of a chemical bonding agent. Compact mortar firmly into repair area filling all voids and air pockets paying special attention to spaces beneath any reinforcing steel. Vibrators are recommended for deeper pours or where reinforcing steel is used. Finish the same as ready-mix concrete with floats, trowels, or brooms.

**CURING: ChemSpeed 75** continues to gain strength as long as it is damp. Apply a curing compound that meets ASTM C309 or ASTM C1315 such as **Polyseal, Polyseal A, or Polyseal WB** as soon as all bleed water has dissipated and application will not mar the surface. Call ChemMasters' Technical Service Department for recommendations regarding other curing methods. Light foot traffic may be allowed in approximately 24 hours.

**Extreme Temperature Application:** Temperatures above 80°F (26.7°C) - Cool the substrate with cool clean potable water. Prior to mixing keep material in cool, dry area, and use cold water for mixing. Temperatures below 50°F (10°C) - Keep material warm and use lukewarm water to speed set time.

#### **LIMITATIONS**

- Do not apply to frozen or frosted surfaces. Warm substrate to a minimum of 40°F (4°C) prior to application
- Do not apply if ambient or substrate temperatures are below 40°F (4°C).

#### **STORAGE**

Store between 40° and 90°F (4° and 32°C) in unopened bags on pallets in a dry area. Shelf life of properly stored material is one year from date of manufacture.

#### **Precautions:**

**Danger:** Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure if inhaled.

**Precautionary Statements:** Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

**All label precautions and the Safety Data Sheet must be fully understood before using this product.  
Keep out of the reach of children.**

# ChemSpeed 75

## TECHNICAL DATA

ASTM C928, R3 Standard Specification for Packaged, Dry,  
Rapid Hardening, Cementitious Materials for Concrete Repairs.

Test Formulation	
Material	ChemSpeed 75
Mixing Conditions	73°F @ 50% relative humidity
Batch Dates:	September 2015
Water Addition Rate:	2.5 quarts per 50 lbs of ChemSpeed 75
Curing:	Air Cure, 50 % relative humidity @ 73°F
Where Extended:	50 lbs <b>ChemSpeed 75</b> with 30 lbs 3/8" ssd pea gravel

Test Results (Plastic)	
ASTM C109 Flow	@ 5 minutes: 138% @ 15 minutes: material set up
ASTM C1611 Slump Flow Extended	24.25 in
ASTM C191 Set Time (Vicat)	Initial: 16 minutes Final: 25 minutes

Test Results (Chemical)	
*AASHTO T105: Sulfate Sulfate Content (SO <sub>3</sub> ) Sulfate Content (SO <sub>4</sub> )	1.07% 1.28%
*ASTM C1218: Water Soluble Chloride	0.004%

\* Material extracted from cast cylinder cured 28 days before testing.

Test Results (Hardened) ASTM C109 Compressive Strength (psi) Average of three 2 inch cubes		
1 day	7 day	28 day
7,810	11,610	13,240

Compressive Strength of Hydraulic Cement Mortars

ASTM C157 Length Change (%) Average of three 3x3x11 1/4 " specimens Initial readings at 3 hours per ASTM C928 Air Cure		
1 day	7 day	28 day
-0.044	-0.082	-0.100

Length Change of Hardened Hydraulic Cement Mortar & Concrete

ASTM C157 Length Change (%) Average of three 3x3x11 1/4 " specimens Initial readings at 3 hours per ASTM C928 Water Cure		
1 day	7 day	28 day
0.004	0.004	0.011

Length Change of Hardened Hydraulic Cement Mortar & Concrete

ASTM C348 Flexural Strength (psi) Average of three 40 x 40 x 160 mm specimens		
1 day	7 day	28 day
795	1,052	1,135

Flexural Strength of Hydraulic Cement Mortars

ASTM C469 Compressive Modulus of Elasticity (psi) Average of three 4 x 8" cylinders		
1 day	7 day	28 day
$3.66 \times 10^6$	$3.84 \times 10^6$	$4.22 \times 10^6$

Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression

ASTM C496 Splitting Tensile Strength (psi) Average of three 3 x 6" cylinders		
1 day	7 day	28 day
446	626	668

Splitting Tensile Strength of Cylindrical Concrete Specimens

ASTM C39 Compressive Strength (psi) Average of three 40x 40 x 160 mm specimens		
1 day	7 day	28 day
5,952	8,050	9,310

Compressive Strength of Cylindrical Concrete Specimens

ASTM C531 Linear Shrinkage and Coefficient of Thermal Expansion Average of four 1 x 1 x 10" specimens		
7 day	28 day	Coefficient of Thermal Expansion
-0.083%	-0.104%	$6.2 \times 10^{-6}$ in/in/°F

Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, Monolithic Surfacing, and Polymer Concretes

# ChemSpeed 75

## TECHNICAL DATA (continued)

<b>ASTM C666 Freeze Thaw Resistance : Procedure A</b> Average of three 3 x 3 x 11 1/4" specimens Air cured until 28 days before testing. 300 cycles		
Durability Factor	Mass Loss	Surface Condition
97.7	0.0%	No change
Resistance of Concrete to Rapid Freezing and Thawing		

<b>ASTM C672 Salt Scaling (lbs/ft<sup>2</sup>)</b> Average of two 8 x 10 x 4" specimens	
Scaling Loss @ 25 Cycles	Scaling Loss @ 50 Cycles
0.0 lbs/ft <sup>2</sup> Rating 0 No Scaling	0.0 lbs/ft <sup>2</sup> Rating 0 No Scaling
Scaling Resistance of Concrete Surfaces Exposed to deicing Chemicals	

<b>ASTM C882 Slant Shear Bond Strength (psi)</b> Average of three 3 x 6" specimens cast per ASTM C928		
1 day	7 day	28 day
3,001	3,780	3,914
Bond Strength; of Epoxy-Resin Systems Used With Concrete by Slant Shear		

<b>ASTM C1583 Direct Bond Strength (psi)</b> Average of three 2" diameter cores Material applied at a 2" thickness over 4,500 psi sandblasted concrete		
1 day	7 day	28 day
276	429	471
Tensile Strength of Concrete Surfaces & the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct Tension (Pull-off Method)		

<b>M-DOT Direct Shear Bonding Strength (psi)</b> Average of three bonded specimens Bonded 1" thick over 4 " concrete cube		
1 day	7 day	28 day
282	320	366

**This Product is Formulated and Labeled for Industrial and Commercial Use Only**

FOR BEST RESULTS AND SAFEST USAGE, USER IS SPECIFICALLY DIRECTED TO CONSULT THE CURRENT PRODUCT & SAFETY DATA SHEETS AND PACKAGE LABEL FOR THIS PRODUCT. We warrant our products to meet our published specifications and to be free from defects in materials and workmanship to the acceptable quality levels defined in these specifications. If acceptable quality levels are not specified, the acceptable quality levels will be those normally supplied by us for the product. We make no guarantee of the results to be obtained from the use of our products. The determination as to the adaptability of any of our products to the specific needs of the Buyer is solely Buyer's prerogative and responsibility. We are glad to offer suggestions on the use of our products. Nevertheless, there are no warranties given except such expresses warranties offered in connection with the sale of a particular product. Our liability shall be limited to replacement of, or refund of an amount not to exceed the purchase price attributed to, the goods as to which such claim is made. Our selection of one of these alternatives shall be Buyer's exclusive remedy. IN NO CASE SHALL WE BE LIABLE FOR CONSEQUENTIAL OR SPECIAL DAMAGES, EVEN IF WE HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, GUARANTEES, CO-CONDITIONS AND REPRESENTATIONS, EITHER EXPRESSED OR IMPLIED, WHETHER ARISING UNDER ANY STATUTE, COMMON LAW, USAGE OR TRADE, COURSE OF DEALING OR OTHERWISE, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.