



**Bulk Cement
for Precast Concrete
Products**

Updated 5.13.10

1 General Characteristics

RediMAX FORTRESS Cement® is a versatile and flexible, high performance structural cement. **RediMAX FORTRESS Cement®** can be effectively placed in ambient temperatures ranging from 30 to 120 degrees Fahrenheit **without the need for traditional post hydration curing techniques.** **RediMAX FORTRESS Cement®** is mixed and placed like conventional Portland cement concrete, has up to 6 hours of working time depending on ambient temperatures and ¹mix design. **RediMAX FORTRESS Cement® will achieve compressive strengths of more than 2000 psi within 4 to 12 hours depending upon mix design providing for fast production turns.** **RediMAX FORTRESS Cement®** cement has virtually zero carbon footprint and will eliminate approximately one ton of harmful CO₂ greenhouse gasses for every 3 yards of concrete produced.

RECOMMENDED USES: **RediMAX FORTRESS Cement®** is a structural cement concrete suitable for any and all precast concrete product manufacturing where increased production efficiencies and higher strengths are desired. **RediMAX FORTRESS Cement®** can also be used for pavers and concrete masonry units (CMUs).

2 Additional Physical Properties

UNIT WEIGHT

148lb/ft³ (2370 kg/m³)

SETTING TIME

Set Times at 72°F/22°C (ASTM C 403)

¹Initial set: 60 minutes to 4 hours

¹Final set: 90 minutes to 6 hours

VOLUME YIELD (Approximate - Based on 750 lb mix design)

3.00 cu.yd. (2.29 cu. meter) / 2250 lb. Super Sack
= (Binder, water, sand, No.57 stone, micro-air)

NOTES

- Strength development and working times can be adjusted by varying the cement ratio and by use of various CERATECH proprietary activator admixtures.
- Test results based on 846 lbs. of cement per cubic yard mix design & CERATECH Fast Set Activator
- Test results based on 564 lbs. of cement per cubic yard mix design & CERATECH Fast Set Activator

3 Specifications

Results derived from internal CERATECH tests utilizing locally procured aggregates. Data represents typical results from production materials. Actual results may vary, however CERATECH's materials meet and/or exceed established internal quality control standards, (available upon request). **See NOTES section for respective cement loading.**

Property	4 in. x 8 in. cylinders		Test Method
Compressive Strengths, psi (MPa)			
6 hours	² 3100 (21.4)	³ 650 (4.5)	ASTM C 39
24 hours	² 5385 (37.1)	³ 1600 (11.0)	ASTM C 39
3 day - 72 hour	² 7460 (51.4)	³ 2440 (16.9)	ASTM C 39
7 days	² 8650 (59.7)	³ 3250 (22.4)	ASTM C 39
28 days	² 10710 (73.9)	³ 6020 (41.5)	ASTM C 39
Flexural Strength, psi (MPa)			
7 days	² 690 (4.8)	³ 485 (3.4)	ASTM C 78
28 days	² 865 (6.0)	³ 630 (4.3)	ASTM C 78
Splitting Tensile Strength, psi (MPa)			
28 days	750 (5.2)		ASTM C 496
Rapid Freeze Thaw Resistance (Durability Factor - Retained percentage of Dynamic Modulus)			
300 cycles	100%		ASTM C 666A
Scaling Resistance, lbs/ft² (kg/m²)			
50 cycles	0		ASTM C 672
Abrasion Resistance, Depth of wear, millimeters @ 28 day			
	0.14		ASTM C 944 (2005)
Modulus of Elasticity, msi (GPa)			
28 days	5.00 (34.0)		ASTM C 469
Coefficient of Thermal Expansion, in/in/°F			
28 days	4.7		AASHTO TP 60
Length Change, % of total length			
14 days	0.04		ASTM C 157
Creep (365 days) (μ Strain / psi) Creep Coefficient			
	1.91		ASTM C 512

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Technical Support: (888)-341-2600

4 Site Preparation

Not Applicable

5 Mixing Instructions

Standard Mixing Procedures

CONTACT CERATECH FIELD ENGINEERING TEAM FOR SPECIFIC
COMPONENT RATIOS
1-888-341-2600

6 Packaging & Shelf Life

PACKAGING

2,200 lb. Super Sack or bulk transport

SHELF LIFE

1 year

STORAGE

Material must be kept dry

7 Limitations

- Not recommended for placement in temps below 30°F/-1°C and above 120°F/49°C.
- Will not bond to polymers.

8 Application & Finish

- Working times based on ambient temperature, types of aggregate and total amount of water.
- Working times are influenced by surface temperature humidity and repair profile.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished
- **Self-curing**
- Clean all tools and equipment with water prior to the material reaching final set.



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8 Safety

- See **Material Safety Data Sheet (MSDS)**.
- This document does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations prior to use.
- Dispose of water and materials in accordance with Federal, State and Local regulations.
- The use of a dust mask, safety goggles and gloves is recommended.
- Keep out of the reach of children.

WARRANTY:

CERATECH, Inc. ("CERATECH") warrants that its products are free from defects in materials and workmanship. If any CERATECH product fails to conform to this warranty, CERATECH will replace the product at no cost to the buyer or refund the purchase price, at CERATECH's election. Any warranty claim must be made within one (1) year from the date of the shipment of the product to the buyer. In no event shall CERATECH be liable to the buyer for any consequential or incidental damages of any nature. CERATECH MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF ITS PRODUCTS AND EXCLUDES THE SAME. THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF.

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