



ULTRA RAPID CEMENT



Updated 5.30.14

1 General Characteristics

GreatWhite™ is an extremely versatile, cementitious, rapid setting, structural cement *specifically designed for use with volumetric concrete mixers.*

It is a single component powder that is liquid activated. **GreatWhite™** has 20 minutes of working time and (*depending on mix design*), **reaches compressive strengths of more than 2,300 psi within 2 hours.** **GreatWhite™** can be applied in ambient temperature ranges from 30 to 120 degrees Fahrenheit. **GreatWhite™** finishes like traditional Portland based concrete and cleans up easily with water.

RECOMMENDED USES: **GreatWhite™** has been designed for horizontal, sloped and vertical applications providing for **rapid return to service of 2 - 3 hours** for road and bridge decks, aviation runways, parking garages, piers, columns, foundations, parking lots, marine access ramps and any other replacement or new construction application where rapid early strength gains are required.

2 Additional Physical Properties

UNIT WEIGHT

~146lb/ft³ (2338 kg/m³) with 6% Air Entrainment
~156lb/ft³ (2498 kg/m³) without Air Entrainment

SETTING TIME

Set Times at 72°F/22°C at 2" (5 cm) material depth
Initial set: 20 - 30 minutes
Final set: 30 - 40 minutes

VOLUME YIELD

Concrete (binder + sand + coarse agg. + H₂O)
= **2.35 yds³** (per 2,000 lb. Super Sack)

3 Material Specifications

Results provided by licensed engineering test laboratory and represent typical results from production materials. **Actual results will vary depending on specific mix design utilized;** however, CERATECH's materials *meet and/or exceed ASTM C928*, and *exceed* established internal quality control standards, (available upon request). All samples were air cured.

Property	As Packaged 4 in. x 8 in. cylinders	Test Method
Compressive Strengths, psi (MPa)		
2 hours	>2300	ASTM C 39
1 day - 24 hours	>3700	ASTM C 39
7 days	>4500	ASTM C 39
28 days	>6000	ASTM C 39
Flexural Strength, psi (MPa)		
12 hours	>350	ASTM C 78
7 days	>550	ASTM C 78
28 days	650	ASTM C 78
Splitting Tensile Strength, psi (MPa)		
28 days	>450	ASTM C 496
Scaling Resistance, lbs/ft² (kg/m²)		
150 cycles	0	ASTM C 672
Modulus of Elasticity, psi		
128 days	5.4 X 10 ⁶	ASTM C 469
Coefficient of Thermal Expansion, in/in/°F		
128 days	< 5.0 X 10 ⁻⁶ °F	AASHTO TP 60
Length Change, % of total length		
128 days soak / 28 days dry	-0.021 /-0.038	ASTM C 157
Rapid Freeze Thaw Resistance , Durability Factor - Retained Percentage of Dynamic Modulus		
1300 cycles	100%	ASTM C 672

NOTE:

- Performance data based on 850 lb. of cement, #87 Coarse aggregate & 4% air entrainment mix design. Strengths may be varied to meet requirements by adjusting cement ratio and slump.



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4 Mixing Instructions

Recommended Component Ratios for Volumetric / Proportional Mixers (Contact CERATECH Field Engineering Team for more information)

Component Ratios per pound of **GreatWhite™** (approximate mix design to be validated)

- 1.9 lbs of fine aggregate (sand SSD, Specific Gravity = 2.64).
- 2.5 lbs of coarse aggregate (ASTM No. 57 stone SSD, Specific Gravity = 2.68) OR 2.24 lbs of coarse aggregate (ASTM No. 7, 0.50" stone SSD, Specific Gravity = 2.68).
- Water - Project dependant (contact CERATECH TECHNICAL SUPPORT 1-888-341-2600).

Component Ratios per 2,000 lb. Super Sak of **GreatWhite™** (approximate mix design to be validated)

- 4180 lbs of fine aggregate (sand SSD, Specific Gravity = 2.64).
- 5500 lbs of coarse aggregate (ASTM No. 57 stone SSD, Specific Gravity = 2.68) OR 4928 lbs of coarse aggregate (ASTM No. 7, 0.50" stone SSD, Specific Gravity = 2.68).
- Water - Project dependant (contact CERATECH TECHNICAL SUPPORT 1-888-341-2600).

GreatWhite™ cement has been optimized for use with Volumetric / Proportional mixing equipment. Blend the above components per traditional Portland based concrete procedures. (ASTM C 685) Requires GreatWhite™ Liquid Admixtures (Base & Modifier) to be metered into mix water.

Contact CERATECH Technical Support for additional information on mixing and placing **GreatWhite™**.

5 Packaging & Shelf Life

PACKAGING

2,000 lb. Super Sack or bulk transport

SHELF LIFE

1 year

STORAGE

Material must be kept dry

6 Limitations

- Not recommended for placement in temperatures below **30°F** / -1°C or above **120°F** / 49°C.
- Will not bond to polymers.
- Pumpable with proper precautions.

7 Application & Finish

- Working times based on ambient temperature, types of aggregate and total amount of water.
- Minimum profile thickness is 1.50" (3.8 cm) when using 0.50" (1.3 cm) aggregate or 3.00" (7.6 cm) when using 1.00" (2.5 cm) aggregate. There are no restrictions to the maximum depth of the slab profile.
- Not to be used as overlayment.
- Upon initial set, a broom finish can be applied. Upon final set, the material can be saw-cut, drilled, sanded and/or polished.
- **Do not re-temper.** The addition of water to the surface of the repair will negatively affect the materials final properties.
- **General loading in 2 hours for wheeled traffic and 1 hour for foot traffic after addition of water.** In ambient and/or surface temperatures below 32°F/0°C, extend the loading time by 60 minutes for each 10° below 32°F/0°C.
- **All previously existing joints must be re-established within 1 - 2 hours of final set.**
- Self-curing, (Protect with blankets or equivalent in ambient temperatures below 32°F / 0°F).
- 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.

