CEMENT ALL PLUS

Self-Curing, Multi-Purpose Repair Material

PRODUCT DATASHEET

DESCRIPTION: Rapid Set® CEMENT ALL® PLUS is a high-performance, rapid-hardening, multi-purpose concrete repair material with extended working time. Durable in wet environments, CEMENT ALL PLUS is a blend of Rapid Set hydraulic cement, additives designed to match the color of typical existing portland-cement concrete, and specially graded fine aggregates. Cutting-edge Self–Curing Technology (SCT) means wet curing is not required in most applications. CEMENT ALL PLUS is non-metallic and no chlorides are added. Mix CEMENT ALL PLUS with water to produce a workable, high quality material that is ideal where rapid strength gain and high durability are desired. CEMENT ALL PLUS has a working time of 20 minutes.

USES: Use CEMENT ALL PLUS for general and structural concrete repair, doweling and anchoring, formed work, vertical and horizontal trowel applications. CEMENT ALL PLUS is ideal for airport, highway, industrial and marine applications.

ENVIRONMENTAL ADVANTAGES: Use CEMENT ALL PLUS to reduce your carbon footprint and lower your environmental impact. Production of Rapid Set cement emits far less CO_2 than portland cement. Contact your CTS representative for EPD, LEED values and other sustainability information.

APPLICATION: Apply CEMENT ALL PLUS in thicknesses from featheredge to 4" (10 cm). For heavy loads and vehicle traffic, minimum thickness will vary. For deeper sections, use Rapid Set® Mortar Mix or Rapid Set® Concrete Mix. Not intended for extended exposure over 212° F (100° C) . For overlay applications, a minimum of one test section should be prepared to evaluate the suitability of the material and procedure.

SURFACE PREPARATION: Application surface must be clean, sound and free from any materials that may inhibit bond, such as oil, asphalt, curing compound, acid, dirt and loose debris. Apply CEMENT ALL PLUS to a surface that is thoroughly saturated with no standing water. For repairs, roughen surface and remove all unsound material. For underlayment or resurfacing small areas, surface must be prepared to a minimum profile of ICRI CSP 2. Mechanical methods of surface preparation such as shotblasting are preferred. Acid etching is not recommended.

MIXING: The use of a power-driven mechanical mixer, such as a mortar mixer or a drill-mounted mixer, is recommended. Organize work so that all personnel and equipment are in place before mixing. **Use clean potable water. CEMENT ALL PLUS may be mixed using 3.25 to 4.25 quarts (3 L to 4 L) of water per 55-lb (25 kg) bag. Use less water to achieve higher strengths.** For increased fluidity and workability, use Rapid Set® FLOW Control plasticizing admixture. Place the desired quantity of mix water into the mixing container. Add CEMENT ALL PLUS while the mixer is running. Mix for the minimum amount of time required to achieve a lump-free, uniform consistency (usually 1 to 3 minutes). Do not retemper.

PLACEMENT: CEMENT ALL PLUS may be placed using traditional construction methods. Organize work so that all personnel and equipment are ready before placement. Place, consolidate, and screed quickly to allow for maximum finishing time. Use a method of consolidation that eliminates air voids. Do not wait for bleed water; apply final finish as soon as possible. CEMENT ALL PLUS may be troweled, floated or broom finished. On flat work, do not install in layers. Install full-depth sections and progress horizontally. Do not

OVERVIEW

Highlights:

- Fast: 20 minute working time, structural strength in 3 hours
- Self-Curing Technology (SCT): No water curing needed
- Gray Color: Designed to match typical concrete
- Durable: Formulated for long life in critical applications
- Excellent Bond: Superior adhesion to concrete, stone, brick, block, stucco and more
- Multi-Purpose: Use for concrete repair, anchoring, casting, underlayment and more

Conforms to:

ASTM C928 R3, C387

MasterFormat® 2020

03 01 30	Maintenance of Cast-in-Place Concrete
03 01 40	Maintenance of Precast Concrete
03 53 19	Concrete Overlayment
03 54 16	Hydraulic Cement Underlayment
04 01 00	Maintenance of Masonry

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install on frozen surfaces. To extend working time, use Rapid Set® SET Control retarding admixture or use cold mix water. CEMENT ALL PLUS may be applied in temperatures ranging from 45° F to 90° F (7° C to 32° C). Under dry ambient conditions, water-based coatings such as latex paint can be applied after 4 hours. Solvent-based and impermeable coatings such as oil-based paint and epoxy can be applied after 16 hours.

CURING: CEMENT ALL PLUS does not require water curing or curing compound under moderate conditions at 70° F (21° C). In dry, windy or hot conditions, mist with water to maintain a continuous wet surface for minimum of 1 hour or until the product has achieved sufficient strength. Water curing may affect the final color.

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. The use of SET Control retarding admixture will help offset the effects of high temperatures.

YIELD & PACKAGING: CEMENT ALL PLUS is available in a 55-lb (25 kg) bag. One 55-lb (25 kg) bag of CEMENT ALL PLUS will yield approximately 0.48 ft^3 (0.014 m^3).

SHELF LIFE: CEMENT ALL PLUS 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 concrete, 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 concrete 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:** Can expose you to crystalline silica, a carcinogen, and hexavalent chromium, a reproductive toxicant. See www.P65Warnings.ca.gov.

TYPICAL PHYSICAL DATA

Set Time, ASTM C191 Mod.	
Initial set	35 minutes
Final set	45 minutes

Compressive Strength, ASTM C109 Mod.	
3 hours	4000 psi (27.6 MPa)
24 hours	6000 psi (41.4 MPa)
7 days	7000 psi (48.3 MPa)
28 days	8000 psi (55.2 MPa)

Slant Shear Bond, ASTM C882 per C928	
24 hours	1500 psi (10.3 MPa)
28 days	2500 psi (17.2 MPa)

Flexural Strength, ASTM C348	
7 days	1000 psi (4.2 MPa)
28 days	1200 psi (5.5 MPa)

Data obtained at 3.7 quarts per 55-lbs at 70° F (21° C)