HORIZONTAL REPAIR

Master Format #: 03 01 30.71

VERSASPEED 100

RAPID-HARDENING HORIZONTAL REPAIR MORTAR

EUCLID CHEMICAL

PACKAGING

50 lb (22.7 kg) bags
Code: 083PP 50 (bag)

APPROXIMATE YIELD

50 lb (22.7 kg) unit: 0.39 ft³ (0.01 m³) per unit when mixed with 5.25 pints (2.48 L) of potable water.

Extended: 0.52 ft³ (0.0147 m³) per unit when extended with 25 lbs (11.4 kg) of pea gravel. See full extending instructions under "Directions for Use".

MINIMUM/MAXIMUM APPLICATION THICKNESS

Neat: 0.25 to 4 inches (6 to 102 mm)
Extended: 1 to 6 inches (25 to 152 mm)

CLEAN UP

Clean tools and equipment with water before the material hardens.

SHELF LIFE

1 year in original, unopened package

SPECIFICATIONS AND COMPLIANCES

- Alberta Transportation Technical Standards - Specification B391
- ASTM C928 Standard Specification for Rapid Hardening Cementitious Materials for Concrete Repairs

DESCRIPTION

VERSASPEED 100 is a versatile, single component, rapid strength gaining repair mortar for horizontal, and form and pour repair projects. Requiring only the addition of water, VERSASPEED 100 is a low shrinkage, high early strength material that is easy to use for fast turnaround projects. Repaired areas may be open to standard tire traffic just 2 hours following the final set, and non-breathable coatings can be applied after 4 hours. VERSASPEED 100 is similar in appearance to concrete and is suitable for use in repairing concrete surfaces from approximately 1/4" to 6" (6 to 152 mm) in thickness.

PRODUCT CHARACTERISTICS

FEATURES/BENEFITS

- Rapid set time and strength gain
- Suitable for interior or exterior applications
- Open to light duty traffic as soon as 1 hour
- Coat with epoxy after 4 hours at 70 °F (21 °C)
- Micro-fiber reinforced
- Shrinkage compensated
- Contains an integral corrosion inhibitor
- Can be placed up to 4 in. (102 mm) neat

PRIMARY APPLICATIONS

- Multi-unit residential
- Warehouses
- Industrial / commercial / institutional floors
- Bridges
- Roads and Highways
- Loading docks
- Vertical/overhead form and pour applications
- Pavements
- Parking decks and ramps

COMMON METHODS

- Trowelable (horizontal applications)
- Pumpable
- Form and pour

PHYSICAL PROPERTIES

Single component
Mixes with 5 to 5.25 pints (2.37 to 2.48 L) of potable water per 50 lb (22.7 kg) bag/pail

Working Time:	15 minutes
Initial Set:	10 to 20 minutes
Final Set:	20 to 40 minutes

Physical properties based on measurements at 70 °F in laboratory conditions.

The following coverage rates are approximations based on yield of a 50 lb (22.7 kg) unit mixed at standard consistency.

Application Thickness - inches (mm)	1/4 (6)	1/2 (13)	1 (25)	1 1/2 (38)	2 (51)	3 (76)	4 (102)
Coverage Area per Unit - ft² (m²)	18.7 (1.74)	9.3 (0.86)	4.6 (0.43)	3.1 (0.29)	2.3 (0.21)	1.5 (0.14)	1.1 (0.10)

TECHNICAL INFORMATION

The following are typical values obtained under laboratory conditions. Expect reasonable variation under field conditions.

Test Method	Test Property	Values
ASTM C109	Compressive Strength	1 hour . . 2,600 psi (17.9 MPa) 1 day. . . . 6,000 psi (41.4 MPa) 2 hours. . 3,600 psi (24.8 MPa) 7 days . . . 7,500 psi (51.7 MPa) 3 hours. . 5,000 psi (34.5 MPa) 28 days . . 10,500 psi (72.4 MPa)
ASTM C348	Flexural Strength	1 day. . . . . 830 psi (5.7 MPa) 7 days . . . . . 1,000 psi (6.9 MPa) 28 days . . . . . 1,500 psi (10.3 MPa)
ASTM C496	Splitting Tensile Strength	7 days . . . . . 530 psi (3.7 MPa) 28 days . . . . . 780 psi (5.4 MPa)
ASTM C882 (modified per TXDOT DMS 4655)	Slant Shear Bond Strength	1 day. . . . . 1,800 psi (12.4 MPa) 7 days . . . . . 2,300 psi (15.9 MPa) 28 days . . . . . 2,700 psi (18.6 MPa)
ASTM C1581	Crack Resistance	Net Time Until Cracking . . . . . > 140 days Stress Rate . . . . . 4.7 psi/day (0.03 MPa/day)
ASTM C157*	Length Change (28 days)	Air Cure. . . . . -0.042% Wet Cure . . . . . .+0.007%
ASTM C266	Set Time	Initial Set . . . . . 10 - 20 minutes Final Set . . . . . 20 - 40 minutes
ASTM C666 Procedure A	Freeze/Thaw Resistance	300 cycles 98%
ASTM C469	Modulus of Elasticity	28 days . . . . . 4.76 x 10^6 psi (3.3 x 104 MPa)
ASTM C779	Abrasion Resistance	28 days . . 0.018 inches (0.45 mm) of wear at 1 hr

*Based on initial length @ 24 hours; 3" x 3" x 11" (7.6 cm x 7.6 cm x 27.9 cm) beams

DIRECTIONS FOR USE

Surface Preparation: Concrete surfaces must be structurally sound, free of loose or deteriorated concrete and free of dust, dirt, paint, efflorescence, oil and all other contaminants. Mechanically abrade the surface to achieve a surface profile equal to CSP (Concrete Surface Profile) 5 - 7 in accordance with ICRI Guideline 310.2. Properly clean profiled area.

Priming & Bonding (Saw Cut & Chipped Out Repairs, Form & Pour Repairs): Thoroughly clean any exposed reinforcing steel, and apply DURALPREP A.C. to the concrete and the reinforcing steel within the repair area. Refer to the DURALPREP A.C. technical data sheet for full instructions. Alternatively, application of EUCOWELD 2.0 to a dry substrate or a scrub coat of VERSASPEED 100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The repair material must be placed on the scrub coat before the scrub coat dries out.

Priming & Bonding (Horizontal Toppings): For the best adhesion to concrete, use EUCOFLOOR EPOXY PRIMER seeded with sand as the bonding coat. Refer to the EUCOFLOOR EPOXY PRIMER technical data sheet for full instructions. Alternatively, application of EUCOWELD 2.0 to a dry substrate or a scrub coat of VERSASPEED 100 to the saturated surface dry (SSD) concrete surface may be used for bonding. The topping material must be placed on the scrub coat before the scrub coat dries out.

Mixing: All materials should be in the proper temperature range of 60 °F (15 °C) to 85 °F (29 °C). Single 50 lb (22.7 kg) units may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. A horizontal shaft mortar mixer may be used for large jobs. Add the appropriate amount of potable water to a clean mixing vessel, then add the dry product. **The amount of water to be mixed with the VERSASPEED 100 is critical. Initially add 5 pints [80 fl.oz.] (2.37 L) of water per 50 lb (22.7 kg) bag/pail and mix for 2 minutes. If after the initial 2 minutes of mixing, the desired flow is not obtained, no more than 0.25 pints [4 fl.oz.] (118 mL) of additional water should be added to the mix in order to achieve more flow.** Mix an additional 2 minutes after adding extra water. For deeper repairs, 4" (102 mm) to 6" (152 mm), extend VERSASPEED 100 with 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) rounded pea gravel (#8, ASTM C33). The pea gravel must be dense and non-absorbtive per ASTM C127 and non-reactive (ASR) per ASTM C227, C289 and C1260. Do not add additional water or admixtures. Do not retemper.

Placement: Important - The application temperature range of VERSASPEED 100 is from 35 to 85 °F (2 to 29 °C). For temperatures above 85 °F (29 °C) use VERSASPEED LS100. Allow approximately 15 minutes to mix, place, and finish VERSASPEED 100 repair mortar at 72 °F (22 °C). To make repairs, completely fill repair area with material ensuring no voids and screed to match surrounding concrete. Do not use VERSASPEED 100 for repairs less than 1/4"(6 mm) deep.

Finishing: Finish the repair material to the desired texture. Do not add water to the surface during the finishing operation. When placing under hot and windy conditions the use of EUCOBAR evaporation retarder is recommended to prevent the loss of surface moisture.

Curing & Sealing: If an epoxy coating will not be applied, wet cure the surface with water and polyethylene sheets at least one day, or use a curing compound. If applying an epoxy coating, it is important to wet cure with wet burlap for at least 2 hours and then allow to air dry for at least 2 hours before coating. VERSASPEED 100 can be coated with epoxy systems after 4 hours at 70 °F (21 °C).

PRECAUTIONS/LIMITATIONS

- The application temperature range of VERSASPEED 100 is 35 to 85 °F (2 to 29 °C).
- If an epoxy coating will be applied, follow surface preparation procedures as directed by the coating manufacturer.
- When necessary, follow the recommendations in ACI 305R "Guide to Hot Weather Concreting" or ACI 306R "Guide to Cold Weather Concreting".
- In all cases, consult the Safety Data Sheet before use.

Rev. 05.24