

## HORIZONTAL REPAIR

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# VERSASPEED LS100

## RAPID HARDENING HORIZONTAL REPAIR MORTAR WITH EXTENDED WORKING TIME

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**EUCLID CHEMICAL**

### PACKAGING

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

### APPROXIMATE YIELD

**50 lb (22.7 kg) unit:** 0.39 ft<sup>3</sup> (0.011 m<sup>3</sup>)  
per unit when mixed with 5.25 pints  
(2.48 L) of potable water.

**Extended:** 0.52 ft<sup>3</sup> (0.0147 m<sup>3</sup>) 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 mm to 10 cm)  
Extended: 1 to 6 inches (2.5 to 15 cm)

### CLEAN UP

Clean tools and equipment with water  
before the material hardens.

### SHELF LIFE

1 year in original, unopened package

### SPECIFICATIONS AND COMPLIANCES

ASTM C928 Standard Specification  
for Rapid Hardening Cementitious  
Materials for Concrete Repairs

### DESCRIPTION

VERSASPEED LS100 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 LS100 is a low shrinkage, high early strength material that is easy to use for fast turn-around projects. Repaired areas may be open to standard tire traffic 5 hours following the final set. VERSASPEED LS100 is similar in appearance to concrete and is suitable for use in repairing concrete surfaces from approximately 1/4" to 6" (6 mm to 15 cm) in thickness. VERSASPEED LS100 is a slower setting version of our popular VERSASPEED 100 material.

### PRODUCT CHARACTERISTICS

#### FEATURES/BENEFITS

- Rapid strength gain with extended working time
- Suitable for interior or exterior applications
- Open to light duty traffic as soon as 4 hours
- Coat with epoxy after 5 hours at 70 °F (21 °C)
- Micro-fiber reinforced
- Shrinkage compensated
- Contains an integral corrosion inhibitor
- Can be placed up to 4 in. (10 cm) neat
- Can be extended up to 50% by weight

#### PRIMARY APPLICATIONS

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

#### 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: 45 minutes

Initial Set: 30 to 60 minutes

Final Set: 60 to 100 minutes

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

## 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 . . . 1,200 psi (8.3 MPa)    1 day . . . . 4,000 psi (27.6 MPa) 2 hours . . . 2,800 psi (19.3 MPa)    7 days . . . . 5,000 psi (34.5 MPa) 28 days . . . . 8,000 psi (55.2 MPa)
ASTM C348	Flexural Strength	1 day . . . . . 540 psi (3.7 MPa) 7 days . . . . . 1,000 psi (6.9 MPa) 28 days . . . . . 1,100 psi (7.6 MPa)
ASTM C496	Splitting Tensile Strength	7 days . . . . . 300 psi (2.1 MPa) 28 days . . . . . 480 psi (3.3 MPa)
ASTM C882 (modified per TXDOT DMS 4655)	Slant Shear Bond Strength	1 day . . . . . 1,500 psi (10.3 MPa) 7 days . . . . . 2,100 psi (14.5 MPa) 28 days . . . . . 2,800 psi (19.3 MPa)
ASTM C1581	Crack Resistance	Net Time Until Cracking . . . . . > 90 days Stress Rate . . . . . 7.1 psi/day
ASTM C157*	Length Change (28 days)	Air Cure . . . . . -0.030% Wet Cure . . . . . +0.013%
ASTM C266	Set Time	Initial Set . . . . . 30 - 60 minutes Final Set . . . . . 60 - 100 minutes
ASTM C666 Procedure A	Freeze/Thaw Resistance	300 cycles . . . . . > 95%
ASTM C469	Modulus of Elasticity	28 days . . . . . 5.28 x 10 <sup>6</sup> psi
FM 5-578	Resistivity	28 days . . . . . 31,300 ohm-cm
ASTM C779	Abrasion Resistance	28 days . . . . . 0.019 inches 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

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## 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 LS100 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 or a scrub coat of VERSASPEED LS100 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:** Single bags/pails may be mixed with a drill and #P2, #P5, or #P6 mixing paddle according to ICRI Guideline No. 320.5. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 60 to 85 °F (15 to 29 °C). Add the appropriate amount of water for the batch size and then add the VersaSpeed LS100. **The amount of water to be mixed with the VersaSpeed LS100 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" (10 cm) to 6" (15 cm), extend VersaSpeed LS100 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-absorbent per ASTM C127 and non-reactive (ASR) per ASTM C227, C289 and C1260.

**Placement:** Important- The application temperature range of VersaSpeed LS100 is from 45 to 95 °F (7 to 35 °C). Allow approximately 30 minutes to mix, place, and finish VersaSpeed LS100 repair mortar at 72 °F (22 °C). To make repairs, spread with a float, come-a-long, or square tipped shovel to a thickness that is level with the surrounding concrete. Do not use VersaSpeed LS100 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 polyethylene sheets for at least 3 hours and then allow to air dry for 2 hours before coating. VersaSpeed LS100 can be coated with epoxy systems after 5 hours at 70 °F (21 °C).

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## PRECAUTIONS/LIMITATIONS

- The application temperature range of VersaSpeed LS100 is 45 to 95 °F (7 to 35 °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.

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