



VERSASPEED LS100

Rapid Hardening Horizontal Repair Mortar with Extended Working Time

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.

Primary Applications

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

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
- Can be placed up to 4 in. (10 cm) neat
- Can be extended up to 50% by weight

Technical Information

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

PROPERTY	VALUES
Compressive Strength ASTM C109	3 hours 1,200 psi (8.3 MPa)
	5 hours 2,800 psi (19.3 MPa)
	1 day 4,000 psi (27.6 MPa)
	7 days 5,000 psi (34.5 MPa)
	28 days 8,000 psi (55.2 MPa)
Flexural Strength ASTM C348	1 day 540 psi (3.7 MPa)
	7 days 1,000 psi (6.9 MPa)
	28 days 1,100 psi (7.6 MPa)
Splitting Tensile Strength ASTM C496	7 days 300 psi (2.1 MPa)
	28 days 480 psi (3.3 MPa)
Slant Shear Bond Strength ASTM C882 (modified per TXDOT DMS-4566)	1 day 1,500 psi (10.3 MPa)
	7 days 2,100 psi (14.5 MPa)
	28 days 2,800 psi (19.3 MPa)
Crack Resistance ASTM C1581	Net Time Until Cracking >90 days
	Stress Rate 7.1 psi/day
Length Change (28 days) ASTM C157*	Air Cure - 0.030%
	Water cure +0.013%
Set Time (ASTM C266)	Initial set. 30 - 60 minutes Final set 60 - 100 minutes
Freeze/Thaw Resistance ASTM C666 Procedure A	300 cycles >95%
Modulus of Elasticity (ASTM C469)	28 days 5.28 x 10 ⁶ psi
Resistivity (FM 5-578)	28 days 31,300 ohm-cm
Abrasion Resistance (ASTM C779)	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

Shelf Life

1 year in original, unopened package

Packaging/yield

VERSASPEED LS100 is packaged in 50 lb (22.7 kg) bags and 50 lb (22.7 kg) pails. **Yield:** 0.39 ft³ (0.011m³) per bag/pail when mixed with 5.25 pints (2.48 L) of water. VERSASPEED LS100 may be extended with up to 25 lb (11.4 kg) of clean, SSD, 3/8" (9.5 mm) pea gravel. Approximate Extended Yield: 0.52 ft³ (0.0147 m³) per 50 lb bag/pail.

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°F (15°C) to 85°F (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-absorbive 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).

Clean-Up

Clean tools and equipment with water before the material hardens.

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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