VERSASPEED 100

Rapid Setting Horizontal Repair Mortar

EUCLID CHEMICAL

Description

VERSASPEED 100 is a single-component, rapid-hardening, low shrinkage, micro-fibre reinforced repair mortar for projects that require traffic or a non-breathable coating within hours. Repaired areas may be open to standard tyre traffic 2 hours following the final set and an epoxy coating can be applied after 4 hours.

Primary Applications

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

Features / Benefits

- Rapid set time and strength gain
- Suitable for interior or exterior applications
- Open to light duty traffic as soon as 1 hour
- Can be over-coated after 4 hours at 20° C
- Micro-fibre reinforced
- Shrinkage compensated and reduced
- Excellent bond to properly prepared sound concrete
- Can be extended up to 50% by weight

Technical Information

The following results were developed under laboratory conditions @ 23°C:

Property	Values
Compressive Strength ASTM C109	1 hour 17.9 MPa 2 hours 24.8 MPa 3 hours 34.5 MPa 1 day 41.4 MPa 7 days 51.7 MPa 28 days 72.4 MPa
Flexural Strength ASTM C348	1 day 5.7 MPa 7 days 6.9 MPa 28 days 10.3 MPa
Splitting Tensile Strength ASTM C496	7 days 3.7 MPa 28 days 5.4 MPa
Slant Shear Bond Strength ASTM C882 (modified per TXDOT DMS-4566)	1 day 12.4 MPa 7 days 15.9 MPa 28 days 18.6 MPa
Crack Resistance ASTM C1581	Net Time Until Cracking >140 days Stress rate 0.03MPa/day
Length Change (28 days) ASTM C157*	Air cure -0.042% Water cure +0.007%
Set Time ASTM C266	Initial set 10 - 20 mins Final set 20 - 40 mins
Modulus of Elasticity ASTM C469	28 days <30,000 MPa
Direct Tensile Bond Strength ASTM C1583	28 days 2.1 MPa
Resistivity (FM 5-578)	28 days 41,100 ohm/cm
Abrasion Resistance ASTM C779	28 days 0.45 mm of wear at 1 hr

*Based on initial length @ 24 hours; 7.6cm x 7.6cm x 27.9 cm beams

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Packaging

VERSASPEED 100 is packaged in 25 kg bags. Yield: 0.012m³ per bag when mixed with 2.8 L of water. **VERSASPEED 100** may be extended with up to 11.5 kg of clean, SSD, 10 mm chipping. Approximate Extended Yield: 0.0157 m³ per bag.

Shelf Life

1 year in original, unopened package.

Specifications/Compliances

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

Coverage/25kg Bag

Depth (mm)	6	13	19	25	50	75	100	150
Coverage (m^2)	2.0	0.92	0.63	0.48	-	-	-	-
Coverage with aggregate extension (m^2)	-	-	-	0.63	0.31	0.21	0.16	0.10

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:** Soak the repair area with potable water to achieve a saturated-surface dry (SSD) condition. The SSD concrete must be primed with a scrub coat of VERSASPEED 100. The repair must be made before the VERSASPEED 100 scrub coat dries out.

Mixing: Single bags may be mixed with a drill and suitable mixing paddle. Use a horizontal shaft mortar mixer for larger jobs. All materials should be in the proper temperature range of 15˚C to 30˚C. Add the appropriate amount of water for the batch size and then add the VERSASPEED 100. **The amount of water to be mixed with the VERSASPEED 100 is critical. Initially add 2.80 L of water per 25 kg bag and mix for 2 minutes. If after the initial 2 minutes of mixing, the desired flow is not obtained, no more than 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, 2.5 cm to 15 cm, extend VERSASPEED 100 with 11.5 kg of clean, SSD, 10 mm rounded chipping (#8, ASTM C33). The chipping must be dense and non-absorbtive per ASTM C127 and non-reactive (ASR) per ASTM C227, C289 and C1260.

Placement: ***Important*** **-** The application temperature range of VERSASPEED 100 is from 5° to 32°C. For temperatures above 32˚C use VERSASPEED LS100. Allow approximately 15 minutes to mix, place, and finish VERSASPEED 100 repair mortar at 30°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 100 for repairs less than 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 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 20°C.

Clean Up

Clean tools and equipment with water before the material hardens.

Precautions / Limitations

- The application temperature range of **VERSASPEED 100** is 2 to 32°C.
- If an epoxy coating will be applied, follow surface preparation procedures as directed by the coating manufacturer.
- In all cases, consult the Safety Data Sheet before use

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