

SPRAYABLE, CRYSTALLINE ENHANCED, HI-BUILD RESURFACING MORTAR

DESCRIPTION

SURFIX™ HI-BUILD performs as a sprayable, cement-based, one-component, crystalline enhanced repair mortar for resurfacing and waterproofing concrete and masonry substrates. SURFIX™ HI-BUILD is ideally suited for horizontal, vertical and overhead repair applications.

RECOMMENDED FOR

- ▶ Used for restoring a wide range of damaged concrete structures
- ▶ Perfect for above or below grade, vertical and overhead concrete substrates where aggregate coverage has been lost
- ▶ Can be used to correct concrete substrate irregularities of forms or unconsolidated concrete
- ▶ Use in conjunction with the Penetron Crystalline Waterproofing System to stop leaks and rebuild surfaces

ADVANTAGES

- ▶ Use for both interior and exterior applications
- ▶ Can be applied overhead and vertically without the use of forming aides
- ▶ Apply to (6-51 mm) (1/4-2")
- ▶ One-component, only add water
- ▶ Bonds tenaciously to cement-based substrates
- ▶ Working time is approximately 45 minutes
- ▶ Suitable for low velocity wet spray or hand trowel applications
- ▶ Crystalline technology can help reduce reinforcing steel corrosion by decreasing exposure to moisture

TECHNICAL CHARACTERISTICS

Time Period	Compressive Strength (ASTM C-109)	Bond Strength (ASTM C-882)	Flexural Strength (ASTM C-348)
7 days	37,9 MPa (5500 psi)	17,9 MPa (2600 psi)	10,3 MPa (1500 psi)
28 days	56,9 MPa (8250 psi)	23,4 MPa (3400 psi)	-

Cooler temperatures, inadequate ventilation and higher humidity can extend drying times. All data derives from tests under laboratory conditions; field conditions may yield slightly different results.

DIRECTIONS FOR USE

Surface Preparation: SURFIX™ HI-BUILD should be stored at 4°C (40°F) to 27°C (80°F) 24 hours prior to installation. Surface and adjoining area must be clean, sound, and free from dirt, loose particles, dust, waxes, plastics, curing compounds, grease, paint, efflorescence, and any foreign materials that will inhibit a tenacious bond. If applicable, completely expose and clean all reinforcing steel, ensuring a minimum clearance of 19 mm (3/4") behind reinforcing steel. Perform in accordance with ICRI Technical Guideline No. 310.1R-2008 (formerly No. 03730). For best results, repair area edges should be saw cut to a minimum depth of 6 mm (1/4"). Mechanically prepare all surfaces to a minimum CSP (Concrete Surface Profile) 2 to 3. Refer to ICRI Guideline No. 310.2R-2013 "Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings and Polymer Overlays and Concrete Repair." Never use acid, chemical cleaners or mastic removers on any surface to which a Penetron Specialty product will be applied. Apply a scrub coat application of loosely mixed SURFIX™ HI-BUILD slurry or PENETRON slurry. This should be applied to all surfaces coming into contact with the patching material.

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Do not allow scrub coat to dry prior to the placement of the SURFIX™ HI-BUILD. If scrub coat is dry, remove to a clean surface and reapply.

Mixing: SURFIX™ HI-BUILD requires 4,0 – 4,5 L (4,25-4,75 qt) of clean water per 22,7 kg (50 lb) of powder. Mix only the amount of material that can be placed in 35 minutes. Pour the required amount of potable water into a clean mixing container, then add the measured amount of SURFIX™ HI-BUILD while continuing to mix and blend thoroughly for 1-2 minutes to a lump free, putty-like consistency. Small amounts of material can be mixed using a hand trowel. For larger amounts, use a 1/2" drill (400-600 rpm) and paddle.

Working time at 21°C (70°F) is 35-50 minutes.

NOTE: SURFIX™ HI-BUILD is ready to use with the addition of water. DO NOT add any materials or additives to mixture other than those described above.

APPLICATION:

Immediately apply the fresh mortar into the entire surface, forcing SURFIX™ HI-BUILD firmly into the previously prepared area to ensure full contact with all bonding surfaces. When spraying, use low velocity wet-spray equipment capable of mixing, pumping, and applying the SURFIX™ HI-BUILD within the recommended water-addition range. Spray velocity must be sufficient to ensure proper compaction. Slightly overfill the area. After initial set, use a trowel to finish SURFIX™ HI-BUILD to the desired final profile, shaping the patch from the center towards the bond edge at the existing surfaces. A mist of water may be applied for final finishing. In deeper areas, additional lifts can be made after the original patch has reached initial set. Score and roughen the original lift layer to improve bond between applications. SURFIX™ HI-BUILD can be placed in lifts up to 51 mm (2") on vertical and for overhead applications by holding the mortar in place until initial set has occurred.

For applications receiving a coating, float SURFIX™ HI-BUILD with a wood or plastic float. For a brush finish, use a stiff-bristled broom or mason's brush, or for a smooth finish, use a steel-trowel to close the surface.

NOTE: The minimum ambient and surface temperatures should be 4°C (40°F) at time of application. Hot weather and conditions above 27°C (80°F) will reduce working time and accelerate set, while cold temperatures below 16°C (60°F) will have a retarding effect.

CURING:

Cure in accordance with ACI-308R. Protect patch from rapid curing caused by high temperature, wind, low humidity and direct sun by covering with wet burlap or plastic for up to 24 hours. A water-based curing compound can also be used.

NOTE: Do not apply to frozen or frost covered areas.

Contact Penetron Hellas S.A. Technical Support for additional information.

SPECIAL CONSIDERATIONS

For typical larger applications, use a forced action type mixer and low velocity pump with air pressure injected at the spray nozzle. For small applications use a mixing container, mixing paddle, heavy duty drill and hand trowels.

Contact Penetron Hellas S.A. Technical Support for additional information on equipment and application tools.

Clean all tools and equipment with water immediately after use, prior to material hardening.

Application temperature ranges between 4°-35°C (40°-95°F)

NOTE: Above 29°C (85°F), use ACI Hot-Weather Application Guidelines.

SURFIX™ HI-BUILD dries to a light gray color. Variations in the final color can occur due to changes in temperature, humidity and other jobsite conditions.

Penetron Hellas S.A. recommends installing a test area, ensuring suitability of SURFIX™ HI-BUILD for its intended use.

Substrate must have a minimum direct tensile bond test reading of 1 MPa (150 psi) per ASTM C1583-04.

Penetron Hellas S.A. recommends that, when our products are used in any application or as part of any system that includes other manufacturers' products, the installer and/or design professional shall test all the system components collectively for compatibility, performance and long-term intended use in accordance with pertinent and accepted industry standards prior to any installation. Written documentation of the tests performed shall be satisfactory to the design professional and installer. Test results must include the means and methods of application, products used, project specific conditions being addressed, and standardized tests performed for each proposed system or variation.

APPROXIMATE COVERAGE (22,7 kg bag)

0,01 m³ (0,42 ft³) or approximately 0.47 m² (5 ft²) at 25 mm (1") thickness.

STORAGE / SHELF LIFE

12 months from the date of manufacture, when unopened bags are properly stored in a cool, dry place, unexposed to moisture and sunlight.

PACKAGING

22,7 kg (50 lb) bags.

SAFE HANDLING INFORMATION

This product contains Portland cement and is highly alkaline. The use of rubber gloves, goggles and other appropriate protective gear during mixing and application is recommended. Avoid contact with eyes and skin. In case of eye contact, rinse immediately with plenty of water and seek medical advice. For further information please refer to Safety Data Sheet. PENETRON HELLAS S.A. has recently updated Safety Data Sheet on the safe use of PENETRON® products. Each Safety Data Sheet contains health and safety information for the protection of your employees and your customers.

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