



Flow-Top HD

Cementitious Self-Leveling Industrial Overlayment

DESCRIPTION

Flow-Top HD is a stainable, industrial overlayment designed for resurfacing and leveling interior concrete. The new surface will accept foot traffic in 6 hours and light rubber wheel traffic in 24 hours. **Flow-Top HD** is a blend of portland cement, high performance polymers, selected aggregates and proprietary admixtures. **Flow-Top HD** can be applied from 1/4" to 1/2" in a single lift.

USES

Flow-Top HD is ideal for applying over the surface of existing interior concrete to produce a new wearing surface. Use to resurface and repair:

- Cracked or spalled concrete
- Rough or uneven surfaces that need leveling
- Warehouse or light industrial floors that are in need of renovation for a hard, level surface

BENEFITS

- Durable: Contains no gypsum
- Color: Excellent base color to receive stain
- Versatile: Rehabilitates, repairs, resurfaces
- Adhesion: Polymer modified for increased adhesion to concrete surfaces
- Consistent: Strict Quality Control testing and standards

SURFACE PREPARATION

All surfaces in contact with **Flow-Top HD** shall be free of dirt, oil, grease, laitance and other contaminants that may act as bond-breakers. All unsound concrete should be removed to ensure a good bond. Concrete must be a minimum of 28 days old prior to placing **Flow-Top HD**.

Mechanically prepare the surface by shotblasting or scarifying to match ICRI CSP#5 (1/8" depth). Acid etching or the use of solvents is not an acceptable means of cleaning the substrate. Concrete must be abraded in order to receive primer and underlayment. Take special care in preparing very smooth, highly power troweled concrete. These surfaces must be prepared properly or the underlayment may delaminate.

After cleaning and profiling, test for moisture vapor emission rate (MVER - Ref. ASTM F1869) and concrete substrate's relative humidity (RH - Ref. ASTM F2170). The requirements of the floor covering and floor adhesive manufacturers must be followed with respect to, but not limited to, levels of moisture. Low substrate temperatures and/or high ambient humidity will extend drying time.

Repair holes and nonmoving cracks prior to application. Tensile strengths of the substrate must be greater than 72 psi (.5 MPa) per ASTM C1583. Install a bondbreaker where vertical surfaces meet the newly placed **Flow-Top HD**, such as self-adhering thick foam tape or similar product. **Note:** It is the responsibility of the installer/applicator to ensure the suitability of the product for its intended use.

Prime the surface with **US SPEC Multi-55** at a rate of 500–600 ft²/gal when diluted 2:1 with clean, potable water. Apply

SURFACE PREPARATION (continued)

evenly with a soft push broom. Do not use paint rollers, mops or spray equipment. Coverage rate of **Multi-55** will vary depending on the porosity of the surface. Extremely absorbent concrete may require two applications of **Multi-55** to avoid the formation of "pinholes" in the underlayment. For this type of concrete, apply a first coat of **Multi-55** diluted 3:1 with water. Subsequent applications of **Multi-55** should be at the standard 2:1 ratio. Allow to dry to the touch before proceeding (2 to 4 hours). Protect primed substrate from foot traffic prior to installation. If applying lifts, prep and prime each lift with **Multi-55**. **Flow-Top HD** can be used over engineer approved wood subfloors including plywood, parquet and tongue and groove wood flooring with addition of metal lathe. Wood floors must be stable in order to provide a non-flexible surface. Fill joints and cracks to prevent seepage into undesired areas. Always apply a test area.

COVERAGE

One 50 lb (22.7 kg) bag will cover approximately 25 ft² at 1/4" thickness. Coverage may vary depending on porosity of surface.

MIXING

For best results, use a mechanical mixer with rotating blades or use a heavy duty 1/2" (15 mm) (or larger) low-speed, corded drill and mixing paddle #6 per ICRI Technical Guideline 320.5. Pre-wet mixer and empty excess water. Place 4.5 quarts of cool, clean potable water per 50 lb (22.7 kg) bag in mixer, then add dry material. Mix on low RPM for a total of 3 to 5 minutes until a homogeneous mixture is achieved. Mix only enough material that can be placed within working time. For placements greater than 1/2", **Flow-Top HD** must be extended 30%, by weight of powder, with clean, washed and dried 3/8" (1 cm) pea gravel. Add the aggregate during the last minute of mixing. Do not blend excess water as this will cause bleeding and segregation. Do not use any other admixtures or additives.

PLACING

Before application, close all doors, windows and HVAC vents to minimize air flow in the application area. Protect areas from direct sunlight. Pour or pump **Flow-Top HD** onto the primed substrate. Work into position with a long handled spreader, gauge rake and/or spiked roller. Immediately smooth the material with a "smoother". Wear spiked shoes to avoid leaving marks in the **Flow-Top HD**. The addition of aggregate will reduce the workability of the product and may make it necessary to install a neat coat to obtain a smooth surface. A second lift of non-extended material may be applied as soon as foot traffic can be supported. Profile or roughen subsequent lifts and re-prime with **Multi-55** to ensure a good bond.

STORAGE

Normal cement storage and handling practices should be observed. Store material in an interior, cool, dry place. Shelf life is one year in original, unopened container.

Packaging: 50 lb (22.7 kg) bag, 63 bags per pallet



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PHYSICAL PROPERTIES

All Physical Property testing performed in laboratory conditions of $73.5 \pm 3.5^{\circ}\text{F}$ ($23 \pm 2^{\circ}\text{C}$) and a relative humidity no less than 50% unless otherwise determined by the test method or specification. All results represent **Flow-Top HD** with 4.5 quarts water unless listed otherwise. Tests are conducted under standardized conditions for comparative purposes, and results may not be representative of performance under field conditions.

| Property and Test Method | Results | | | |
|-----------------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|
| Compressive Strength ASTM C109 | 4 Hours | 1 Day | 7 Days | 28 Days |
| | 2,000 psi (13.79 MPa) | 2,800 psi (19.31 MPa) | 3,200 psi (22.06 MPa) | 5,400 psi (37.23 MPa) |
| Rate of Set ASTM C1708 | Self Leveling/ Healing Time | Working Time | Initial | Final |
| | :15 | :20 | :30 | 1:30 |
| Flexural Strength ASTM C348 | 7 Days | | 28 Days | |
| | 1,100 psi (7.58 MPa) | | 1,300 psi (8.96 MPa) | |

LIMITATIONS

In addition to limitations already mentioned, please note the following. This product is for interior use only. Do not apply when the surface or ambient temperature is below 50°F (10°C) or expected to fall below 50°F (10°C) within 48 hours. Do not apply over surfaces that are frozen or contain frost. Do not apply over any active faults or cracks in the substrate without addressing any movement that may occur. Although crack repair is recommended prior to application, we cannot guarantee that cracks will not “telegraph” up through the overlayment. All moving joints, such as expansion joints, must be carried up through the new surface. Allow concrete to fully cure for 28 days before the use of this product. **Flow-Top HD** is not a resurfacing material for highways, streets, areas exposed to continuous traffic or industrial applications subject to hard or metal-wheeled traffic. Setting time will speed up in warm conditions and slow in cold conditions. **Flow-Top HD** makes an excellent base to receive concrete stains and sealers. As the performance of these systems varies greatly, it is essential that test areas be placed and evaluated to determine suitability prior to coating the entire area. In most cases, sealers can be applied 24 hours after the application of **Flow-Top HD**. **Note:** Most acid stains require 28 day curing time.

DANGER

This product contains Crystalline Silica (CAS# 14808-60-7) and Portland Cement (CAS# 65997-15-1). Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to organs through prolonged or repeated exposure. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust.



WARNING: Cancer and Reproductive Harm -

www.P65Warnings.ca.gov

FIRST AID

If swallowed: Immediately call a poison center/doctor. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

MANUFACTURER/TECHNICAL SERVICE

Contact your US SPEC manufacturer's representative for the most current product information. Always read and follow the warnings and instructions on the most current technical data sheets, available online at www.usspec.com.

US MIX Co.
112 South Santa Fe Drive
Denver, CO 80223
Tel: 303.778.7227 Fax: 303.722.8426
Web Site: www.usspec.com

NOTICE OF LIMITED WARRANTY US MIX Co. (manufacturer) warrants to buyer that this product at the time and place of shipment is of good quality and conforms to the manufacturer's specifications in force on the date of manufacture when used in accordance with the instructions hereon. Manufacturer cannot warrant or guarantee any particular method of use, application or performance of the product under any particular condition. This limited warranty cannot be extended or amended by manufacturer's sales people, distributors or representatives or by any sales information, specifications of anyone other than the manufacturer. Liability under this warranty is expressly limited to refund of the purchase price. See product packaging for complete limitation of warranties and liability.

Yield: 50 lb (22.7 kg) will fill approximately 0.43 ft³ when 4.5 quarts mixing water is used.