SILPRO

SilproRepair™ VOH

Structural Vertical and Overhead
Application Freeze/Thaw Resistant
Corrosion Inhibitor
Low Permeability
One-Component
Fiber Reinforced
Up to 4" Per Lift
Rapid-Setting

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SilproRepair™ VOH is a one-component, fiber reinforced, rapid-setting repair mortar for structural vertical and overhead applications. **SilproRepair™ VOH** is freeze/thaw resistant and contains an integral corrosion inhibitor. Due to its rapid-set, **SilproRepair™ VOH** can be placed and sculpted to proper shape in one application for thicknesses up to 4 inches.

Advantages

- High Bond
- Shrinkage Compensated
- Freeze/Thaw Resistant
- Corrosion Inhibitor
- One-Component
- Fiber-Reinforced
- Rapid-Setting

Test Data

Set Time at 70°F (21°C): ASTM C191/AASHTO T131	Initial	22 min.
	(45 min. for extended set version)	
	Final	35 min.
	(55 min. for extended set version)	
Length Change: ASTM C1090	1 day	0.13%
	3 days	0.17%
	7 days	0.18%
Compressive Strength: ASTM C109	3 hrs	4500 psi
	24 hrs	5880 psi
	7 days	7040 psi
	28 days	7920 psi
Flexural Strength: ASTM C348	1 day	1005 psi
	7 days	1085 psi
	28 days	1145 psi
Concrete Shrinkage: ASTM C157 (Modified ASTM C928)		
28 day air cure	-0.042%	
28 day water cure	0.002%	
Freeze/Thaw Durability: ASTM C666 Procedure A (300 cycles)	90.3	
Scaling Resistance: ASTM C672	1 rating; very slight scaling	
Modulus of Elasticity: ASTM C469	5.32×10^6 psi	
Chloride Ion Weight %: AASHTO T260	0.019%	
Sulfate Ion Content: AASHTO T105	3.80%	
Flex Bond Strength: NYSDOT 13P C4.6	715 psi	
Freeze/thaw Resistance Weight Loss: NYSDOT 13P C4.5	0.01%	

Test Data Continued

Slant Shear Bond Strength: ASTM C882 (Modified ASTM C928)	1 day	1998 psi
	7 day	2302 psi
Rapid Chloride Permeability: ASTM C1202/AASHTO T277	28 days	265 coulombs
Surface Resistivity: AASHTO T358	28 days	104.9 Ω
Direct Bond Strength: ASTM C1583	28 days	234 psi

Surface Preparation

Concrete substrate shall be structurally sound and clean. Remove all deteriorated concrete, dirt, grease, oil, coatings, efflorescence, etc., by acceptable mechanical means. Saw cut and under cut edges whenever possible. When rusted rebar is exposed in the process of removing old material, prepare it according to ACI recommendations or as follows: Remove sufficient material from behind the rebar to allow access to clean it completely, typically a minimum of one inch. Remove the rust, cleaning to bare metal.

Apply a Test Patch

To confirm the suitability of the surface for adhesion of the coating, and that the final appearance and function will be as the owner, architect, and contractor expect, install a test patch at the maximum designed thickness anticipated on the project and subject it to anticipated service conditions before beginning the entire job.

Surface Conditioning

Surface shall be Saturated, Surface Dry (SSD). The best way to achieve this condition is to saturate or soak the surface with water the day before or for two hours immediately before applying **SilproRepair™ VOH**. Just before applying **SilproRepair™ VOH**, spray with clean potable water. If a mist of water sprayed on the surface runs down immediately, i.e., no water is absorbed, the surface may be assumed to be in a Saturated, Surface Dry (SSD) condition.

Priming

Slurry Coat: Make a cement slurry by mixing water into **SilproRepair™ VOH** powder. Mix until free of lumps. If mixing with a drill, do not over mix as that may entrap air. A properly proportioned slurry is the consistency of a thick milk shake. Using a stiff brush, scrub this slurry into the surface of the area that will receive the **SilproRepair™ VOH**. Place the **SilproRepair™ VOH** before the slurry dries (10-20 minutes depending upon conditions).

Mixing

Mixing Proportions: Use 3.5 quarts of clean, potable water per 50lb. bag of **SilproRepair™ VOH**. Mechanical mixing is preferred for best results. Use a slow speed 1/2 inch drill (500 - 650 rpm) and a paddle (like that used for joint compound or plaster). We suggest mixing 1/2 bag or less at one time.

Place all water in a clean mixing container. Add ¾ of the powder then mix until uniform. Add remainder of powder and continue to mix. **SilproRepair™ VOH** may seem too dry at first but continue mixing for 1 to 1 1/2 minutes. Mix until a smooth uniform consistency is obtained. The **SilproRepair™ VOH** mix should be putty-like. **Note:** Do not mix longer than 4 minutes. Do not mix more material than can be placed in 15 minutes.

Application

Apply a "tight" coat of **SilproRepair™ VOH** to the primed surface using a trowel, rubber float, or gloved hands to force **SilproRepair™ VOH** into all crevices, cracks, and edges so all air pockets will be eliminated to provide complete contact for a good bond. Apply material from the same batch to build out as much as four (4) inches thick (max 2 inches thick per lift for overhead applications. Avoid multiple lifts exceeding 8 inches). Minimum thickness is 1/8".

All surfaces of **SilproRepair™ VOH** that will receive subsequent lifts of **SilproRepair™ VOH** should be left rough so as to provide a good mechanical bond. When applying multiple lifts, a second lift can be applied in as little as 30 minutes if the lifts are 1" thick or less. If the lifts exceed 1" in thickness, damp cure the first lift overnight.

If placing more than 1" depth you may add 15lbs of clean peastone (maximum size 3/8") per bag. Prior to applying subsequent lifts over material that has been in place more than 1 hour, prime the surface with a slurry coat of **SilproRepair™ VOH** and water. Apply the additional lift (up to 4" for vertical, 2" for overhead) the next day.

If material has begun to set prior to placing, discard it. Do not retemper. Finish final layer with steel trowel or sponge float. **SilproRepair™ VOH** can be sculpted for proper profile.

Curing

Under Ordinary Conditions: Beginning as soon as the patch has set, keep surface continuously moist for 5 days using burlap, fine mist, or equivalent.

If damp curing for 5 days is not possible, damp cure for 3 hours then coat with an approved water-based curing compound or Silpro **C-21 All Acrylic®**.

Under Adverse Conditions: If you have hot weather and rapid drying conditions including one or more of the following:

Curing Continued

1. When the temperature of the air, the surface being worked on, or the material being used is above 90°F;

2. When air is flowing frequently or continuously at greater than 5 mph;

3. When relative humidity is low; then
- Store materials where they will remain cool.
- Use cool water for mixing
- Add ice to the mixing water if necessary.

Immediately after application, i.e., as soon as the patch feels warm to the touch, looks dry, and feels hard, saturate the surface with clean, potable water being careful not to erode the surface with water pressure.

Apply water until it runs down the whole face (for vertical surfaces) or until freshly sprayed surfaces continue to look and feel wet for 2 minutes (for overhead surfaces). Continue this curing for at least 3 hours.

Package Size

50# Plastic lined bag (22.68 kg.)

Yield

0.46 cubic Feet Per Bag

Shelf Life

1 Year

Limitations

- **SilproRepair™ VOH** should be applied only when the temperature of the air, surface, and material is above 50°F (10°C).

Caution!

Contains Portland cement. Irritating to eyes and skin. Product is alkaline upon contact with water. During mixing and application avoid contact with eyes. In case of such contact, flood eyes with water and CALL PHYSICIAN. Avoid prolonged contact with skin. Use of gloves is recommended. Wash hands thoroughly after use and before smoking or eating. Do not take internally.

See Material Safety Data Sheet for detailed information.

FOR COMMERCIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. NOT FOR INTERNAL CONSUMPTION.

Dispose of in accordance with local, state, or federal regulations. In case of a medical emergency or for information regarding spillage clean up or disposal call **INFOTRAC: 800-535-5053**.

Guarantee

Please call Silpro LLC for copy of guarantee.

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