

SILPRO

VO PATCH

Up to 2" Thick Per Lift
 Polymer-Modified
 Corrosion Inhibitor
 Vertical and Overhead Application
 Fast-Setting Patch and Repair Mortar

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Silpro **VO Patch** is a one-component, Portland cement-based, material used to restore and repair vertical and overhead concrete and masonry surfaces.

Its fast set and density allow **VO Patch** to be placed and sculpted to proper shape in one application for thicknesses up to 2 inches.

VO Patch is polymer-modified to produce a superior bond, and improved tensile and flexural strength.

BENEFITS

- High bond
- Fast, controlled set
- Reduced shrinkage
- High strength
- Water resistant
- Thermally compatible with concrete and masonry
- One-component
- Integrated corrosion inhibitor

TEST DATA

Working Time at 70° F (21°C)

15 Minutes

Set Time at 70° F (21°C)

ASTM C-191

20 Minutes – Initial

30 Minutes – Final

Compressive Strength

ASTM C-928

3 Hour

3340 psi

1 Day

4885 psi

7 Day

5845 psi

28 Day

6500 psi

Length Change

ASTM C-157

7 Day Expansion (Water Cure)

+ 0.016%

28 Day Expansion (Water Cure)

+ 0.019%

7 Day Expansion (Air Cure)

- 0.130%

28 Day Expansion (Air Cure)

- 0.144%

Shear Bond

ASTM C-882

1 Day

1035 psi

7 Day

1650 psi

Flexural Strength

ASTM C-348

1 Day

1142 psi

28 Day

1180 psi

Freeze/Thaw Resistance

ASTM C-666 Method "B"

After 300 cycles

1% loss due to slight scaling
 no spalling

TEST DATA CONTINUED

Average Scaling Resistance (when exposed to de-ice chemicals)
 ASTM C-672-98

No. of cycles	Rating	Condition of Surface
25	0	No visible Scaling

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 **VO Patch**.

Just before applying **VO Patch**, 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

Preferred Method — Slurry Coat: Make a cement slurry by mixing approximately 4 gallons of Silpro **C-21 All Acrylic** into 1 bag (94 pounds) of Portland cement. Mix until free of lumps. If mixing with a drill, do not over mix as that may entrap air. Let stand 10 minutes and remix (for 15 seconds if using a drill).

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 **VO Patch**. Place the **VO Patch** before the slurry dries (10-20 minutes depending upon conditions).

Alternative Method: Apply Silpro **Weld-O-Bond** Bonding Agent. **VO Patch** may be applied as soon as bonding agent has become tacky or after it has dried.

MIXING

Mixing Proportions: Use 4 - 5 quarts of clean, potable water per 50# bag of **VO Patch**. **Do not add more than 5 quarts of water.**

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 3/4 of the powder then mix until uniform. Add remainder of powder and continue to mix. **VO Patch** may seem too dry at first but continue mixing for 1 to 1 1/2 minutes before adding more water.

Mix until a smooth uniform consistency is obtained. The **VO Patch** 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.

APPLYING

Apply a "tight" coat of **VO Patch** to the primed surface using a trowel, rubber float, or gloved hands to force **VO Patch** into all crevices, cracks, and edges so all air pockets will be eliminated to provide complete contact for a good bond. Apply material from same batch to build out as much as two (2) inches thick.

Minimum thickness is 1/8". For best results apply at thicknesses between 1/8" and 1". All surfaces of **VO Patch** that will receive subsequent layers of **VO Patch** should be left rough so as to provide a good mechanical bond.

Two layers of 1" or less may be applied after as little as 30 minutes curing.

For applications greater than 2" thick, place one or two layers totaling not more than 2" thick, leave surface rough, then damp cure overnight. The next day, apply an additional layer totaling not more than 2".

If placing more than 1" depth you may add 15 lbs of clean peastone (maximum size 3/8") per bag.

Prior to applying subsequent layers over material that has been in place more than 1 hour, prime the surface with **Weld-O-Bond**.

If material has begun to set prior to placing, discard it. **Do not retemper.**

Finish final layer with steel trowel or sponge float. Can be sculpted for proper profile as **VO Patch** sets.

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.

CURING (CONT.)

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**:

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.)

APPROXIMATE COVERAGE

Per 50# bag:

1/2 cu. ft. will cover 13 sq. ft. at 1/2" thickness

SHELF LIFE

6 Months

LIMITATION

VO Patch 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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