

**VOH Patch** is a single component, portland cement based, polymer modified material designed to repair and rehabilitate vertical and overhead concrete and masonry surfaces without the need for costly form work. The fast setting, low shrinkage, non-sag, and high strength of **VOH Patch** allow it to be placed and sculpted to final shape in a single application up to 2" in thickness.

## APPLICATION INSTRUCTIONS

**USE:** Structural repairs in vertical and overhead surfaces, fast repair of bridges, pilings and buildings, rebuild cornices and ornate precast without forming, repair piers, tunnels, precast concrete panels and concrete pipes

**FEATURES:** High polymer modification provides tenacious bond, fast setting, 10-20 minute initial set, apply from feather edge up to 2" in single application, self-curing, non-shrink, Free of chloride, gypsum, freeze-thaw resistant, no bonding agent or additives required.

**PREPARATION:** The concrete must be sound and free of all foreign material, including oil, grease, dust, laitance or other surface contaminants.

Square edges by saw cutting the perimeter of the repair 1/8" deeper than the depth of the repair, creating a notched, reinforced edge for maximum durability. Mechanically abrade the surface by grinding, abrasive blasting, or water blasting. All concrete of poor quality that is in contact with reinforcing steel should be removed. Remove rust from exposed reinforcing steel by brushing or sandblasting.

Apply CMAX Rust-Check permanent rust converter to the exposed steel prior to repairing with VOH Patch.

Have all necessary tools and materials as near work areas as possible to permit rapid and continuous placement of VOH Patch. All surfaces to be repaired should be in a saturated surface-dry (SSD) condition with no standing water on the surface.

## PHYSICAL PERFORMANCE

Compressive Strength	ASTM C109	
3 hours	2100 psi	(14.5 MPa)
1 day	4265 psi	(29.4 MPa)
7 days	5250 psi	(36.2 MPa)
28 days	7025 psi	(48.4 MPa)
Flexural Strength	ASTM C348	
1 day	650 psi	(4.5 MPa)
7 days	1050 psi	(7.2 MPa)
28 days	1280 psi	(8.8 MPa)
Shear Bond Strength	ASTM C348	0.05%
7 days	1140 psi	(7.9 MPa)
14 days	1645 psi	(11.3 MPa)
Shrinkage	ASTM C157	
28 days	-0.045%	
Freeze Thaw (ASTM C666)	50 cycles	Excellent
Initial Set	50 min	
Final Set	90 min	

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LEED Eligibility for Regional Materials (MR-c5) and Recycled Content (MR-c4)

**MIXING:** Mix 6.25 to 6.75 pints of clean potable water per 50 pounds of VOH Patch using either a pail mixer "or" a ½ + hp heavy-duty drill with a mortar paddle. Mix until completely blended and free of lumps. Do not over mix.

When using a power mixer to blend material use a slow speed high torque drill at no more than 500-650 RPM. ALWAYS add material to water when using a bucket or mortar mixer, but add water to material if hand mixing smaller batches.

**DEEP APPLICATIONS:** For repair applications over 2", VOH Patch can be extended with clean, 3/8" aggregate up to 50% by weight (25lbs) and mixed an additional 2 minutes. Choose a clean (free of organic material) well-graded 3/8" aggregate. Aggregate should be pre-dampened prior to mixing with VOH Patch. The total mixing water for the batch shall be reduced by the amount of free water found in the aggregate. This extension will add approx. 0.18 cubic foot to the unit yield and should be placed within 15-20 minutes.

**PLACEMENT:** Trowel onto surface immediately. Vertical or overhead patches greater than 2" in depth may need to be built up in successive layers. If layering deep patches, scratch surface of each layer. Allow previous layer to tighten (5- 10 minutes) before building another layer. Mist first layer before applying second. Overfill patch and shave to shape. VOH Patch can be shaved with a trowel for up to 1 hour after initial set. Try to avoid overworking a patch. Finish with a damp sponge, brush or steel trowel.

**DRY TO USE:** Finish the repair material to the desired texture to best match the surrounding concrete. Do not add additional water to the surface during finishing.

**CLEAN UP:** Tools and equipment can be cleaned with water before the VOH hardens.

**PACKAGING:** Available in 50lb. Multi-wall bags

**COLOR:** Light Gray

**STORAGE:** Store in a cool, dry area away from direct sunlight.

**SHELF LIFE:** Shelf life of unopened bags stored in a dry facility is approximately 12 months. Excessive temperature differential and/ or high humidity can shorten the shelf life expectancy.

**LIMITATIONS:** Product is temperature sensitive regarding set time; below 60°F (15.4°C) set is slower, above 80°F set is faster. In hot weather, above 95°F (35°C) cool surface to be patched with cold water and use cold water for mixing. Do not apply VOH Patch when dry product or surface temperature is below 40° F. (4.4° C) Do not use "antifreeze" or set accelerator solutions. Do not add any concrete additives, primers, or bonders. Protect from precipitation and freezing for at least 4 hours.

**CAUTION:** Contains portland cement CAS # 65997 -15-1. Freshly mixed cement products may cause skin injury. Avoid contact with skin where possible and wash exposed areas promptly with water. If any product gets into the eye, rinse immediately and repeatedly with water. If ingested, do not induce vomiting and get prompt medical attention. Also contains sand CAS # 14808-60-7. Avoid breathing dust. Prolonged exposure to dust may cause delayed lung injury (silicosis) or cancer IARC Class 2A. Wear NIOSH approved mask for silica dust. Keep out of reach of children.

**IMPORTANT NOTE:** While all reasonable care is taken in compiling technical data on the Company's products, all recommendations or suggestions regarding the use of such products are made without guarantee, since the conditions of use are beyond the control of the Company. It is the user's responsibility to satisfy himself that each product is fit for the purpose for which he intends to use it, that the actual conditions of use are suitable, and that the information relating to each product has not been altered or superseded.

**WARRANTY:** Due to the use of this product beyond our control, we assume no liability for damages of any kind, and the user accepts the product "as is" and without warranties, expressed or implied, from either CMAX or its agents. The suitability of the product for an intended use shall be solely up to the user. Our only obligation shall be to replace or pay for any material proved defective, with our liability limited to the purchase price of materials supplied by us.

**PROPOSITION 65 WARNING:** This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.



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