



POLY-TUFF SYSTEMS  
INTERNATIONAL  
HIGHWAY DIVISION

# TuffPatch™ VOH

## Fast Setting, Non-Sag, Vertical & Overhead Repair Mortar

### DESCRIPTION

**TuffPatch™ VOH is a single component, fiber reinforced, 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 TuffPatch™ VOH allow it to be placed and sculpted to final shape in a single application up to 2" in thickness.**

### USES:

- 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

### TECHNICAL DATA:

Meets ASTM C-928 for dry packaged rapid hardening cementitious materials for concrete repairs.

### COVERAGE:

Approx: 20 sq.ft @ 1/4"

Yield: .42 cf / 50 lbs.

Yield Extended: .6 cf with 25 lbs. 3/8" gravel

### 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 waterblasting. 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 PSI RustCheck permanent rust converter to the exposed steel, prior to repairing with **TuffPatch™ VOH**. Have all necessary tools and materials as near work areas as possible to permit rapid and continuous placement of **TuffPatch™ VOH**. All surfaces to be

repaired should be in a saturated surface-dry (SSD) condition with no standing water on the surface.

### MIXING:

Mix 6.25 to 6.75 pints of clean potable water per 50 pounds of **TuffPatch™ VOH** using either the PSI Rapid Pail Mixer "or" a 1/2+ hp heavy-duty drill with the PSI Mortar Paddle utilizing the PSI Easy Stand. 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", **TuffPatch™ VOH** can be extended with clean, 3/8" aggregate up to 50% by weight (25 lbs.) and mixed an additional 2 min. Choose a clean (free of organic material) well-graded 3/8" aggregate. Aggregate should be pre-dampened prior to mixing with **TuffPatch™ VOH**. 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 cu-ft to the unit yield and should be placed within 15-20 min.

**Placement:** Trowel on 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. **TuffPatch™ VOH** 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. Lightly spray ER-AID as a finishing aid on this and any other polymer modified mortars to assist in finishing. **TuffPatch™ VOH** is self-curing under most conditions. In severe drying conditions, use **PSI ClearCure™ WB** curing compound.

**CLEAN UP:**

Tools and equipment can be cleaned with water before **TuffPatch™ VOH** hardens.

**PACKAGING:**

Available in 50 pound multi-wall paper 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 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 set is slower, above 80°F set is faster. In hot weather, cool surface to be patched with cold water and use cold water for mixing. Do not apply **TuffPatch™ VOH** when dry product or surface temperature is below 40°F. 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 and 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 con-

ditions 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 **PolyTuff Systems International** 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.

**PHYSICALS:**

## Compressive Strength (ASTM C-109)

3 Hours	2100 psi
1 day	4265 psi
7 days	5250 psi
28 days	7025 psi

## Flexural Strength (ASTM C-348)

1 day	650 psi
7 days	1050 psi
28 days	1280 psi

## Shear Bond Strength (ASTM C-882)

7 days	1140 psi
14 days	1645 psi

## Shrinkage (ASTM C-157) 28 days

	-0.045%
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## Freeze Thaw (ASTM C-666) 50 cycles

	Excellent
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## Initial Set

	50 min
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## Final Set

	90 min
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Please read all information in the General & Safety Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. PSI Products are for "Professional Use Only" and preferably applied by professionals who have prior experience with the PSI Products or have undergone training in application of PSI Products. Published technical data and instructions are subject to change without notice. Contact your local PSI representative or visit our website for current technical data, instructions, and project specific recommendations.

**LIMITED WARRANTY**

PSI warrants its products to be free of manufacturing defects and that they will meet PSI current published physical properties. PSI warrants that its products, when properly installed by a state licensed waterproofing contractor according to PSI guide specifications and product data sheets over a sound, properly prepared substrate, will not allow water migration for a period of 12 months. Seller's sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties by PSI of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. PSI shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. PSI shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. PSI reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

**DISCLAIMER**

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the users responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and PSI makes no claim that these tests or any other tests, accurately represent all environments.