1. PRODUCT NAME
MVIS™ Hi-Bond Veneer Mortar

2. MANUFACTURER
LATICRETE International, Inc.
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Bethany, CT 06524-3423 USA
Telephone: +1.203.393.0010, ext. 235
Toll Free: 1.800.243.4788, ext. 235
Fax: +1.203.393.1684
Internet: www.laticrete.com

3. PRODUCT DESCRIPTION
The ultimate, polymer fortified, thin-set mortar for interior and exterior installation of masonry veneer, stone, ceramic tile, quarry tile, pavers and thin brick. MVIS Hi-Bond Veneer Mortar, designed to mix just with water, has a long open time with unsurpassed adhesion and workability.

Uses
Excellent for interior, exterior and submerged applications as well as providing superior bond to exterior glue plywood (interior only) and concrete. The ultimate thin-set for masonry veneer.

Advantages
- Ultimate adhesion for masonry veneer
- Incredible bond to exterior glue plywood* and concrete
- Excellent shear bond strength
- High performing, smooth and creamy formula
- Contains Microban® antimicrobial protection to inhibit the growth of stain causing mold and mildew in the substrate
- Exceeds ANSI A118.4, ANSI A118.11 and ANSI A118.15
- Exceeds ASTM C270 compressive strength requirements for masonry veneer installations
- Passes IBC and IRC shear bond strength code requirements for adhered masonry veneer when tested in accordance with ASTM C482
- Conforms to ISO 13007-1 with a classification of C2TES1P1
- LATICRETE® 25 Year System Warranty (United States and Canada) for masonry veneer installations over concrete and masonry substrates**

* Interior Only.
** When used as a component of the LATICRETE® 25 Year System Warranty (United States and Canada) (DS 025.0)

Suitable Substrates
- Exterior Glue Plywood*
- Cement Terrazzo
- Concrete
- Cement Backer Boards^^
- Gypsum Wallboard*
- Concrete Block
- CMU
- Cement Mortar
- Existing Ceramic Tile And Stone
- Gypsum Plaster^

* Interior use only.
^^ Consult cement backer board manufacturer for specific installation recommendations and to verify acceptability for exterior use.

Packaging
50 lb bag (22.7 kg); 54 bags per pallet

Color
Grey

Approximate Coverage

<table>
<thead>
<tr>
<th>Vertical Applications</th>
<th>Ft²</th>
<th>M²</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; x 3/8&quot; (6 mm x 9 mm) Notched Trowel</td>
<td>60-70</td>
<td>5.6-6.5</td>
</tr>
<tr>
<td>1/2&quot; x 1/2&quot; (12 mm x 12 mm) Notched Trowel</td>
<td>40-45</td>
<td>3.7-4.2</td>
</tr>
<tr>
<td>Adhered Masonry Veneer Application Method</td>
<td>30-33</td>
<td>2.8-3.1</td>
</tr>
</tbody>
</table>

Coverage will vary depending on trowel notch size, type and size of tile/stone and substrate.

Shelf Life
Factory sealed containers of this product are guaranteed to be of first quality for two (2) years*** if stored off the ground in a dry area.

*** High humidity will reduce the shelf life of bagged product.

Limitations
- Mastics, adhesive mortars and pointing mortars for masonry veneer, stone, ceramic tile, pavers and thin brick are not replacements for waterproofing membranes or air and water barriers. When a waterproofing membrane or air and water barrier is required, use Air & Water Barrier (see Section 10 Filming Systems).
- For veneer installations using this product, consult local building code requirements regarding limitations and installation system specifications.
- Not for use directly over particle board, luan, Masonite® or hardwood floors.
- Use LATAPOXY® 300 Adhesive for installing green marble, resin backed, or water sensitive tile, stone and agglomerates (refer to DS 633.0 for more information).
Note: Surfaces must be structurally sound, stable and rigid enough to support ceramic/stone tile, thin brick and similar finishes. For exterior vertical installations over framed construction, the substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/600 where L=span length (except where local building codes specify more stringent deflection requirements).

Cautions
Consult SDS for more safety information.
- Some stone have low flexural strength and may not be suitable for all installations.
- Protect finished work from traffic until fully cured.
- Contains portland cement and silica sand. May irritate eyes and skin. Avoid contact with eyes or prolonged contact with skin. In case of contact, flush thoroughly with water.
- DO NOT take internally. Silica sand may cause cancer or serious lung problems. Avoid breathing dust. Wear a respirator in dusty areas.
- For white and light-colored stones, conduct test area to ensure no shadowing or staining is observed.
- Keep out of reach of children.

4. TECHNICAL DATA

VOC/LEED Product Information

This product has been certified for Low Chemical Emissions (ULCOM/GG UL2818) under the UL GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes and Furnishings (UL 2818 Standard) by UL Environment.

Total VOC Content pounds/gallon (grams/liter) of product in unused form is 0.00 lb/gal (0.00 g/L).
This product has a cradle-to-gate (with options) Product-Specific (Type III) Environmental Product Declaration. The PCR review, life cycle assessment and declaration were independently verified by UL Environment in accordance with ISO 14025, ISO 14040 and ISO 14044.

Applicable Standards
ASTM C270, ASTM C482. ANSI A118.4, ANSI 118.11, ANSI A118.15, ISO 13007-1

Physical Properties

<table>
<thead>
<tr>
<th>Test</th>
<th>Test Method</th>
<th>Specification</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 Day Cure</td>
<td>ANSI A118.15</td>
<td>&gt;400 psi (2.76 MPa)</td>
<td>475–520 psi (3.2–3.6 MPa)</td>
</tr>
<tr>
<td>Quarry Tile</td>
<td>7.2.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitreous Tile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shear Strength</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bonded To Plywood</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adhesive Strength</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Day Cure</td>
<td>ANSI A118.15</td>
<td>&gt;200 psi (1.38 MPa)</td>
<td>275–300 psi (2.0–3.6 MPa)</td>
</tr>
<tr>
<td>Vitreous Tile</td>
<td>7.2.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shear Bond</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitreous Tile</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Immersion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Day Compressive Strength</td>
<td>ASTM C270</td>
<td>2000 psi (13.8 MPa)</td>
<td>2400–2450 psi (16.5–16.9 MPa)</td>
</tr>
<tr>
<td>ASTM C270</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Day Bond</td>
<td>ASTM C482</td>
<td>N/A</td>
<td>230–260 psi (1.6–1.8 MPa)</td>
</tr>
<tr>
<td>Strength</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Calcium Silicate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28 Day Cycle</td>
<td>ASTM C482</td>
<td>N/A</td>
<td>230–260 psi (1.6–1.8 MPa)</td>
</tr>
<tr>
<td>Freeze/Thaw</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bond Strength</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>To Calcium Silicate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Day Cure 21</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>2.3 – 2.6 MPa (333–377 psi)</td>
</tr>
<tr>
<td>Day Water</td>
<td>2.4.4.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immersion 25</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>1.3–1.5 MPa (188–218 psi)</td>
</tr>
<tr>
<td>Day Heat Age</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>2.4–3.0 MPa (348–435 psi)</td>
</tr>
<tr>
<td>Plywood Shear</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>1.2–1.4 MPa (174–200 psi)</td>
</tr>
<tr>
<td>Adhesive Strength</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>1.2–1.4 MPa (174–200 psi)</td>
</tr>
<tr>
<td>28 Day Cure 20</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>1.2–1.4 MPa (174–200 psi)</td>
</tr>
<tr>
<td>Cycle Freeze/Thaw</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>1.2–1.4 MPa (174–200 psi)</td>
</tr>
<tr>
<td>Bond Strength</td>
<td>ISO 13007</td>
<td>1 MPa (145 psi)</td>
<td>1.2–1.4 MPa (174–200 psi)</td>
</tr>
<tr>
<td>28 Day Compressive Strength</td>
<td>ASTM C270</td>
<td>2000 psi (13.8 MPa)</td>
<td>2400–2450 psi (16.5–16.9 MPa)</td>
</tr>
</tbody>
</table>

MVIS™ Hi-Bond Veneer Mortar is ISO 13007-1 C2TES1

Working Properties

<table>
<thead>
<tr>
<th>Test</th>
<th>Specification</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Time After 30 Minutes</td>
<td>ISO 13007</td>
<td>0.5 MPa (73 psi)</td>
</tr>
<tr>
<td>Slip</td>
<td>ISO 13007</td>
<td>Less than or equal to 0.5 mm (0.02 inches)</td>
</tr>
<tr>
<td>Transverse</td>
<td>ISO 13007</td>
<td>Greater than or equal to 2.5 mm (0.1 in.) and less than 5 mm (0.2 in.)</td>
</tr>
<tr>
<td>Deformation</td>
<td>2.4.4.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.4.4.5</td>
<td></td>
</tr>
</tbody>
</table>

Specifications are subject to change without notification. Technical data shown in product data sheets are typical but reflect laboratory test procedures conducted in laboratory conditions. Actual field performance and test results will depend on installation methods and site conditions.

5. INSTALLATION

Surface Preparation
All surfaces should be between 40°F (4°C) and 90°F (32°C) and structurally sound, clean and free of all dirt, oil, grease, paint, concrete sealers or curing compounds. Rough or uneven concrete surfaces should be made smooth with MVIS™ Premium Mortar Bed. Dry, dusty concrete slabs or masonry should be dampened and

Data Sheets are subject to change without notice. For latest revision, visit www.laticrete.com. DS-246.0-0217
excess water swept off. Installation may be made on a damp surface. Concrete slabs must be plumb and true to within 1/4"(6 mm) in 10 ft (3 m).

1. Installer must verify that deflection under all live, dead and impact loads of substrates does not exceed industry standards of L/600 for AMSMV units or stone installations where L=span length. For exterior vertical installations over framed construction, the substrate deflection under all live, dead and impact loads, including concentrated loads, must not exceed L/600 where L=span length.

Note: MVIS Hi-Bond Veneer Mortar does not require a minimum cure time for concrete walls or slabs. Expansion joints shall be provided through the veneer from all construction or expansion joints in the substrate. For natural stone installations on floors follow ANSI specification A108.01-3.7 “Requirements for Movement Joints: Preparations by Other Trades” or TCNA detail EJ-171 “Movement Joints—Vertical & Horizontal”. Do not cover expansion joints with mortar.

Mixing
Place clean, potable water into a clean pail. Add MVIS Hi-Bond Veneer Mortar. Use approximately 5.5 gts (5.2 L) of water for 50 lb (22.7 kg) of powder. Mix by hand or with a slow speed mixer to a smooth, trowelable consistency. Allow mortar to slake for 5–10 minutes. Remix without adding any more water or powder. During use, stir occasionally to keep mix fluffy. DO NOT temper with water.

Note: For use as a slurry bond coat; mix 7 qts (6.6 ℓ) water to a 50 lb (22.7 kg) bag of MVIS Hi-Bond Veneer Mortar.

Application
See applicable LATICRETE details in Masonry Veneer Installation System Brochure (DS 002.8).

Note: If installing on sheathed wood or steel frame construction with wire lath, use MVIS Premium Mortar Bed for the wall render prior to installing applicable MVIS Air & Water Barrier or MVIS Hi-Bond Veneer Mortar.

If waterproofing is required, install MVIS Air & Water Barrier per instructions (see DS 663.0 and DS 663.5) to the substrate prior to installation of MVIS Hi-Bond Veneer Mortar.

For adhered stone, thin brick and manufactured stone masonry veneers installations, use a gauging trowel to key a thin coat of MVIS Hi-Bond Veneer Mortar to cover entire back of the veneer units. Spread additional mortar onto the back of the skim coated veneer sufficient to completely fill the space between the veneer and the substrate when compressed against the substrate. Press the mortar covered back of the veneer against the substrate at the desired final position. Slide the unit roughly 1 -1.5” (25-38mm) diagonally from the desired final position and back into the desired position while maintaining even pressure. This should be done in such a manner as to squeeze the mortar to fill the entire space between the veneer unit and the substrate, allowing excess mortar to extrude on all sides around the veneer unit. Clean excess extruded mortar with trowel and spread onto the next veneer unit to be installed.

Note: Prior to installation, ensure back of veneer units are clean of dust, laitance, loose concrete crumbs and any excess film that could impede bond.

Alternate method for thin brick, tile, calcium silicate unit and stone installations: key MVIS Hi-Bond Veneer Mortar into the substrate thoroughly. Then, comb on additional mortar with the notched side, use 1/4" x 3/8" (6 mm x 9 mm), 1/2" x 1/2" (12 mm x 12 mm) loop or notch trowel. Back butter all thin brick, veneer units 8" x 8" (200 mm x 200 mm), ½ (19mm) loop trowel or larger to provide full bedding of the veneer. Place veneer into the mortar and adjust to desired position. Clean any excess mortar on sides of stone or tile veneer.

Note: Use proper sized notched trowel to ensure full bedding of the stone veneer. Spread only enough mortar for maximum coverage with tile within 15–20 minutes. Trowel notch size determined by contractor, size of veneer and job-site coverage. Adjust as necessary. Check mortar for complete coverage by periodically removing veneer unit and inspecting the transfer onto substrate and back of the stone veneer. The size and weight of the veneer will vary... Due to job site conditions and differences in finish material types; ledger boards, shims, wedges or spacers may be required to maintain finish levels and heights.

Grouting/Pointing (if required)
When required, point installation after a minimum of 24 hours curing time at 70°F (21°C). Point with MVIS Epoxy Pointing Mortar (conduct test area to determine suitability and acceptability with veneer) MVIS Premium Pointing Mortar mixed with water or MVIS Pointing Mortar mixed with water.

Cleaning
Clean tools and stone work with water while mortar is fresh.

6. AVAILABILITY AND COST
Availability
LATICRETE® and LATAPOXY® materials are available worldwide.

For Distributor information:
Toll Free: 1.800.243.4788
Telephone: +1.203.393.0010
For on-line Distribution information, visit LATICRETE at www.laticrete.com.

Cost
Contact a LATICRETE/LATAPOXY Distributor in your area.

7. WARRANTY
See 10. FILING SYSTEM

A component of:

LATICRETE 15 Year System
Exterior Facades (United States and Canada)

LATICRETE 25 Year System

Warranty (United States and Canada)**

** When used as a component of the LATICRETE® 25 Year System Warranty (United States and Canada) (DS 025.0)

8. MAINTENANCE
Non-finish LATICRETE® and LATAPOXY® installation materials require no maintenance but installation performance and durability may depend on properly maintaining products supplied by other manufacturers.
9. TECHNICAL SERVICES
Technical Assistance
Information is available by calling the LATICRETE Technical Service Hotline:
  Toll Free: 1.800.243.4788, ext. 235
  Telephone: +1.203.393.0010, ext. 235
  Fax: +1.203.393.1948

Technical and Safety Literature
To acquire technical and safety literature, please visit our website at www.laticrete.com.

10. FILING SYSTEM
Additional product information is available on our website at www.laticrete.com. The following is a list of related documents:
- DS 230.13: LATICRETE Product Warranty
- DS 230.15: LATICRETE 15 Year System Warranty – For Steel or Wood Framed Exterior Facades (United States and Canada)
- DS 025.0: LATICRETE 25 Year System Warranty (United States and Canada)**
- DS 228.0: MVIS Pointing Mortar
- DS 273.0: MVIS Epoxy Pointing Mortar
- DS 274.0: MVIS Premium Pointing Mortar
- DS 633.0: LATAPOXY 300 Adhesive
- DS 661.0: Air & Water Barrier

** When used as a component of the LATICRETE® 25 Year System Warranty (United States and Canada) (DS 025.0)