



# Exterior Adhered Veneer

## Applications Using MVIS™ Products

### TDS 177

The installation of adhered veneers (natural cut stone, masonry veneers, thin brick, etc...) on exterior walls is gaining wider acceptance around the world. Masonry veneer systems are beautiful, practical and readily available for practically every type of building structure. Many restaurants, hotels, residences, bridges, and commercial buildings have an adhered veneers specified to provide the utmost in class, functionality and style.

To ensure that the veneer will perform as expected for the life of the building, it is essential that the structure is properly constructed to meet all relevant building codes, the substrate is properly prepared and that the highest quality installation materials and methods are used.

Adhered veneers are attractive and functional wall coverings, but it is the structural backup wall which does all of the work in resisting the various loads and forces placed on the system. Because the veneer is adhered directly to the backup wall, the veneer will respond to loads and forces in the same manner as the structural wall. Masonry veneers are relatively stiff in nature which is ideal when bonding to a poured concrete or concrete block backup wall. However, wood and steel framing are significantly more flexible than concrete, so designing and constructing a framed wall assembly requires that the system be made as rigid as possible. The wall may require that sheathing, a weather resistive barrier (WRB), either a suitable cement backer board or metal lath with a mortar bed/render, and a waterproofing membrane be installed prior to bonding the veneer system.

#### **Installation Over Poured Concrete or Concrete Block Structural Backup Wall**

##### Primary Method:

The concrete/concrete block wall must be clean and free of any dirt, dust, oil, grease, curing compounds, sealers, form release agents, or any other potential bond inhibiting material(s). If any contaminants are present, they must be removed. Curing compounds, sealers, form release agents or any other residual material which is bonded on or embedded in the substrate must be removed by water-blasting, shot blasting or other appropriate methods to remove all traces of the contaminant. If required, the concrete/concrete block wall can be waterproofed using Air & Water Barrier prior to application of the veneer.

If the concrete/concrete block wall requires an air barrier the MVIS Air & Water Barrier prior to application of the veneer. When the concrete/concrete block wall does not require an air barrier the MVIS WCI can be used.

##### Alternate Method: (for contaminated walls that are structurally sound)

If it is not possible or practical to remove any and all contaminants from the wall, then install metal lath complying with ANSI A108.02 3.6 (Metal Lath) and ASTM C847 "Standard Specification for Metal Lath", to the wall over a cleavage membrane complying with ANSI A108.02 3.7 and/or Weather Resistive Barrier (WRB) per code. Apply a scratch coat of the MVIS Lite Wall Float to the metal lath and allow it to dry. If necessary, install further scratch or brown coats to make the wall flush and true. Allow any subsequent coats of mortar to dry. Install MVIS Air & Water Barrier or the MVIS WCI to the dry mortar and allow to cure fully. This will help protect the lath and fasteners used to install the metal lath and help keep the bulk of the water from penetrating behind the system. NOTE: Interior installations in dry areas may not require a waterproofing membrane.

Once the wall has been properly prepared, the installation of the veneer can begin. Installation can begin at the top of the wall or at the bottom of the wall. In most cases, the corner pieces would be placed first prior to installation of the veneer in the “field”. If the installation begins at the bottom of the wall, use a straight edge and begin a minimum of 4” (100mm) above soil, or 2” (50mm) above concrete or asphalt to help prevent moisture from being absorbed from the ground. If the installation begins at the top of the wall, the mortar must be able to support the weight of the veneer without sagging until fully cured.

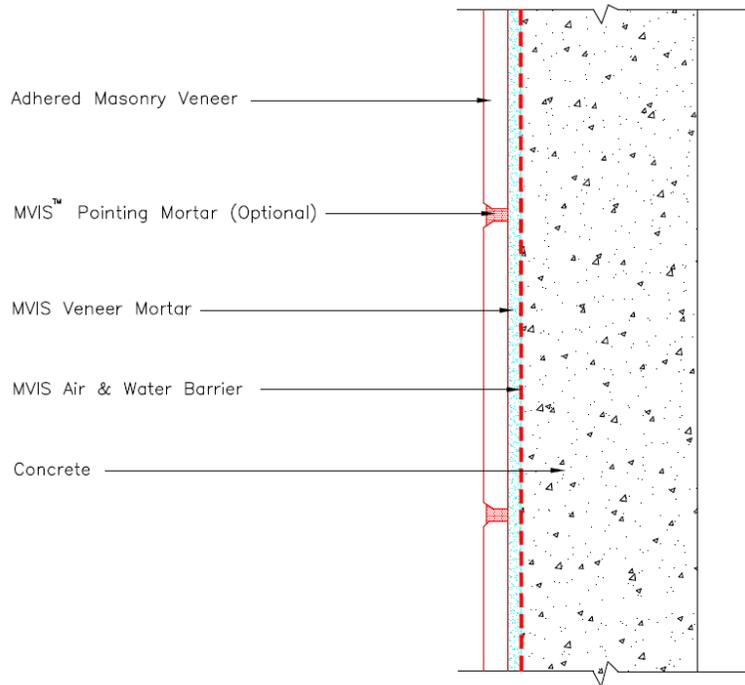
MVIS Veneer Mortar is an ideal choice as the adhesive for natural stone veneers as well as manufactured stone materials. MVIS Veneer Mortar is a patented, versatile polymer fortified mortar designed specifically for the installation of adhered manufactured stone masonry veneers (AMSMV), natural cut stone, and thin brick veneers. A high-performance mix provides maximum non-sag performance for vertical installations, and, also obtains maximum bond strength to the substrate and selected veneers. MVIS™ Veneer Mortar offers fiber reinforcement for added strength and exceptional workability.

Dampen the wall prior to adhesion of the veneer. This will help prevent moisture in the mortar from being absorbed into the wall too quickly. The wall should be damp not wet, and, frequently misting or dampening the area during installation is advised. Using the flat edge of a trowel, key the mortar into the substrate with firm pressure working in small areas (approximately 10 ft<sup>2</sup> [0.93 m<sup>2</sup>]) to ensure maximum coverage to the substrate. MVIS Veneer Mortar can be applied onto the back of each veneer unit, ensuring 100% coverage, or, using a notched trowel comb the MVIS Veneer Mortar onto the wall. Press the veneer unit into place and then tap with a rubber mallet to promote 100% coverage of adhesive to the veneer unit and to the substrate. Complete bedding of the mortar to both the veneer unit and the substrate is critical. Even small voids can collect water over time, which can lead to problems in the future.

Once the veneer installation is completely cured, MVIS Pointing Mortar can be installed using a grout bag and/or a pointing tool. Tooling the joint with a concave joint tool helps compress and smooth the joints for both aesthetic and functional reasons. The proper installation of the pointing mortar/grout helps the veneer installation to resist moisture penetration. Mortar joints should be well tooled and have no cracks or voids which would allow water to freely enter the veneer system. Brush away any mortar that may be on the surface after tooling the joints. If any type of chemical cleaning is required, it would be required to check with the manufacturer of the veneer and the manufacturer of the cleaners to determine acceptability and best practice so as not to damage the veneer.



Drawing No. MVIS E102



Note:  
Vapor Barrier, Air Barrier, Water Resistive Barrier, Waterproofing Membrane,  
Flashing and Insulation – Type/Location to be Determined by Design Professional.  
See full MVIS specification for additional design considerations.

Revision Date: 4/16

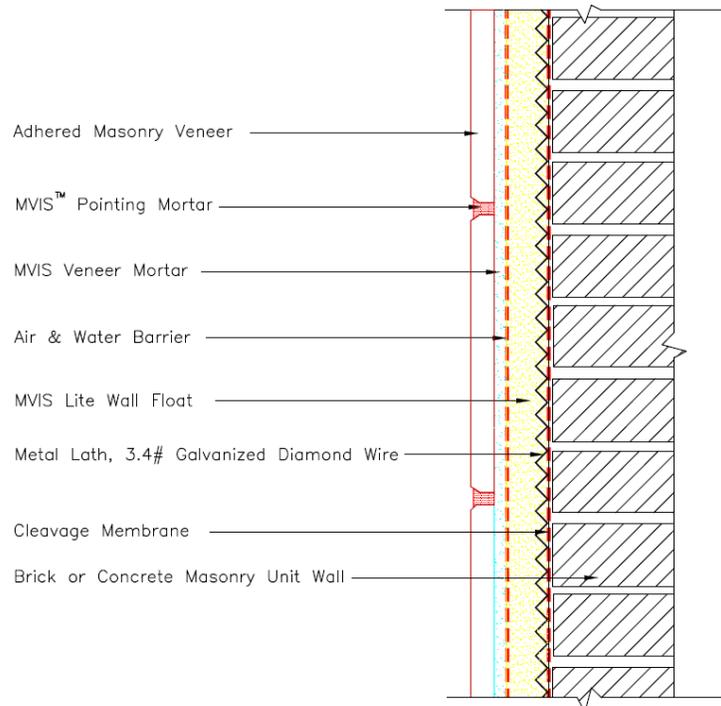
Scale: N.T.S.

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Drawing No. ES E104



NOTE:  
Vapor Barrier, Air Barrier, Water Resistant Barrier, Waterproofing Membrane  
Flashing and Insulation – Type/Location to be Determined by Design Professional.  
See full MVIS specification for additional design considerations.

Revision Date: 9/21 Scale: N.T.S.

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## **Installation Over Cement Backer Board Structural Backup Wall**

When a WRB is required behind Concrete Backer Unit:

As mentioned earlier, installation of veneers over a cement backer board wall requires that the wall be made as rigid as possible. In many cases a suitable sheathing is installed prior to the WRB and the cement backer board, which will help to increase the ability of the backup wall to properly support the veneer system. The cement backer board must be installed per board manufacturers' installation guidelines and local building code. Once the cement backer board has been installed and the joint mortar (i.e. MVIS™ Veneer Mortar and 4" (100mm) wide alkali resistant fiberglass mesh tape) is fully cured and dry, the board must be waterproofed using the MVIS WCI and allowed to cure. The waterproofing membrane will help protect the board fasteners from corrosion and also help prevent water from entering the structure through the penetrations.

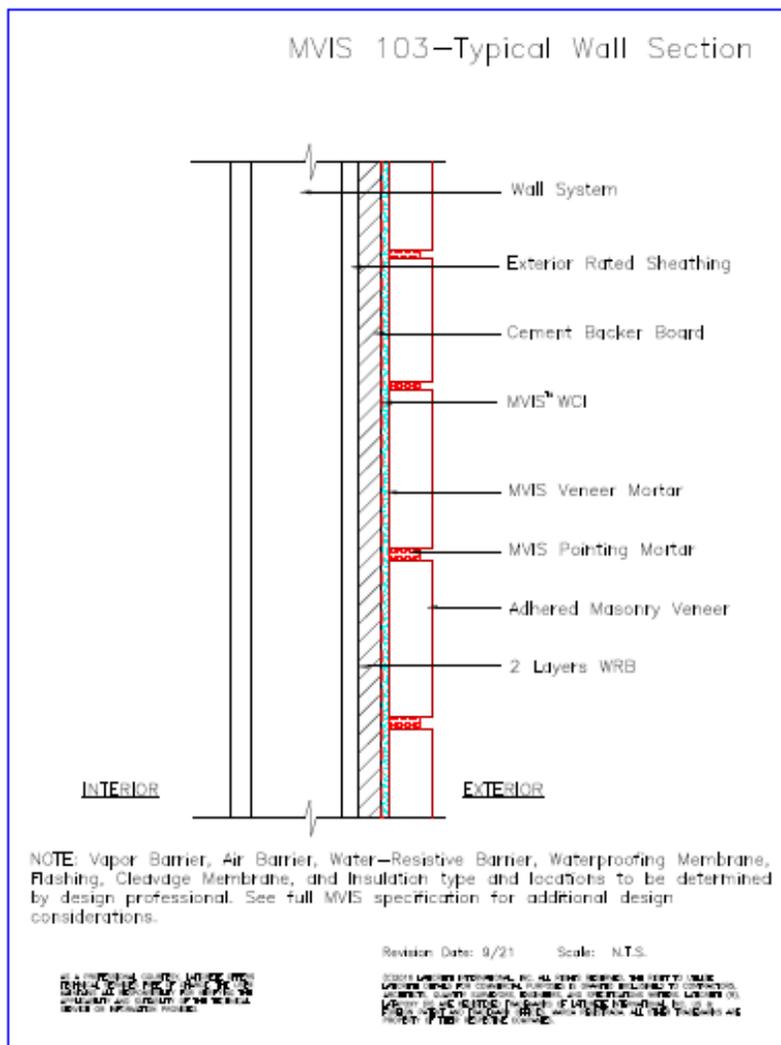
When Concrete Backer Unit is used with MVIS Air & Water Barrier outboard :

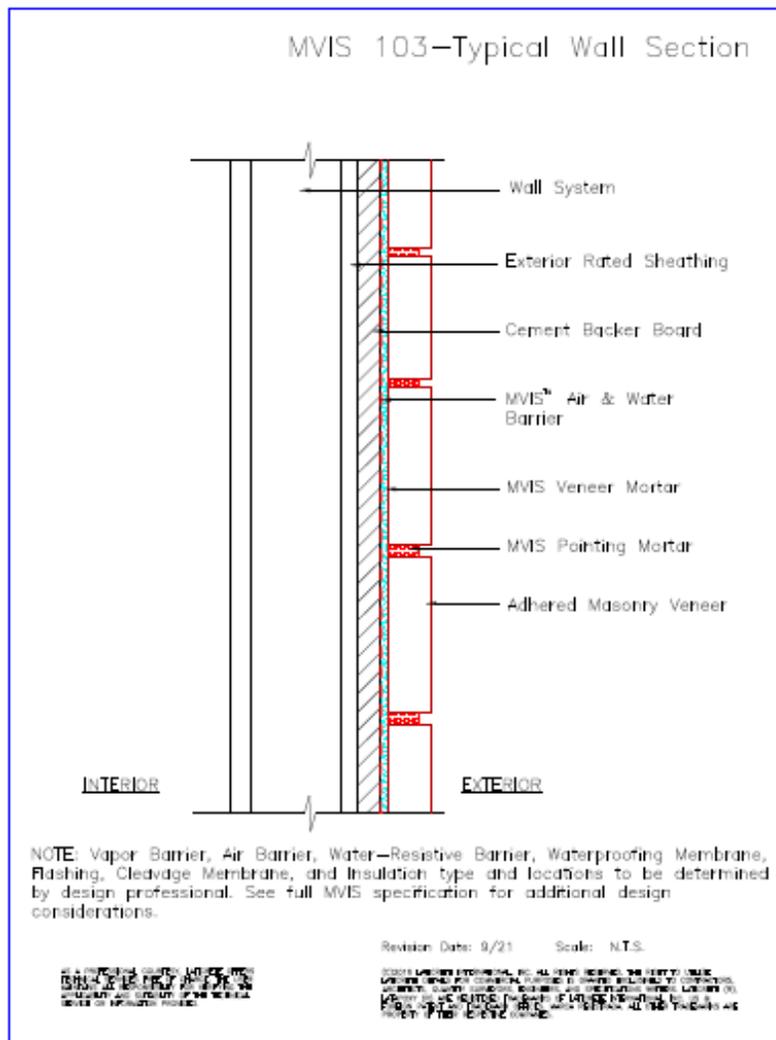
As mentioned earlier, installation of veneers over a cement backer board wall requires that the wall be made as rigid as possible. In many cases a suitable sheathing is installed prior to the cement backer board, which will help to increase the ability of the backup wall to properly support the veneer system. The cement backer board must be installed per board manufacturers' installation guidelines and local building code. Once the cement backer board has been installed and the joint mortar (i.e. MVIS™ Veneer Mortar and 4" (100mm) wide alkali resistant fiberglass mesh tape) is fully cured and dry. The board must be waterproofed using MVIS Air & Water Barrier and allowed to cure. The air barrier membrane will be detailed to all penetrations, windows, and doors, by design professional. NOTE: Interior installations in dry areas may not require a waterproofing membrane.

Once the wall has been properly prepared and membrane installed the installation of the veneer can begin. Installation can begin at the top of the wall or at the bottom of the wall. In most cases, the corner pieces would be placed first prior to installation of the veneer in the “field”. If the installation begins at the bottom of the wall, use a straight edge and begin a minimum of 4” (100mm) above soil, or 2” (50mm) above concrete or asphalt to help prevent moisture from being absorbed from the ground. If the installation begins at the top of the wall, the mortar must be able to support the weight of the veneer without sagging until fully cured.

Dampen the wall prior to adhering the veneer. This will help prevent moisture in the mortar from being absorbed into the wall too quickly. The wall should be damp not wet, and, frequently misting or dampening the area during installation is advised. Using the flat edge of a trowel, key the mortar into the substrate with firm pressure working in small areas (approximately 10 ft<sup>2</sup> [0.93 m<sup>2</sup>]) to ensure maximum coverage to the substrate. MVIS Veneer Mortar can be applied onto the back of each veneer unit, ensuring 100% coverage, or, using a notched trowel comb the MVIS Pointing Mortar onto the wall. Press the veneer unit into place and then tap with a rubber mallet to promote 100% coverage of adhesive to the veneer unit and to the substrate. Complete bedding of the mortar to both the veneer unit and the substrate is critical. Even small voids can collect water over time, which can lead to problems in the future.

Once the veneer installation is completely cured, MVIS Pointing Mortar can be installed using a grout bag and /or a pointing tool. Tooling the joint with a concave joint tool helps compress and smooth the joints for both aesthetic and functional reasons. The proper installation of the pointing mortar/grout helps the veneer installation to resist moisture penetration. Mortar joints should be well tooled and have no cracks or voids which would allow water to freely enter the veneer system. Brush away any mortar that may be on the surface after tooling the joints. If any type of chemical cleaning is required, it would be required to check with the manufacturer of the veneer and the manufacturer of the cleaners to determine acceptability and best practice so as not to damage the veneer.





### **MVIS Veneer Mortar Installation Considerations**

As with the installation of other finishes or veneers, there are some considerations, which apply to masonry veneer as well.

#### **Movement Joints**

It is a well-known fact that ALL structures move! No matter how big or how well designed and built, ALL structures move!! It is necessary to allow for movement within the veneer to help minimize or prevent damage from occurring when movement takes place. The Tile Council of North America provides information on movement joint design essentials, but it is the responsibility of the project design professionals to properly specify movement joints and to show them on the construction documents. LATASIL™, a highly flexible 100% silicone sealant, is an ideal choice for use in masonry veneer installations.

#### **Flashing/Water Penetration Prevention**

Masonry veneers are typically water-resistant, not waterproof and they do a reasonably good job of resisting moisture penetration into a structure. For exterior installations, it is required to have a moisture-resistant covering and, in many cases a waterproofing membrane to prevent moisture penetration and damage. Where specified, a flashing should be installed at the base of walls, at sills, under wall caps, and other critical areas to direct moisture to the exterior face of the wall. The MVIS™ Flashing Sealant or the LATAPOXY® Waterproof Flashing Mortar can also be used to treat penetrations and transition areas.

## **Efflorescence**

Efflorescence is a white, powdery mineral deposit that appears on installations involving cement mortars or concrete. Efflorescence occurs when salts, naturally present in portland cement-based products, get wet. As water penetrates into the cement-based product, the salts are put into solution and are carried to the surface of the mortar or concrete by means of the evaporation process. The water evaporates, but the salts are left behind where they react with carbon dioxide in the air and form the white deposit (often calcium carbonate) which we commonly see on brick and masonry installations. Efflorescence is normally not harmful but is unsightly and, in some cases, difficult to remove. For more information on efflorescence please refer to [TDS 159](#) “Efflorescence – Causes and Prevention” available at <https://laticrete.com>.

## **Durability and Maintenance**

To help keep the masonry veneer durable it will require inspection and probably some maintenance. Keep excessive moisture from coming in contact with the wall by making sure that landscaping is sloped away from the building, proper clearances are maintained from the veneer to the ground surface, sprinklers do not spray onto the structure, downspouts are sufficiently placed to move water away from the structure, and flashing is functioning properly. If weep holes have been designed into the system, they must be kept free of obstructions and cleaned out if necessary. If any weeds or ivy is present, they should be removed periodically, and if cracks appear in the mortar joints, they should be repaired to restore the walls weather resistance.

Technical Data Sheets are subject to change without notice. For latest revision, check our website at <https://laticrete.com>  
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