

CRAFT BOARD FORM[®], RECTANGLE, STRIP, KINGS, AND RIDGEWATER LEDGE[™] MASONRY VENEER INSTALLATION INSTRUCTIONS

This installation guide provides comprehensive instructions for successfully installing Creative Mines masonry veneer. It outlines the necessary tools, materials, and step-by-step procedures. Note that these instructions assume the installer possesses a working knowledge of the materials and proper installation methods.

Before initiating the installation process, the installer must assess the substrate and installation conditions. Any issues should be reported to the general contractor or architect for correction before proceeding with the installation. By beginning the installation, the installer acknowledges acceptance of the materials.

Building Code Requirement

Building code requirements may vary by region. Therefore, it's essential to verify the building code requirements for your specific area and application by consulting local authorities. To ensure compliance with ASTM C1780 installation guidelines, follow the [CMHA-MANUFACTURED-STONE-INSTALL-GUIDELINES.pdf](#)

Project Site Requirement

The installation surface must be clean, dry and structurally sound. Remove any debris, sealers, dirt, or other imperfections from the wall. Clean the wall with a stiff brush and water, then clean any debris away from the ground or surface in front of the wall. After removal of the curing compounds and sealers, all rough, uneven or "out-of-plumb" surfaces must be made "plumb and true" to within 1/4 " in 10' (6 mm in 3 m) using an approved mortar mix as detailed in these installation instructions. Don't worry about small cracks or holes; the setting mortar will fill those gaps.

Tools Required

<i>Stiff Bristle Brush</i>	<i>Carpenter's Pencil</i>
<i>Measuring Tape</i>	<i>Straightedge</i>
<i>Level</i>	<i>Wet Saw</i>
<i>Starter Strip</i>	<i>Dowel Rods / Tile</i>
<i>Spacers</i>	<i>Trowel - smooth</i>
<i>Trowel - notched</i>	<i>Chalk Line</i>
<i>Masonry Nippers</i>	<i>Grout</i>
<i>Sponge</i>	<i>Grout Bag</i>
<i>Buckets</i>	<i>Rubber Mallet</i>
<i>Heavy Duty Mixing Drill</i>	<i>Eye Protection</i>
<i>Gloves</i>	<i>Dust mask</i>



Apply bonding mortar with a 1/2 " x 1/2 " **NOTCHED TROWEL** to ensure 100% coverage.

Materials Required

Start the project with high-quality masonry veneer like Creative Mines. To determine the required quantity, measure the length and width of the wall space and calculate the square footage. In addition, if your project requires corners determine the correct lineal footage of corners. Round up to the nearest whole number and add 5% to accommodate for waste.

Lath

Lath and accessories must be of corrosion resistant material, be self-furring or use self-furring fasteners, and comply with AC 275 and ASTM C1788. The following materials are approved for installation of Creative Mines masonry veneer:

- 2.5 lbs/yd² (1.4 kg/m²) (or heavier) self-furring metal lath meeting ASTM C847
- Welded wire lath complying with ASTM C933
- 18 gauge (or heavier) woven wire lath meeting ASTM C1032 or
- The lath is consistent with the AMSV manufacturer's installation instructions and has an evaluation acceptance report from an accredited evaluation service showing compliance with ICC-ES Acceptance Criteria 275 (AC 275), or equivalent, and ASTM C1788.

Fasteners

Use corrosion resistant fasteners to secure flashing and lath or cement board to the backup system. A variety of fasteners are available such as staples, screws, and nails, provided the heads or washers of these fasteners are large enough to not pull through the lath or cement board and the fastener is of sufficient length to penetrate into the supporting material such as the wood or metal stud framing. For specific fastener selection criteria, refer to ASTM C1861.

Wood framing - For lath, use corrosion resistant staples, corrosion resistant roofing nails, or corrosion resistant screws and washers. For cement board, corrosion resistant cement board screws as recommended by the cement board manufacturer. Fasteners must be of sufficient length to penetrate a minimum of ¾ inch (19 mm) into framing members.

Metal framing or panels - For lath, use corrosion resistant screws and washers. For cement board, corrosion resistant cement board screws as recommended by the cement board manufacturer. Fasteners must be of sufficient length to penetrate a minimum of 3/8 inch (9.5 mm) through metal studs or panels.

Masonry, concrete walls, or panels - Use corrosion resistant concrete screws or powder actuated fasteners (or cap fastener). For cement board, use 1 ¾ inch to 2 ¼ inch long 3/16-inch diameter concrete screws.

Cement Board

Cement board may be used in place of lath and scratch coat, if desired. When used, cement board must comply with ASTM C1325. They must also be evaluated for interior or exterior use in accordance with ICC-ES AC376 based on the desired applications. Refer to ASTM C1780 and manufacturer recommendations for additional details on cement board installations.

Mortars

Mortars used for the installation of masonry veneer can be grouped into three different categories: scratch coat mortar, setting bed mortar, and pointing mortar. It is important the installer follows the

manufacturer's instructions for mixing mortars. Each mortar must meet minimum requirements as described below:

Scratch Coat Mortars – Scratch coat mortars are applied directly to the lath or substrate to which the masonry veneer is adhered to. The scratch coat mortar must meet the requirements of ASTM C270 Type S for site mixed or the requirements of ASTM C1714 /C1714M Type S for preblended mortars.

Setting Bed Mortars – There are a variety of different mortars that can be used as the setting bed for installing masonry veneer (the mortar used to attach the stone to the prepared substrate). Modified mortars contain additives to enhance properties, most relevantly bond strength. Polymers and other additives are used in the dry mortar mix, which is then mixed on-site with water for use in masonry veneer.

The setting bed mortar is applied directly to the scratch coat or to the back of the masonry veneer units (back-buttering), or a combination of both application methods. Polymer Modified Mortars suitable for installing Creative Mines masonry veneers are required to comply with one of the two ANSI standards:

- ANSI A118.4 – American National Standard Specifications for Modified Dry-Set Cement Mortar.
- ANSI A118.15 – American National Standard Specifications for Improved Modified Dry-Set Cement Mortar.

Grouting / Pointing Mortars – Grouting mortars, also referred to as pointing mortars or mortars used to grout mortar joints, are used to fill the joints between individual masonry veneer units once the setting bed mortar has sufficiently cured. The grouting mortars must meet the requirements of ASTM C270 Type N or Type S for site mixed or the requirements of ASTM C1714 /C1714M Type N or Type S for preblended mortars.

It is important to note that mortars mixed with higher amounts of cement will tend to be less workable and may be prone to increased shrinkage cracking but will provide greater bond strength. Type N mortars are generally easier to work with than Type S mortars due to the higher cement content of Type S mortars.

Substrates

The substrate must be structurally sound and comply with code-compliant engineering designs. Reference the CMHA's Installation Guide and Detailing Options for compliance with ASTM C1780. Reference Table 1: AMSV Installation Requirements Summary for a list of various wall systems that are approved (concrete surfaces, wood & metal studs, and others) for installing masonry veneer. Approved walls shall be designed and constructed to limit lateral deflection to a maximum of L/460 under applicable design loads. Wall systems that exceed the allowable deflection limit (i.e., systems with greater than L/460 deflection) shall be considered noncompliant, as excessive movement may result in cracking or damage for large format masonry veneer finish.

All expansion control joints and movement joints shall be brought through the veneer to the surface. Expansion joints shall be installed on perimeter walls, columns, corners, changes of plane etc. All substrates to receive bonding mortar shall be clean, free of any dirt, loose debris, paint, oil curing agents, release agents, bond breakers or any contaminant which may hinder bond. Curing

agents, release agents, sealers or other contaminants shall be removed by bead-blasting, sand blasting, grinding or similar removal techniques.

NOTE: Board Form & Weathered Plank installations over continuous insulation wall systems must use a cement board sheathing that complies with ASTM C1325.

For Exterior and Interior Applications

Cement board may be used in place of lath and scratch coat, if desired. When used, cement board must comply with ASTM C1325. They must also be evaluated for interior or exterior use in accordance with ICC-ES AC308 based on the desired applications. Refer to ASTM C1780 and manufacturer recommendations for additional details on cement board installations. It is permitted to use one layer of water-resistive barrier between cement board and substrate.

For exterior applications, joints in cement board should be treated per manufacturer's recommendations with modified mortars meeting ANSI A118.4 or ANSI A118.15 and 4-in. (100 mm) wide alkali resistant fiberglass mesh tape. For interior applications, joints in cement board should be treated per manufacturer's recommendations with modified mortars meeting ANSI A118.4 or ANSI A118.15 and 2-in (50 mm) wide alkali resistant fiberglass mesh tape.

Installation – Step by Step

Install the masonry veneer using specified materials and installation methods to ensure successful application. Protect installed masonry veneer from vibration or damage from other trades.

1. Safety

Wear eye protection, work gloves, and a dust mask when using a tile saw.

2. Substrate Preparation

After the lath is installed, apply a nominal 1/2" thick layer of an approved mortar ensuring the lath is completely encapsulated with mortar. The mortar should be applied with sufficient pressure and thickness to fully embed the lath in mortar or cover entire surface. After the mortar achieves a thumbprint-hard consistency, scratch (score) the surface horizontally to create the mortar scratch coat. Moist curing the mortar scratch coat will help reduce cracking and ensure proper hydration during curing. Before applying the masonry veneer units, the mortar scratch coat should be dampened so that the surface appears wet but free of standing water.

Cement Board Alternate Substrate - Cement board may be used in place of lath and scratch coat with the requirement of reinforcing the joints with 4" wide mesh and mortar.

3. Install a Starting Guide

For exterior installations, start with a starter strip such as a 2"x4" across the bottom of the wall using a level to ensure the wall is straight and horizontal to ensure a satisfactory job. For interior installations, if you would like to start closer to the floor, use a smaller board and make sure the floor is level. Next measure up at every foot (or desired height) from the starting ledge and snap horizontal chalk lines making sure they are parallel to the bottom ledge. These lines will be a guide to ensure the masonry veneer is installed level.

4. Setting Bed Mortar Preparation

After the scratch coat mortar has cured sufficiently, the setting bed mortar is used to adhere the masonry veneer units to the backing. Only use polymer modified mortars that comply with ANSI

A118.4 or ANSI A118.15 or equivalent. Mix the setting bed mortar according to the manufacturer's mixing instructions, typically found on the back of the bagged product. All manufacturers will provide at least some basic instructions which would include water content, recommended tools and methodology. For modified mortars they are generally as follows:

- Do not mix modified mortars in a wheelbarrow or traditional mortar mixer. Instead use a mixing bucket, paddle, and drill.
- Do not add any type of admixtures to modified mortar.
- Pre-measure the water content required for the bagged product and pour into mixing bucket. Water is typically recommended to be cool, clean, and potable.
- Slowly add mortar into the mixing bucket.
- Mix with slow mixing drill for 1 minute or until smooth consistency is reached. It is at this point that you may add more water if you feel it necessary to achieve proper consistency. Mixing at high speeds may entrain excessive air into the mortar.
- After you have reached proper consistency at this point, additional water should not be added. Note that modified mortars will have a thicker consistency than conventional mortars when properly mixed (generally a consistency similar to 'peanut butter' for modified mortars).
- Allow mixed product to "slake" or sit for 5 minutes – This time allows for all ingredients and chemicals to get properly hydrated, allowing mortar to perform as designed.
- Remix the product for another minute and your mortar is now ready to use.

When working with the mortar and it starts to stiffen up, re-mix the product without adding any more water. The product will loosen up and be usable again. Most of these products have a 3 to 4 hour pot life (at 70 degrees 50% RH). Check mortar manufacturer information for specific pot life of a given mortar. Typically, pot life will be reduced when temperatures are high – a good rule of thumb is that a 20-degree increase in temperature will reduce pot life in half.

5. Starting Point

Choose a bottom corner of your wall to start installing the masonry veneer. The goal of installation is to ensure adequate transfer of setting bed mortar between the veneer unit and the substrate, with 100% setting bed mortar coverage to both. Methods that have shown to be successful are as follows:

Back Buttered Method - The back of each masonry veneer should be entirely back buttered with mortar to a nominal thickness of 1/2 in. Cover the entire back of the masonry veneer, not just the perimeter. Back buttered masonry veneer should be firmly worked onto the scratch coat and slid slightly back and forth or with a slight rotating motion to set the veneer. Achieve mortar squeeze out in a volume that results in a full setting bed covering the scratch coat completely.

Notched Trowel Method - Larger format units or those with flatter profiles, installing using a 1/2" x 1/2" notched trowel is beneficial in achieving level and plumb between units. The bonding mortar shall be applied with a notched trowel (see illustration on page 1) to the substrate (wall), and then a thin coat is applied with a regular trowel to the back of the masonry veneer unit ensuring 100% coverage. While the mortar is still wet and tacky-place the veneer and tap into place ensuring good contact and 100% coverage. Make sure to move the veneer unit enough to collapse the ridges and ensure full coverage (typically 1 to 1 1/2 inches). Clean any excess mortar between veneers or sides of stone veneer.

6. Vertical and Horizontal Spacing

To maintain the horizontal and vertical, use a 1/4" (or 1/2") diameter dowel rod that is cut in 2" lengths in the vertical gap between the masonry veneer as you go along for consistent spacing. You may also choose to use the 1/4" (or 1/2") tile spacers. During installation, periodically remove freshly set masonry veneers to ensure adequate bond and to check for complete mortar coverage of the masonry backing to grooves. Follow these important steps to ensure a satisfactory appearance and bonding of the finished project.

7. Cutting Masonry Veneer

There will be a need to cut masonry veneer for the left and right ends of the wall. Use a masonry wet saw or heavy-duty tile saw. You can choose to calculate and make all your cuts at once or you can cut the masonry veneer as you work your way up the wall. In several cases the walls may not be square so it may be best to cut as you go. If you need to fit any masonry veneer around obstructions such as pipes or windows, make custom cuts with masonry nippers. Using the masonry nippers to nip small pieces at a time to avoid cracking the entire piece.

8. Finishing Rows

Continue installing the masonry veneer until you get to the top of the wall. Once at the top of the wall, you may need to cut your final row to make it easy to fit. Once the setting bed has started to cure and can hold the weight of each masonry veneer, removing the dowel rods or tile spacers should be done with care to avoid disturbing the newly set masonry veneer.

9. Grouting The Joints

For all Rectangles, Squares, and Kings, allow a minimum 1/4" grout joint. Non-sanded grout suitable and approved for exterior use or fine-sanded grout works well for very narrow joints. Applying the grout as a bead on the stone prior to the next stone being installed and squeezing out the grout works best in place of using a conventional grout bag. Sealing the stone with a breathable sealer prior to grouting will simplify cleanup. The grout needs to be left to dry to a crumbly state, before removal to avoid smearing on the face of the masonry veneer units. Avoid mixing more grout than you can use after a few fills. Mortar grout spills should clean up better by letting them dry to a crumbly stage and removing them rather than using a damp cloth. Always follow the manufacturer's instructions when mixing grout.

10. Care & Maintenance

Creative Mines masonry veneer is virtually maintenance free. To clean dust or other debris of the surface of the veneer use a dry whisk broom and lightly brush. You can also use a soft bristle brush and a mix of mild detergent and water to clean the surface. Do not use harsh chemicals for cleaning, such as acid, or use abrasive tools such as wire brushes or power washers.

These installation instructions were prepared specifically for Creative Mines Masonry Veneer. To ensure compliance with ASTM C1780 installation guidelines, follow the [CMHA-MANUFACTURED-STONE-INSTALL-GUIDELINES.pdf](#) Comments or Suggestions for improvement should be addressed to: create@creativemines.us