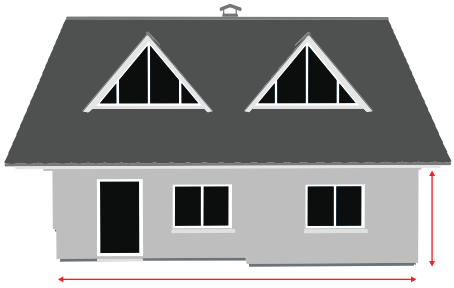
WoodStone Series Installation Guide

For installation guidelines on Coronado Stone Products' Standard Stone, Classic Series or Industrial Ledge profiles please visit - https://www.coronado.com/InstallationGuides

WoodStone Series Profiles

Barn WoodStone | Refined WoodStone | Rough Cut WoodStone

Follow the steps below to determine the total estimated amount of stone veneer flats (sqft) and corners (lnft) needed for a project.



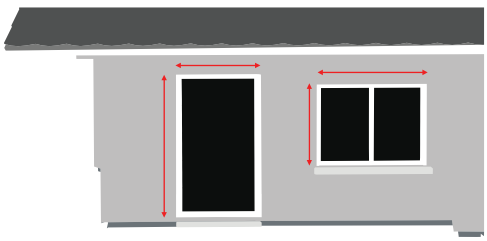
Step-1: Determining (Rectangular) Surface Area:

Multiply the length (in feet) by the height (in feet) of each surface area that will be covered with Coronado Stone Veneer.

Step-2: Determining (Triangular) Surface Area:

To calculate the square footage of an isosceles triangle: Multiply the length (in feet) by the center height (in feet) then divide by 2.

After you've completed Step-1 and Step-2, add the calculated square footage numbers together from all wall surfaces.



Step-3: Adjusting Square Footage to Accommodate Windows and Doors:

Calculate the individual square footage for each window and door. Then combine the calculated square footage together.

Note: (Step-1 + Step-2) - (Step-3) x (1.2 for overlap) = Square footage of metal lath needed for your project.

Step-4: Project Corners:

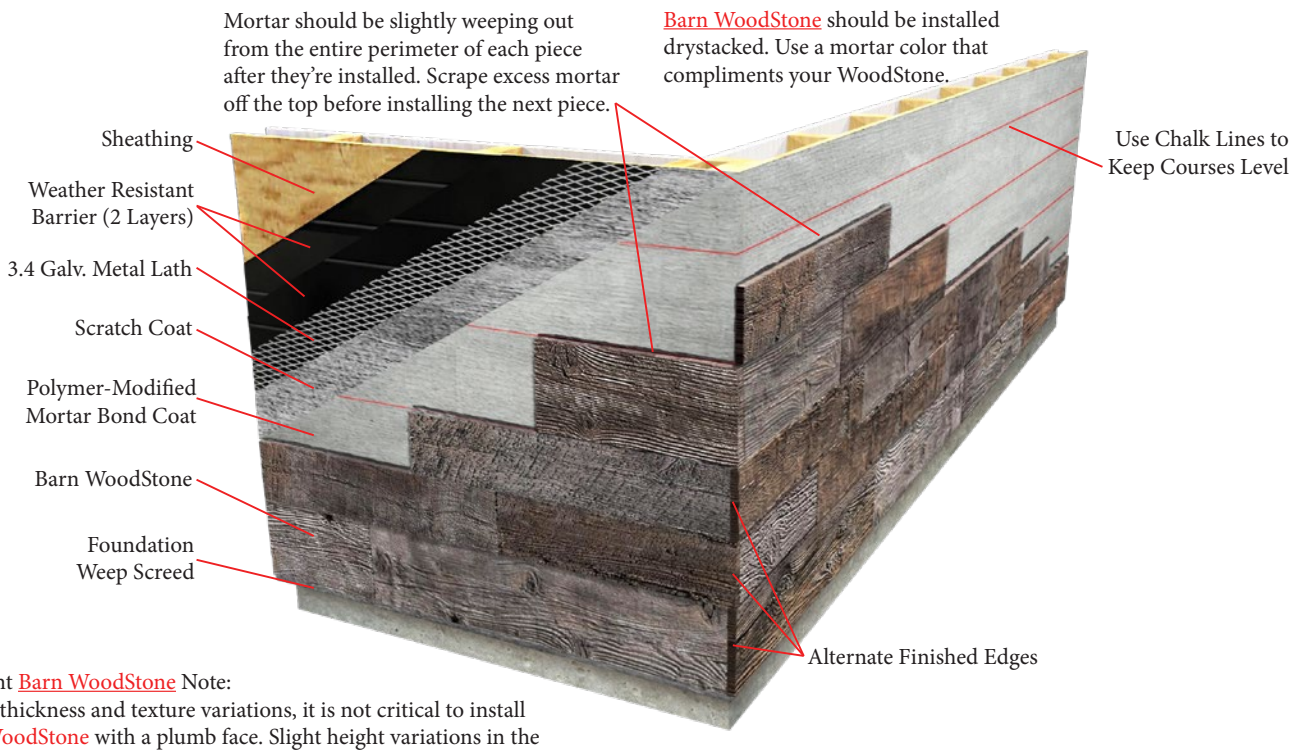
There are no corner pieces available for WoodStone products. Standard pieces should be installed by alternating the overhanding edges to achieve an interlocking effect.

Step-5: Calculating the Final Square Footage of Flats Needed:

Take the combined total square footage of Step-1 and Step-2 and subtract the square footage calculated in Step-3. Detailed sizing information is listed on the Product Specification Sheet that correlates with that product (visit - https://coronado.com/productspecificationsheets/). Take this into account when calculating your final quantities. Coronado Stone also suggests ordering 5-10 percent extra stone to compensate for loss due to cutting and trimming during the installation process.

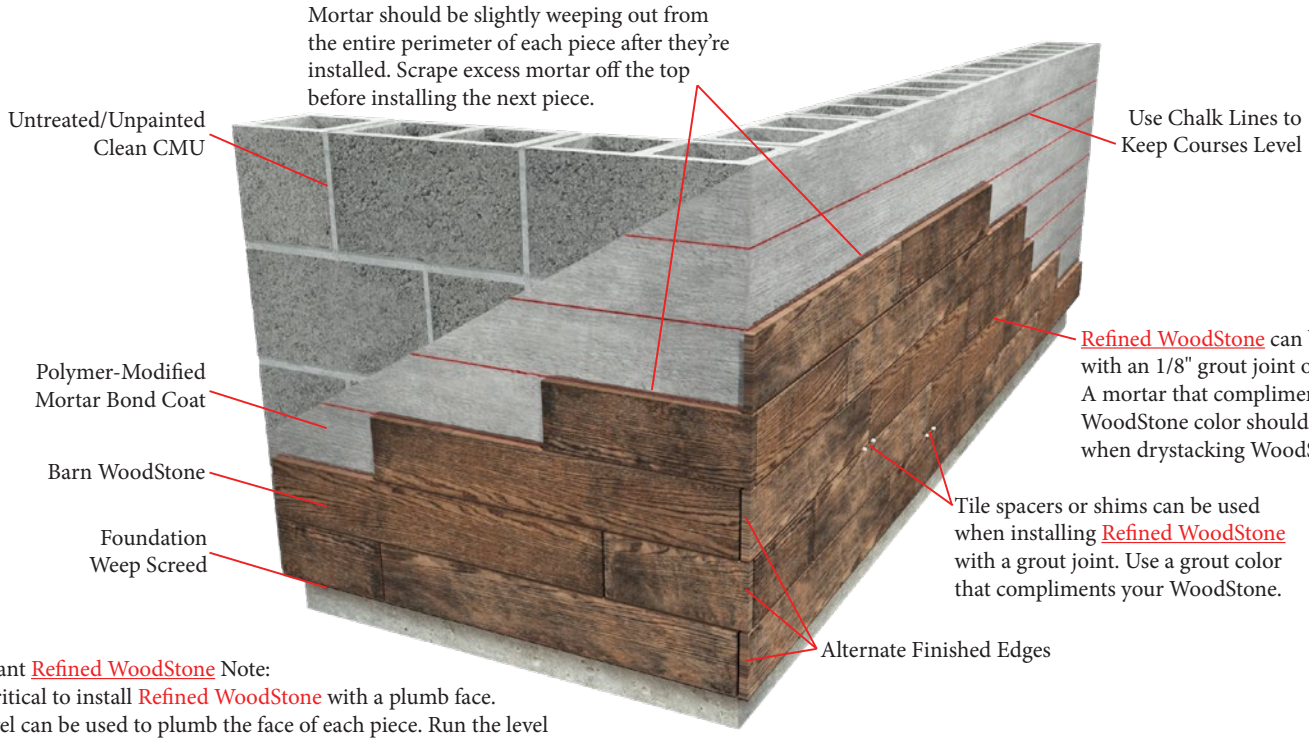
Example: *(Step-1 + Step-2)* ***800****sqft* **-** *(Step-3)* ***120****sqft* **=** ***680****sqft* **x** *(suggested 10% extra)* ***1.10*** **=** ***Total*** ***748****qft*

WoodStone Over Wood Framed Construction



Important Barn WoodStone Note:
- Due to thickness and texture variations, it is not critical to install Barn WoodStone with a plumb face. Slight height variations in the installation can add to the overall rustic look of the project.
- WRB is optional for interior non-moisture sensitive areas. A Single layer of WRB is recommended for moisture sensitive sheathing/ substrates on interior applications.

WoodStone Over Untreated/Unpainted Clean CMU Construction



Important Refined WoodStone Note:
- It is critical to install Refined WoodStone with a plumb face.
A 6' level can be used to plumb the face of each piece. Run the level across the face of multiple pieces (from multiple directions) to ensure a plumb installation.

Drawings Not To Scale

Wall System Substrate	Required Surface Preparation			
	WRB	Lath	Scratch and Bond Coat	Notes
Plywood	2 Layers	✓	✓	
OSB	2 Layers	✓	✓	
Wallboard	2 Layers	✓	✓	
Exterior Gypsum	2 Layers	✓	✓	
Fiber Board	2 Layers	✓	✓	
1/2" Rigid Insulation	2 Layers[1]	✓	✓	
Metal Building	2 Layers	✓	✓	
Stucco	2 Layers	✓	✓	
Cement Board (Exterior Application)	Minimum 1 Layer	Optional	Bond coat required	Requires a polymer-modified mortar for installs without lath.
CMU	Optional for clean unpainted or untreated surfaces.[2]	Optional for clean unpainted or untreated surfaces.[2]	Bond coat required	Lath must be used on surfaces that have been painted, treated or that have a questionable bond. Bondable surfaces require a polymer-modified mortar for installs without WRB and lath.[2]
Poured Concrete or Tilt Up[3]	Optional for clean unpainted or untreated surfaces.[2]	Optional for clean unpainted or untreated surfaces.[2]	Bond coat required	Lath must be used on surfaces that have been painted, treated or that have a questionable bond. Bondable surfaces require a polymer-modified mortar for installs without WRB and lath.[2]
Brick Masonry	Optional	✓	✓	
Rigid Insulation Thicker Than 1/2"	2 Layers[1]	✓	✓	For applications over rigid insulation thicker than 1/2", please contact Coronado Stone for installation and fastener recommendations.
Cement Board (Interior Application)	Optional	Optional	Bond coat required	Requires a polymer-modified mortar for installs without lath.
Interior Application (Non-moisture Sensitive Substrate)	Optional[4]	✓	✓	WRB is optional for interior non-moisture sensitive areas. A Single layer of WRB is recommended for moisture sensitive sheathing/substrates.[4]

[1] Some rigid foam insulation products qualify as a layer of WRB. Check with foam manufacturer to confirm.
[2] Bonding tests should be performed on every surface before installation to assess adhesion and confirm proper bonding strength.
[3] Tilt-up and pour in place concrete walls may have to be sandblasted and cleaned of all residue / bond inhibitors to achieve a proper adhesion.
[4] Refer to corresponding exterior wall detailing requirements for interior applications exposed to moisture.

Barn WoodStone - Rustic Farmhouse

Building Codes:

Check with your local building authorities to ensure that your project complies with all state and local building codes. If there is discrepancy between building codes and the installation guidelines contact Coronado Stone Products.

Required Tools:

- **OSHA Approved Safety Glasses** and **Dust Mask** (Safety Equipment)
- **Hammer** or **Screw Gun** or **Air-Powered Nail Gun** (Installing Lath)
- **Fasteners** (Installing Lath)
- **Wheelbarrow** and **Hoe** or **5 Gallon Bucket** and **Drill with Mixing Paddle** (Mixing Mortar)
- **Mason's Trowel**, **Finishing Trowel** and **1/2" Notched Trowel** (Applying Mortar / Scratch Coat)
- **Masonry Scarifier** or **Masonry Rake** (Scratch Coat)
- **Tape Measure** and **Chalk Line** (Creating a Level Installation)
- **Diamond Blade** or **Wet Saw with Diamond Blade** (Shaping Stone)
- **Wood Shims** or **Plastic Spacers** (Maintaining Uniform Joints)
- **Level** 48"min (Maintaining Level and Flush Installation)
- **Grout Bag** (Grouting Joints)
- **Jointing Tool** or **Wood Stick** (Striking Grout Joints)
- **Whisk Broom** and **Sponge** (Cleaning Finished Work)

Important Notes

Preparation and installation of WoodStone varies from a standard stone veneer installation, therefore it is important that these guidelines are followed. We recommend hiring a tile setter or stone mason that has experience laying large format tiles. As a large format wet cast tile, size and color variations are inherent in the product. Dimensional variances will be found on the length, height and thickness. Because of this, the use of an adaptive grout joint and mortar setting bed are essential. Job-site cutting and trimming of tiles is required for this type of installation. WoodStone Series products also have inherent color variations and varying patinas between individual tiles and it is recommended to mix product from multiple crates during the installation process. All questions regarding suitability and/or acceptability must be resolved prior to installation. All material stored on-site should be protected from the elements before and during the installation process or watermarking and staining can occur.

Step 1 - Install Water Resistant Barrier (WRB) (If Necessary)

For exterior applications where WRB is required, install two separate layers, using a product that complies with Grade D, ASTM E2556 or an approved equivalent. The outer layer of WRB provides separation between the scratch coat and the inner layer of WRB. The inner layer of WRB with any appropriate flashings creates a drainage plain within the wall system. Starting at the bottom of the wall, the WRB should be installed in a shingle fashion, overlapping each layer by a minimum of two inches. Vertical joints in the WRB should overlap a minimum of six inches, inside and outside corners of walls should be overlapped a minimum of 16 inches past the corner in both directions. Consult the WRB manufacturer's installation guidelines. If a rainscreen drainage plane system is required, consult the local jurisdiction requirements as they vary by region. WRB is optional for interior non-moisture sensitive areas, although a single layer of WRB is recommended for moisture sensitive sheathing/substrates. Refer to corresponding exterior wall detailing requirements for interior applications exposed to moisture.

Step 2 - Install Galvanized Metal Lath (If Necessary)

Install a 2.5 or 3.4 lbs self-furring diamond metal lath that complies with ASTM C847. Starting at the bottom of the wall, the lath should be installed horizontally with the cups facing up to allow the lath to catch and hold the scratch coat. This will create a rough texture that can be felt when rubbing your hand down the face of the lath. Each piece should overlap a minimum of one inch on all horizontal and vertical seams. Vertical seams should be staggered and the lath should be wrapped around corners at least 12 inches. Galvanized fasteners should be used every six inches vertically and 16 inches horizontally to affix the lath to the substrate. Fasteners should be anchored into framing members.

Fasteners - Corrosion resistant fasteners are used to secure lath and flashing to wall systems. A variety of fasteners are available to use depending on the application. Refer to ASTM C1063 for specific fastener selection criteria.

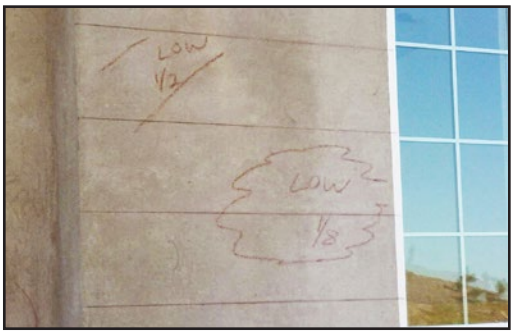
Step 3 - Apply a Scratch Coat

Apply a nominal ½" thick layer of mortar onto the lath. The mortar should be applied with enough pressure and thickness to fully embed the lath. Ensure the lath is completely covered with mortar to allow for scoring of the surface. Once the mortar is thumb-print hard, scratch the surface horizontally with a notched trowel or scarifier to create a scratch coat.

Use a long level or straight edge to confirm your wall is flat.

Step 4 - Preparing Surface Area

To ensure a proper installation, it is important that you start with a flat substrate. Keeping substrate surface variations to a minimum allows for a proper installation.



Mark all the low areas and use polymer-modified mortar to level them out to the proper height before installing WoodStone Series tiles.

Step 5 - Mortar Mixtures

For WoodStone Series profile applications a polymer-modified mortar meeting ANSI A118.4 or ANSI 118.15 is required for adhering these types of stones.

Mixing of the Mortar - Follow the mortar manufacturer's recommendations when mixing and maintaining the mortar on the job site.

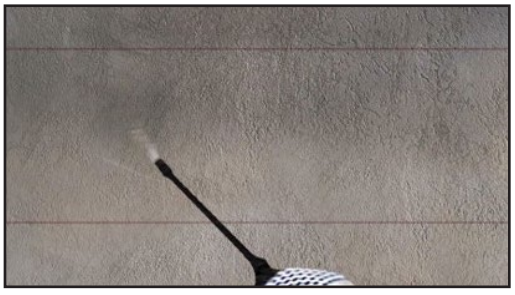
Step 6 - Snap Chalk Lines

After the scratch coat cures and before the stone is applied, snap chalk lines across the wall to ensure a proper horizontal alignment of the stone. The chalk lines are necessary in keeping the courses of stone straight and level during the installation process, which provides for a beautiful and professional result.

Snap chalk lines every 4 to 8 inches.

Step 7 - Moisten the Substrate and Back of Tiles

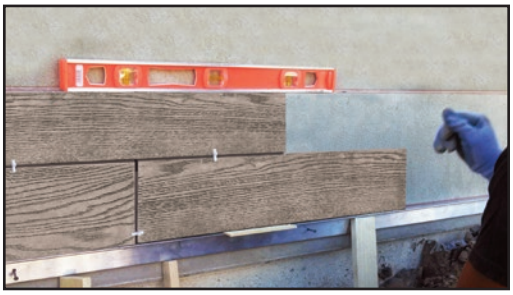
A professional sprayer or sponge should be used to moisten the scratch coat and back of stone veneer tiles during the entire installation process. This will help reduce the initial rate of water absorption. Both the veneer and scratch should be damp, but not excessively wet.



Moisten the substrate and back of stone veneer tiles during installation. Installations in hot weather environments may need additional dampening.

Step 8 - Supporting First Row

To help ensure a level installation we recommend using a piece of rigid aluminum channel to place the first course on. The aluminum can be screwed in or propped up using spare wood pieces. Using this rigid aluminum channel can help you support and level your first row of tiles during the beginning phase of the installation.



Use a rigid aluminum channel to support and level the first row of tiles during installation.

Step 9 - Applying Bond Coat

A polymer-modified mortar bond coat should be applied to the substrate moments before you start installing the tile. Applying the bond coat only to the area you are immediately installing over ensures that it will not dry prior to installation. If the bond coat dries or "skims over", remove it, clean the surface and re-apply a fresh bond coat.

Apply a polymer-modified mortar bond coat to your substrate.

Step 10 - Preparing Tile Surface Area

Moisten the back of the tile with a wet sponge. With the flat-end of the trowel, apply a thin layer of the bond coat to the back of the tile. Working the bond coat into the stone from multiple directions will break any surface tension and aid proper adhesion.

Note: Coronado's WoodStone is cast over natural wood planks and is hand-made. As such, slight variations in thickness and size are expected. Please allow for any possible inconsistencies.

Apply a thin polymer-modified mortar bond coat to the back of the stone.

Step 11 - Applying Mortar To the Tile

Using a 1/2" notched trowel, at a 45° angle, apply a polymer-modified mortar (meeting ANSI A118.4 or ANSI 118.15) to the back of the tile. Do not apply mortar in a fan or swirl pattern. The notched lines should run parallel to the long edge of the tile to ensure that air does not get trapped behind the tile while working it into the wall. Note: Do not use Type S or Type N mortar for the application of WoodStone Series tiles.

Use a ½" notched trowel to apply non-sag polymer-modified mortar to the back of the stone.

Step 12 - Working the Tile Onto The Wall

Apply the tile to the wall slightly above the desired position and work it in using a left-to-right motion until the mortar squeezes from the perimeter of the tile and full-coverage adhesion is achieved. This will ensure that the tile will settle at the desired height.

Work the tile onto the wall using a left-to-right motion.

Step 13 - Utilizing Shims and Spacers

To keep tiles from sliding, wood shims or plastic spacers should be used to maintain uniform head and bed joints. A 1/8" grout joint is recommended.

Spacers should be used to maintain uniform joints.

Step 14 - Cutting WoodStone Series Tiles

Woodstone Series Tile are easily cut to your desired size. Cutting can be done by using either a hand-held disc grinder with diamond blade or wet saw with diamond blade. Always wear OSHA approved safety glasses and dust masks during the cutting process. Wet saws and dust collector kits can also be used to keep dust to a minimum around job sites. Check for additional OSHA requirements in your area.

Step 15 - Leveling Multiple Tiles

For the Refined WoodStone, use a large level to check and maintain an even-face plane over multiple pieces. To ensure a flat installation, readjusting of pieces may be required and should be done prior to the mortar setting up. A one inch block of wood can be used to check the perimeter of the Refined WoodStone pieces to ensure an even-face plane is being achieved.

Use a large level to check and maintain an even-face plane over multiple tiles.

Step 16 - Water Repellents and Enhancers

Some customers like to utilize water repellents to help protect their stone against dirt build up, splashing water, sprinklers and de-icing materials. Only breathable, penetrating water-based silane water repellents should be used. The water repellent should be applied from the bottom-up following the manufacturer's specifications during all applications. Water repellents are not required but will help protect the stone against harsh weather. Some water repellents may darken or alter the appearance of a stone after being applied. There are also enhancers on the market that can help intensify the colors of your stone if needed. It is recommended that a test of all water repellents and enhancers be done in an inconspicuous area or on spare stones before applying it to your entire project. Remember to protect surrounding areas from overspray.

Removing Efflorescence

Efflorescence is a natural process caused by moisture transitioning through masonry to the exterior surface. This migrating moisture can cause salts and minerals to be deposited on the face of the masonry unit, creating a white filmy substance. Cleaning efflorescence can be done by lightly scrubbing the face of the stone with a soft bristle brush and water. In some cases, a 25% vinegar 75% water solution may need to be used. Do not use any harsh cleaning methods to remove efflorescence.

Salt and De-Icing Chemicals

Do not subject manufactured stone veneer to contact with de-icing materials, salt, or other harsh chemicals unless they are specifically designed for use with lightweight cement products (test products on a inconspicuous area before using them on the entire project). Prolonged exposure to these conditions may discolor the manufactured stone veneer or result in surface damage and may void the warranty.

Rainscreen

Rainscreens are optional building systems used to improve drainage behind cladding installations and can provide additional protection against trapped and excessive moisture. Some state and local building codes require rainscreens be installed behind manufactured stone applications. Follow the rainscreen manufacturer's installation recommendations.

Water Run-off or Cascading Water

It is not recommended to install manufactured stone veneer in areas of cascading water or below the water line. Water run-off should always be diverted away from installed manufactured stone veneer surfaces. Chemicals in the water may cause discoloration or efflorescence on the face of the stone. Sloped wall caps (with a minimum 1" overhang past the veneer face) should be used instead of flat veneer pieces to cap walls in areas that encounter heavy water run off or snow build up. Moisture penetration can be avoided by utilizing proper design techniques and engineered systems.

Retaining Walls

Waterproofing and drainage systems should be incorporated into retaining walls directly where the soil meets the wall. If water intrusion is a potential problem, an optional rainscreen system can be installed behind the manufactured stone adhered to the retaining wall. Moisture resistant mortars can also be used to minimize water migration and efflorescence.

Movement and Expansion Joints

Local building codes may require movement or expansion joints to be incorporated into wall systems for specific projects. If a movement or expansion joint is incorporated into the wall, do not bridge that joint with the stone veneer, as this can result in a cracking of the stone. The stone should terminate at either side of the movement or expansion joint.

Extreme Cold Weather Applications

Coronado Stone Products have been installed in freeze/thaw climates for over 50 years. Installations should be performed in temperatures exceeding 40 degrees Fahrenheit to ensure proper mortar hydration to prevent bonding issues. In cold climates, masons should use heaters & tents during and following the installation process when temperatures are below 40 degrees Fahrenheit. In areas where snow will be in contact with manufactured stone veneer, a silane-based breathable sealer can be used to protect the stone from freeze-thaw damage.

Extreme Hot Weather Applications

If temperatures exceed 90 degrees Fahrenheit during the installation process, additional moisture will need to be added to the backs of the stone veneer and to the scratch coated surface. Shade and/or frequent misting of the wall and stone may be required. Extreme heat will extract moisture from the mortar, substrate, and stone which can prevent proper bonding.

Rigid Insulation Thicker than 1/2”

Please contact Coronado Stone for installation and fastener recommendations.

Installing to Grade

For exterior framed walls, base flashing and weep screeds should be installed a minimum of 4 inches above grade or a minimum of 2 inches above paved surfaces. The minimum distance can be reduced to ½ inch for paved walking surfaces supported by the same foundation that supports the wall. For concrete or masonry, maintain a minimum clearance of 2 inches above grade or ½ inch from a paved surface provided that frost heave or adjacent surfaces are taken into consideration.

Bond Coat

A Bond Coat is a thin layer of polymer-modified mortar that is applied and worked directly into the substrate moments before the stone is installed. Applying the bond coat only to the area you are immediately installing over ensures that it will not dry prior to installation.

Cleaning

If excess mortar drops or smears on to the face of the stone during application, it’s best to remove the excess mortar and wipe the hazy area with a clean sponge as soon as possible. Be sure to clean or rotate the sponge during use, doing so will keep the transfer of mortar haze to other areas to a minimum. To remove dust and debris off the face of the stone veneer, use a dry whisk broom and lightly brush the surface. The stone veneer can also be cleaned with water and a soft bristle brush. Do not use chemical or acid washes, pressure washers, wire brushes or any other harsh methods of cleaning.

Blending Boxes on Project Site

Product should be pulled from a variety of crates and blended on site during installation to ensure a consistent overall project color on the wall.

Flashing / Weep Screeds / Casing Bead

Flashing must be installed at wall penetrations and terminations of the stone veneer. Assure that all flashing and kickouts are corrosion resistant, integrated with the WRB properly (when used), and installed in accordance with the local building code requirements.

On-site Material Storage

All manufactured stone stored on-site should be protected from the elements before and during the installation process. Material stored on-site should not be exposed to the elements for extended periods of time. Extended exposure can leave the product stained from job-site dirt and grime.

Warning

Cement stone veneers contain crystalline silica (quartz) and traces of other potentially hazardous substances which can be released into the air as dust and inhaled while dry-cutting, drilling or shaping the product. Crystalline silica and other materials contained in this product may cause cancer, birth defects and other reproductive harm. A properly fitted NIOSH approved particulate filtering face piece should be used during dust generating processes. Please consult Coronado's SDS for more information. Visit https://www.coronado.com/TechnicalDocuments for more information.

View our Additional Tech Notes and Helpful Installation Tips document for more information.

Rough Cut WoodStone - Deadwood