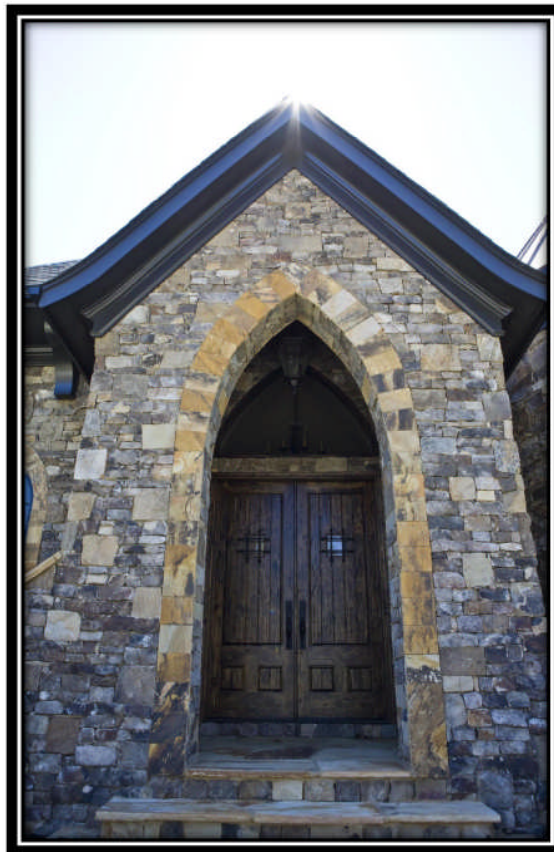




THREE RIVER

NATURAL THIN-STONE VENEER



Thin-Stone Veneer Installation Specifications & Guide

Please Read Prior to Installation

This installation guide is intended to serve as a guide only. It is not meant to replace the guidance and expertise of the professional masonry contractor. Three River Stone assumes that the chosen masonry contractor is aware of all local building codes and practices. It is also assumed that the masonry contractor consistently adheres to all relevant building codes and incorporates best practices into their scope of work.



CHOOSE YOUR THIN-STONE VENEER

- Three River Stone's natural Thin-Stone veneer is comprised of naturally occurring harvested or quarried stone sawn to thicknesses of $\frac{3}{4}$ " to $1\frac{1}{2}$ ". Thickness of stone is determined by finish weight per square foot.
- Samples can be provided for determination of size, shape, color and texture as it relates to the project.
- Delivery, Storage and Handling
 - Stone will be delivered on pallets.
 - General Contractor must provide a dry, stable roadway for stone delivery truck and equipment for removing pallets from truck.
 - Pallets must be placed on level, dry ground and should not be stacked.
 - Contractor should provide tarp, or similar covering, to protect stone during inclement weather.



MEASURING

- FLATS: Multiply the length and the height of the coverage area to determine your overall square footage. Measure any openings, such as doors and windows, and subtract this square footage from the total.
- CORNERS: Measure the height, or length, of the area requiring corners to determine the lineal footage of corners needed.
- Three River Stone's natural Thin-Stone veneer is packaged in 200, 100 and 25 square foot pallets. These quantities are determined with the consideration of a $\frac{1}{2}$ " grout joint. Dry stack applications will require additional Thin-Stone to meet the desired coverage. (This allowance of extra material is similar to that of artificial stone.) The overall coverage area is also subject to the following issues: application pattern, chipping, breaking, cutting and grinding. If any of these issues are performed in excess, additional material will need to be considered.



GETTING READY

- Gather all material needed for your project:
 - Thin-Stone Veneer
 - For styles and colors visit www.3riverstone.com
 - Weather resistant Barrier
 - 30 lb. felt or comparable product
 - Drainage Plane (optional)
 - Galvanized Metal Lath
 - Minimum 2.5 lb/ sq. yd.
 - Self furring suggested
 - Type "S" Mortar
 - Type "N" Mortar (if mortar joint required)
 - Sand
 - Water
 - Shovel
 - Used to mix sand and mortar
 - Wheelbarrow or Cement Mixer
 - Measuring Tape
 - Level
 - Used to ensure clean level lines for installing.
 - Trowel
 - Masonry hammer or Nippers
 - Used to shape and/or break stone
 - Tuck Pointer (Jointer)
 - Used to clean mortar joints
 - Whisk Broom or Brush
 - Used to clean mortar joints and stone
 - Grout Bag
 - Safety Glasses
 - Dust Mask
 - Ear Plugs
 - Gloves
 - Diamond Blade Mason's Saw / Grinder
 - Used for dimensional cuts to produce headers and other detail pieces.
 - Stone Sealer (optional)




INSTALLATION

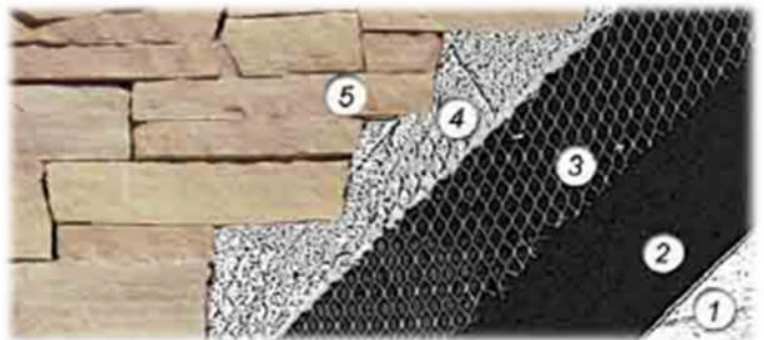
- During hot and dry conditions, it is imperative that the substrate and/or scratch coat be dampened prior to stone being applied. If this is neglected, the stone will absorb moisture from the mortar too quickly, resulting in a weaker bond. Substrate or scratch coat should appear damp with no pooling.
- When the ambient air temperature is below 50 degrees F, the mortar should be mixed with heated water.
- In the event the ambient air temperature is below 40 degrees F, stone should not be applied or the work area will need to be heated to 40 degrees F or above. If this standard is neglected the mortar will not bond correctly and the stone will have the potential of falling from the structure.
- Mortar should be stored in dry, covered area where temperature is above 40 degrees F.



PREPARING THE SURFACE

• Substrates

- Wood and Metal framed structures (including interior applications over Drywall)
 - ½" rigid sheathing (OSB may cause cracking in joints)
 - House Wrap (#1)
 - Moisture Resistant Barrier (not needed in interior applications) (#2)
 - Metal Lath (#3)
 - Scratch Coat (#4)
 -  Thin-Stone (#5)
- Concrete Block (CMU)
 - If surface is untreated (no paint or other material applied), neither the Metal Lath nor Scratch Coat is necessary.
 - If surface is treated, follow same steps as Poured Concrete Walls
 - Surface must be free from dirt, debris, etc.
 - May need to dampen surface. (refer to installation notes above)
- Poured Concrete Walls
 - Metal Lath
 - Scratch Coat
 - Alternative if wall is untreated (no paint or other material applied)
 - Sand-blast wall or etch with muriatic acid and allow to dry thoroughly.
 - Apply in similar manner to that of untreated CMU.

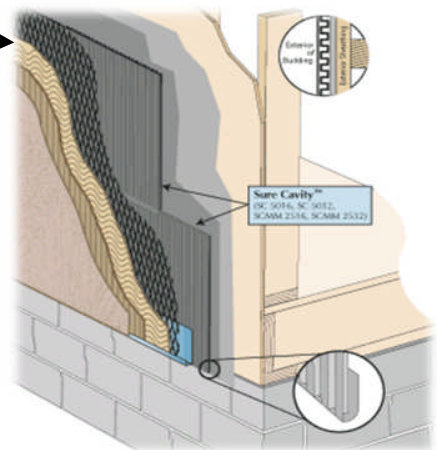
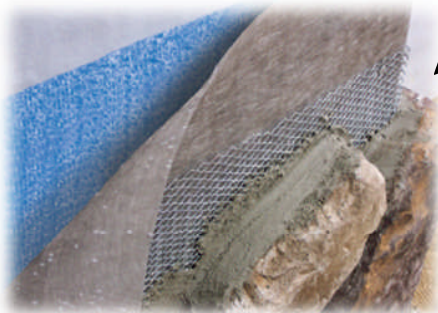


- **Work Area**

- All areas that will NOT receive stone should be protected from damage during installation. Such areas include but are not limited to windows, doors, floors, trim and any other area previously finished.
- Thin-Stone and other materials should be placed as close to application site as possible.
- ALL pallets of stone should be opened and used during mock up and final installation. Doing this promotes even distribution of size, color and texture.
- A workable portion of stone should be removed from pallets and placed in a visible area near application site in order to determine size, color and shape of design for the project.

- **Moisture Resistant Barrier**

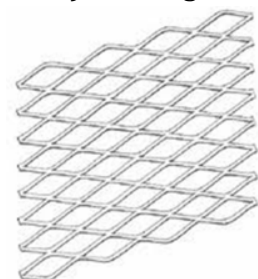
- House Wrap, or comparable material, should be applied over sheathing.
- 30lb. felt paper, or comparable material, should be applied over house wrap.
- Lap the moisture barrier at least 4" at all seams.
- Optional drainage plane may be applied over the two layers of moisture barrier.
 - MTI Gravity Cavity
 - Benjamin Obdyke Home Slicker
 - Advanced Building Products Mortairvent



- Weep screeds may or may not be required. Please consult local building codes.

- **Metal Lath**

- Expanded, galvanized, diamond metal lath (self furring is recommended) meeting ASTM C847-06 requirements. (minimum 2.5 lb./square yard)
- Lath should be applied tightly to substrate with heavy staples, galvanized screws or galvanized roofing nails penetrating 1" into studs at a minimum.
- Lath should be applied with "cups" up. Texture will be somewhat smooth when felt from bottom to top and rough when felt from top to bottom.
- Overlap lath sections approximately 1" and minimum 0.5".
- Fasten lath to sheathing and studs horizontally every 16" and vertically every 6".
- Both inside and outside corners should be wrapped 16" at a minimum..



- **Mortar**

- Type "S" mortar should be used for all Three River Stone's products.
- Type "N" mortar should be used for all grout joint applications.
- Mixing the mortar properly is vital for suitable installation and stone adherence. PLEASE REFER TO MORTAR MANUFACTURER FOR SPECIFIC MIXING INSTRUCTIONS.
- Chemical bonding agents may be added for increased strength and stability.
- Portland cement may also be added to increase strength of bond between stone and substrate.



- **Scratch Coat**

- Ensure surface is clean and free of debris.
- Use Type "S" mortar.
- Scratch coat should be approximately 1/2" thick.
- Surface of scratch coat should be rough and/or grooved with a notched trowel.
- It is acceptable to scratch coat the entire area that will be receiving stone or to "work as you go". In the event it is a "work as you go" situation, scratch coat should be allowed to "set" prior to applying stone (appx. 30 minutes).



- **Apply Three River Stone Thin-Stone**

- To ensure level lines, it is helpful to use a level to score lines or snap chalk lines on the scratch coat. This should be done horizontally every 12"-16".
- Begin installing stone from the bottom of the structure toward the top.
- Install corners first in a random pattern as to NOT create a vertical joint between rows.



- **Apply Three River Stone Thin-Stone** (continued)

- Stones may be cut or chipped to obtain a proper fit. This can be done with a saw or grinder equipped with a masonry blade or a masonry hammer.
- When using a saw, grinder or hammer it is necessary to wear proper safety gear. Care should be taken to ensure safety and to minimize waste.
- "Butter" the back of the stone with approximately ½" of Type "S" mortar. Be sure to leave no air gaps and to cover entire back of stone.



- Firmly press the stone into place with a "wiggle" motion. The mortar should squeeze out around the stone but should not get on the face of the stone.
- Hold the stone in place for a few seconds until it is secure.
- To prevent the stone from moving down the wall, a small piece of wood or stone may be used as a temporary shim.
- Remove the excess mortar with a trowel or tuck pointer.
- DO NOT DISTURB STONE ONCE PLACED. In the event the stone appears loose it MUST be removed, thoroughly cleaned and reinstalled.

- **GROUTING AND FINISHING JOINTS** (does not pertain to dry stack applications)

- After all the stones have been applied, fill the joints with Type "N" mortar using a grout bag.



- **GROUTING AND FINISHING JOINTS** (continued)

- Wait for the mortar to dry firm. Mortar will be firm once you can press a finger into it and a noticeable, mildly rigid indentation is left in the mortar.
- Joints can now be raked to obtain the appropriate look for the style and design desired.



- A soft bristle brush should be used to smooth the joint and clean off any excess residue.

- **CLEANING AND MAINTENANCE**

- If mortar gets on the face of the stone during any phase of the installation, allow the mortar to dry slightly then brush it off
- Once the mortar is removed, wash the stone or sponge off any remaining residue.
- DO NOT ATTEMPT TO REMOVE MORTAR FROM THE FACE OF THE STONE WHEN IT IS WET. THIS WILL ONLY SMEAR THE MORTAR AND MAY STAIN THE STONE.
- 1-2 weeks after installation, the stone may be cleaned with a mild detergent and water. The surface may also be scrubbed with a medium/stiff bristle brush.
- You may also use a cleaner specifically created to clean natural stone.
- Use caution when cleaning natural stone as the cleaning process may remove some of the natural characteristics of the stone such as moss and lichens which add to the natural character and beauty of our natural Thin-Stone.
- Once all cleaning is complete, a stone sealer may be applied but is not necessary. All stone sealer must be tested in a inconspicuous place to determine results.

ADDITIONAL ASSISTANCE

For additional assistance or guidance, please contact your local dealer or call our customer service at

1-888-422-8111