



# TRILITE

## Manufacturer's Installation Recommendations

Thank you for your interest in TriLite Stone. The following information should serve as a helpful tool in applying TriLite Stone to your wall surface. These recommendations can be useful to those with masonry experience or not, but are written more for the novice installer and do-it-yourselfer. Read these instructions completely before beginning installation. **PLEASE NOTE: IT IS IMPORTANT TO CHECK LOCAL CODE REQUIREMENTS BECAUSE CODES CAN VARY FROM AREA TO AREA AND MAY INFLUENCE THE TYPE OF MATERIALS NEEDED.**

### Amount of TriLite Stone Needed

Multiply the length by the height of the area to be covered, remembering to subtract the area of windows and doors. This will give you the square footage of flat stone needed. Determining linear footage for TriLite Stone is simply measuring the height (or length) of all outside right-angle corners being covered. Generally, half the linear footage of corners needed can be subtracted from the amount of flat pieces needed, since corner pieces will cover some flat area as well.

**EXAMPLE:** If the project involves 3 sides, each 5' tall and 40' wide, then the total surface area measures out to be 600 sq. ft. If there are four (4) corners to cover, each measuring 5 linear ft. in height, then the total corner footage is 20 lin. ft. Divide 20 lin. ft. in half (arriving at 10 lin. ft.) and subtract this amount from the total surface area. Therefore, when placing your TriLite Stone order, request 590 sq. ft. of flat stone and 20 lin. ft. of corner stone. **(However, retaining some of this amount in the total amount ordered may be very useful in anticipation of cutting and fitting pieces during installation.)**

### Types of Surfaces

**Please note:** The following are simply suggestions for some of the most common installation situations. **Because many scenarios exist, TriLite Stone Company highly recommends consulting the building codes in the area in which installation is taking place.**

TriLite Stone can be applied directly to clean, untreated *masonry surfaces*. This can include concrete board, poured concrete walls, and concrete block. With the exception of concrete board, however, ideal installation will always involve lath, as the possibility of movement exists for any exterior structural surface. Our stone has also been applied directly to exterior brick surfaces (e.g., chimney chases), and even stucco, if untreated, however, lathing the surface is still preferred. **(NOTE:** Stucco installation should meet the requirements of ASTM C 926. If applying veneer over a stucco color (finish coat) verify with the mortar manufacturer that their product is able to achieve a 50 psi shear bond strength over these surfaces. If the above conditions are not met, the stucco will need to be removed before installing the veneer.)

Painted, sealed, or dirty masonry surfaces must be sandblasted, surface grinded, or covered with a metal lath and mortar scratchcoat. (To determine if your wall is treated, spray water onto the wall. If the water beads, follow the above instructions.)

TriLite Stone may be applied to *new or existing wood frame construction*. This includes interior plaster, interior drywall or exterior/interior plywood. In all cases, a metal lath must be stapled to the surface and covered with a mortar scratchcoat.

**Metal stud construction** must be attached to cladding supports of 12-20 gauge metal. Exterior studs must be covered with plywood, built-rite, or exterior sheetrock, followed by the recommended paper (see below). A corrosion resistant 2.5 or 3.4 gauge metal lath is secured directly to the studs. Screws must penetrate metal a minimum of 1". A ½" of mortar scratchcoat is then applied into and over the lath and is allowed to cure for at least 3 hours. *Sheet metal construction* involves the same process.

### Material Specifications

**Paper:** For exterior non-masonry surfaces, it is recommended to apply a WRB (weather resistant barrier) such as a two-ply grade double D 60 minute paper or two layers of 15# felt.

**Lath:** Use corrosion resistant 2.5 lb sq/yd or 3.4 lb sq/yd flat galvanized, self-furring diamond wire/metal lath (as specified by local codes) over the WRB for exterior applications or directly over the sheathing for interior applications.

**Fasteners:** Use 1” crown staples that will go through the sheathing and penetrate the framing a minimum of ½” (for wood construction). Apply corrosion resistant, self-tapping screws with a 0.4375” head that provides 0.375” minimum penetration beyond the inside metal surface.

**Mortar:** Pre-mixed masonry mortars may be used provided they meet the requirements of ASTM C 270 for Type N or Type S mortars and are designed for use with manufactured stone veneers. General coverage per bag is approximately 10 sq. ft. *finished* (scratchcoat and grouting). If a dry-stack application is used, less mortar may be required. You can gauge the “stickiness” of the end mix and add bonding agent and additional Portland cement for more grip. Note: tinted mortar may be desired in either dry-stack applications or for grouting to help conceal the joints.

**Drainage Mat (aka Venting/Weeping System):** A drainage mat is a relatively new element in stone installation and could be code soon (check your local municipality for verification). It is a layer of venting material that allows for any moisture to escape from behind the stone application. There are a couple of styles available at this time making it necessary to confirm the specific type required by the city in which the project is taking place.

**Weep Screed:** Many municipalities now require that weep screed be installed as a primary or supplemental system to the drainage mat and complete the weeping system. A ¾” J-channel weep screed is a good option for TriLite Stone and is to be installed 4” above grade and 2” above hard surfaces.

#### Useful Tools (not all may be necessary)

- Measuring tape
- Pneumatic stapler or screw gun
- Stapler
- Metal shears
- Concrete hoe
- Masonry trowel
- Wheel barrow and/or buckets
- Wide-mouth nippers and/or masonry hammer
- Circular saw with carbide or diamond blade
- Wet saw with carbide or diamond blade
- Dust mask
- Gloves
- Safety glasses
- Level
- Chalk line
- Level
- Grout bag
- Finishing tools (tuck pointer, lath stick, etc.)
- Whisk broom
- Horse-hair brush
- Sponge/rags

## Job Conditions

Installation of TriLite Stone must occur when temperatures are above freezing and will remain above freezing during the curing period. If temperatures are at or below freezing, the work area must be sheltered and heated, 24 hours a day and continue at least 24 hours after installation is completed. The work area must also be sheltered if it is raining, or if rain is expected. In warm weather the surface area (mortar scratchcoat or masonry) may need to be dampened occasionally to prevent moisture being drawn from the mortar too quickly.

## Installation Instructions

**Weep Screed:** When a project requires weep screed, it must be installed first and placed a minimum of 4” above grade and 2” above a hard surface (such as a sidewalk or driveway). \*The bottom edges of the DD paper and lath will fit into the curve of the J-channel so they cannot be installed prior to the weep screed.

**Weather-proofing:** Weather-proofing is the most important step in installing TriLite Stone because the stone and mortar are porous and allows some moisture through. The WRB/felt paper should be applied from the bottom up. The bottom of each row of paper should lap at least 4” over the row beneath in shingle fashion. Where vertical joints occur, lap edges 6”. It is useful to mark studs on WRB/felt paper with a crayon or soapstone, as it will make it easier to know where to fasten the metal lath later on.

Ice and water tape (window tape) should be applied around all extruding areas (windows, light boxes, electrical outlets, etc.). Ice and water tape should be applied from bottom to top of each extrusion lapping over the tape beneath it.

**Drainage Mat/Mortar Vent:** When required, the drainage mat is installed over the paper and under the lath application. Installation can vary between styles available (for example, some require overlapping while others need only meet at the edges) so it is necessary to thoroughly review the manufacturer’s installation instructions.

**Lathing:** Lath should be applied with the dimples facing the wall and cups facing up (it should feel rough when running a hand downward and smooth when running a hand up). Apply lath from bottom to top, lapping at least 3” of the piece beneath and 6” vertically on center, ending and beginning on a framing member. Use staples or nails to fasten lath tightly over lapping seams and studs. Lath should feel tight against the wall, leaving no pockets. Attaching lath to cement block or poured concrete foundation can be done with a 22 caliber nail gun or ¼”

stub nails and a magnetic stub-nailer. Inside and outside corners must have lath double wrapped or continuously wrapped 16" around each corner.



**Applying scratchcoat:** Add water slowly (to avoid mortar mix from becoming too watery) and continue to mix. Proper consistency resembles batter and shouldn't slide off the trowel if it is tilted on its side. Using a trowel, spread a thin, even layer of mortar approximately  $\frac{1}{2}$ " –  $\frac{3}{4}$ " thick over lathed surface. While mud is still wet, lightly drag a large brush from side to side over the entire scratchcoat and allow to dry slightly (scratchcoat can be damp, but not wet, when applying stone). Try to avoid spreading more of a mortar scratchcoat than you can install stone to in a reasonable time-frame. If the scratchcoat does dry, it may be necessary to dampen prior to applying stone, but not to the extent there is free-standing water on surface.



**Installing TriLite Stone:** Lay out a substantial quantity of TriLite Stone around work area prior to beginning installation to gain an idea of the various shapes, sizes and colors involved. (A word about sizing: TriLite Stone can be cut with a chop-saw or small grinder equipped with a diamond or masonry (carbide) blade while wearing safety glasses and dust mask; expect a lot of dust and perform the cutting task outside. Use of a wet saw will reduce the exposure to the dust. For a more natural, rough finish, stone can also be broken or trimmed with nippers. When sizing stone is required, always try to face the cut or broken side of stone away from view.)

Begin by installing corners first and work toward the center of the surface. Most styles of TriLite Stone can be installed from the top of the surface down. This helps reduce the amount of clean-up required, as mortar will not slide on to the stone below it. Apply  $\frac{1}{2}$ " –  $\frac{3}{4}$ " of mud on the back of a piece of stone and push against surface using a slight wiggle motion for better adhesion. Mortar should seep out from behind the stone if a sufficient amount was applied.



When installing corner pieces of TriLite Stone, take notice that each piece has both a longer and a shorter side. It is critical to alternate these long and short sides as you go down (or up during a "dry-stack" application) the surface, as shown in the following photo. Otherwise, you will risk having long lines running between the pieces of stone.



If application calls for grout joints, try to keep a consistent spacing between stones of  $\frac{3}{8}$ ", essentially the width of a thumb.



When installing flat stone, again, try to apply stone from top to bottom. However, Stackstone and/or Dry-stack styles may be easier to keep level if installed from the bottom up. In this case, be very attentive to mortar getting on the face of stones below.

(A quick aside: should mortar get on the stone, allow the mortar to dry to a crumbly state and brush off with a dry, bristled brush (never use a wire or wet brush). A solution of warm water and tri-sodium phosphate or detergent can also be used and then rinsed. **DO NOT USE ACID OR ACID-BASED PRODUCTS ON TRILITE STONE.**)

When installing a dry-stack style, snapping chalk lines occasionally or etching lines in the scratchcoat may also assist in keeping the stone level.

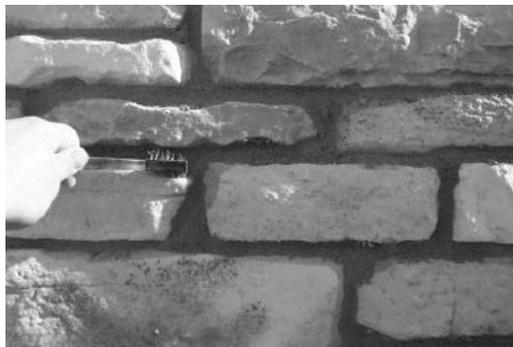
*Grouting & Finishing:* Grout the joints of TriLite Stone using a grout bag with a dime-sized hole cut from the tip. Bags should be wetted on the inside, but remain dry on the outside. The mortar may involve a higher percentage of pre-mixed mortar than that used during application to ensure easy flow. Although the mud should be looser for grouting, it should not pour out of the bag. It is not necessary to fill joints completely; filling joints half way from the wall out to the edge of the stone is sufficient.



Grout is ready for the first step of finishing when it is scraped with a fingertip and crumbles, rather than smears. As grouting continues, it will be important to monitor the readiness of previously grouted areas. An effective finishing tool is a wooden lathe stick cut into 8" pieces. Scrape and compress top and bottom edge of each joint, knocking out any excess in the middle.



Smooth out the joints using a fine wire brush, checking for holes in the mud as you go. If holes are visible, use excess mud and fill them in with your fingertip.



Perform the second step of finishing with a horse hair brush, which will gently remove loose mud and dust from the surface of the stone.



**Dry-stack (Mortarless) Applications:** Several of TriLite Stone's selections may be installed in a dry-stack fashion. These styles are produced to tightly fit together with little or no space between pieces of stone, meaning no grouting takes place.

With this type of application, stone will be applied from the bottom level moving upwards, finishing each level before beginning the one above. This will help ensure stone remains level. However, extra care is needed to prevent mortar from getting on the surface of the stones below the layer being installed at a given time. If mortar should get on a stone's surface, remove it with a whisk broom or a dry bristle brush once it has dried to a crumbly state. Do not use acid to clean TriLite Stone.

Certain climate conditions are **less conducive** to a dry-stack application of stone due to the potential for freeze/thaw cycles that could impact the adhesion of the stone to the wall.

If the dry-stack method is mandated, please note the following steps when applying these styles:

1. Apply workable mortar generously to the back of each piece to allow ample mortar to squeeze out around all edges as it is pressed onto the wall surface.
2. When applying mortar, completely cover the back of each piece and use a trowel to work the mortar into all depressions in the back.
3. Immediately after setting each piece, use a masonry trowel to remove any excess mortar and fill any voids along the exposed edges. You can also use a metal striking tool to smooth the mortar around the perimeter.
4. Just prior to setting each piece, apply a thin bead of mortar (with a grout bag) to the edges of all previously installed adjacent veneer pieces.

As with all other applications, corner pieces should be installed first, if they are needed for the particular project. The short and long legs of each corner piece must be alternated as they are installed up the surface to avoid long runs in joint lines.

If stone is to be set into a wet scratchcoat only, without having mortar added to the back of each piece, stone must be slightly damp for proper adhesion. Apply each stone into the scratchcoat with enough pressure to force a bit of mortar out around the sides of the stone. For added security, a small amount of mortar can also be applied to the back of each stone. Consider using a mortar tinted to a color which is complementary to your stone selection. This will help to conceal the joints.

In the dry-stack application, complete the entire layer with flat pieces of stone before installing the corner piece to the layer above. If a particular flat stone is noticeably larger and requires multiple pieces of thinner ones along its side, continue working in the “layer-by-layer” fashion rather than centering it somewhere and building around it in a circular fashion.



*Applying Sill Stone:* Leave a 2-<sup>3</sup>/<sub>4</sub>” gap at the top of the stone where Sill or drip-edge will be applied. Always start at one end and continue all the way around to the other end. It may be helpful to have some piece of wood or shovel (i.e., some prop) to help keep the Sill in place until it has had sufficient time to adhere to the wall. Small chips of stone can also be loosely lodged under the pieces of sill for added support until the mortar sets up.



***TriLite Stone’s Thin Brick:*** The same instructions apply to installing TriLite Stone’s Brick Veneer. However, extra care is needed to keep brick pieces level and consistently spaced. Snapping chalk lines is highly recommended to ensure consistency of lines.

***Tear-off & Reinstallation:*** In cases where pre-existing stone or brick is to be torn off prior to stone installation, be sure of the following:

- The surface is in good condition and repair if necessary to ensure a sturdy foundation for the new stone installation;
- If applicable, make sure any areas above the stone application are properly flashed;
- Re-attach lathe in any areas where stone may not have come off easily (an air chisel may be of assistance in removing some of these tougher stones);
- If previous scratchcoat is present, moisten the wall so new mortar skimcoat and mortar on the back of the stone will adhere evenly to the wall and stone.

**For any additional questions, please contact TriLite Stone at 888-786-6626 or visit [www.trilitestone.com](http://www.trilitestone.com).**