



Manufacturers Recommended Installation Guide for Dring Valley Stone

Manufactured stone can be used on almost any vertical surface. However, it is not recommended for pool areas or any area that has a constant exposure to chemicals. Certain chemicals can affect the colors used in the stone.

Computing Material

How much stone do you need?

- (1) Measure the length and height of the area you are going to cover to the next highest 1/2 foot (example 7'-2" would be 7'-1/2").
- (2) Multiply the two numbers together. The answer represents the total square footage you will need.
 - a. Length x height = square footage
- (3) Measure any openings (windows, doors, open areas, etc.) in the area to be covered. Use the formula in step 2 (above) for each opening. Add the square footage of all the openings together.
- (4) Subtract the total square footage of the openings from the square footage of the area you are covering.
- (5) Measure the height or length of any outside corners the stone is being applied to.
- (6) Multiply this number by 0.75. The answer represents the square footage that a linear foot of corner will occupy.
- (7) Subtract the square footage of the outside corner from the answer in step 4 (above). The answer represents the total square footage you will need.

How much mortar do you need?

- (1) An 80 lb bag of type "N" or type "S" (recommended) mortar will cover approximately 110 sq. ft. at 1/2" thick. This will vary depending on how experienced you are at applying mortar to a vertical surface.
- (2) Unless the stone is applied over a clean, unpainted masonry surface, you will need a 1/2" scratch coat and a 1/2" adhesive coat.
- (3) Since river rock and fieldstone are applied with about a 1/2" space between the stones for grouting, you will need to account for that in your calculation.



- (4) The best rule of thumb to use is (remember that a rule of thumb is only approximate):
- a. If you are working with a ledge stone or a stack stone, divide the total area to be covered by 55 sq. ft. to get the number of bags of mortar you will need.
 - b. If you are working with a field stone, a river rock, or any other stone that has an irregular shape, divide the total area to be covered by 35 sq. ft. to get the total number of bags of mortar you will need. You should have enough mortar to do your scratch coat application and grouting.

What other materials will you need?

- (1) 15 lb felt (figure 400 sf per roll to allow for over lap of seams)
- (2) 2.5 galvanized wire lathe (figure 19 sf to a sheet to allow for over laps)
- (3) 1-3/4" galvanized roofing nails
- (4) Builder staples (3/8" or 1/2") to apply the felt paper
- (5) Flashing as required

What tools will you need?

- (1) Safety glasses
- (2) Gloves
- (3) Hearing protectors
- (4) Dust mask
- (5) Tape measure
- (6) Builders stapler
- (7) Hammer
- (8) Wire cutters
- (9) Mixing tub or wheelbarrow
- (10) Flat shovel
- (11) Hoe (Optional)
- (12) Hose and bucket for water
- (13) 5"x12" flat Trowel
- (14) Pointed trowel
- (15) A brush to apply water
- (16) Joint rake (can be wood, metal, screen, etc.)
- (17) Whisk broom
- (18) A brick hatchet, a right angle grinder with a diamond blade (recommended), or a circular saw with a masonry blade
- (19) A masons grout bag
- (20) Level



Surface Preparation and Application

Installation is the same for all structurally sound surfaces, except if you are applying the stone over a masonry surface. The masonry surface must be clean and free of any paint or oil. If this is the case, skip to step # 6. If not, go to step #1.

When working with stones that are not stacked, it is best to work from the top down to prevent excess mortar from dripping on the stones below. All windows and doors should be flashed as needed to prevent moisture from infiltrating into the building.

- (1) Working from the bottom up, install 15# felt over the area to be covered. Allow a 2" lap over the sheet below and a 6" lap at the end if another sheet is started. Corners should be lapped over at least 16" from both sides.
- (2) Install wire lathe vertically on the wall lapping the sheet below by 2" and the adjacent sheet by 1". Nail every 6" with 1-3/4" galvanized roof nails. Be sure to hit all studs.

The sheets are installed correctly if the sheet feels smooth when you run your hand from top to bottom. If the sheet feels rough, it is upside down.

- (3) Mix mortar according to the manufacturers directions.
- (4) Using your flat trowel apply a 1/2" thick layer over the wire lathe.
- (5) When the mortar begins to set up, brush the surface gently with a stiff brush (not wire) or broom to rough the surface. Don't press hard enough to remove any mortar. Allow the mortar to dry thoroughly. You will know it is dry when it turns a light gray.

DO NOT use a wire brush. In fact, NEVER use a wire brush on any manufactured stone product.

- (6) Lay out as much stone as you have room for on a flat surface so you can get an idea of what shapes and colors you are working with.
- (7) Mix mortar to the consistency of a thick paste.

Don't mix a full bag. It will dry out before you can use it. It is better to work with smaller amounts to avoid waste.

- (8) Dampen the wall in the area you will be working to keep the moisture from being drawn out of the mortar too fast.

Be careful not to get the wall too wet or the fresh mortar will slide off.



- (9) Apply a ½" thick layer of mortar over the masonry (only cover an area you can work with fairly quickly. If the mortar begins to set up, the stones will not adhere properly).

If you find that the stones are not sticking, add approximately a ½ shovel full of Portland cement to the mixture (you will have to remove the mortar you already applied, and re-apply fresh).

If working at a gable end, apply the full stones first, then if you need to cut do so and put the cut edge to the top. In fact, when you must cut a stone always try to position it so that you can't see the cut surface. Above eye level, put the cut edge up. Below eye level, put the cut edge down. At the end of a row, put the cut edge in and the factory end out. Always apply the outside corners first, alternating the long and short sides as you go up the wall.

- (10) Press the stones into the mortar with a twisting motion until the mortar begins to ooze out around them (if the stones do not seem to be adhering properly, try dampening the back of the stones. Also large stones may need to be back buttered before application).

Vary the colors, shapes, and sizes of the stones to give a very random look. There are hundreds of shapes to choose from, so there should never be two of the same stone too close to each other. Avoid having too many joint lines lining up with each other.

- (11) Using your pointed trowel, remove the excess from around the stones as needed. Since you are going to be grouting them, a little excess is not an issue. Large clumps can be a problem.

Keep the stone at least 4-1/2" above soil. Minerals in the soil may stain the surface. If you get mortar on the face of the stone, don't worry. Let the mortar dry and use a stiff bristle brush to remove it. Never use a wire brush.

- (12) After all the stone is installed, you will mix your grout. This mix will need to be a little thinner in order to be able to squeeze it through the grout bag. The grout can be stained in order to complement the stone you are installing. Only use a stain approved for use in mortar.
- (13) Fill the grout bag about ½ full and twist the end to keep the mortar from falling out.
- (14) Squeeze the grout into the gaps between the stones to a depth a little above the surface of stones
- (15) When the grout begins to set up, scrape the excess from the joints with the joint rake. Don't press too hard. You only want to bring it to the surface of the stone and seal the edges of the stone with mortar.



- (16) Using your stiff brush, clean excess mortar from the face of the stones as needed.
- (17) At this time you can seal the surface, or you can leave it as is. Sealing will cause the stone and mortar to darken.

If a sealant is used, it must be a “breathable” sealant, and must be applied according to the sealant manufacturer’s instructions.

Stack or ledge stone

Stack or ledge stone has no mortar joints. It is made to be installed from the bottom up. Since the surface preparation is the same, we can skip to the installation.

- (1) At the bottom of the wall, install a 2"x 4" ledger board level with the top of the board 4-1/2" above soil. If the stone is being applied above a stone or masonry surface, it can go to the bottom of the wall.
- (2) Install the whole row before moving up the wall.
- (3) Align the stones in the next row so that the end joints of the stones do not line up with the row below.
- (4) Continue to the top of the area you are covering, checking level about every 3rd row.
- (5) Clean excess grout from the face as it dries to avoid any problems removing it later.
- (6) Again, at this time, the stone may be sealed or left natural.

Completion

These instructions are to be used as a guideline to install Dring Valley Stone. There are various ways that the process can be done, however this is the process that Putnam Stone & Mason Supply, Inc. recommends. We will not be held responsible for your actions should you decide to follow these directions or an alternate process. If you have questions, please contact one of our locations in **Carmel (845) 225-3214** or **Shrub Oak (914) 243-3030**, or visit our website **www.putnamstone.com** to view our frequently asked questions.

