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THIN STONE VENEER INSTALLATION RECOMMENDATIONS

Flat and corner pieces are used for most installations. Flats are applied to the flat wall surface and ordered in square feet. Corners are applied to outside corners and are ordered in linear feet. Using corners around window and door openings provides added dimension, depth, enhances the finished design and can be ordered on a per-job basis.

Preparing the Surface

Over sheetrock, wallboard, paneling, plywood, other rigid wood related sheathing or rigid insulation board cover the wall surface with a weather-resistive barrier. The barrier shall be equal to that provided for in the U.B.C. Standard No. 14-1 for kraft waterproof building paper or asphalt-saturated rag felt. The building paper shall be lapped not less than 6 inches.

Then install 2.5 lb. (or heavier) diamond mesh expanded metal lath. Use galvanized lath for exterior applications. Black metal lath (non-galvanized) may be used for interior applications. Overlap lath sides by not less than ½" and lath ends by not less than 1 inch. Attach the lath using galvanized nails or staples 6" on center vertically and 16" on center horizontally; penetrating studs a minimum of 1". Be sure to attach the metal lath with the small cups pointing upwards. Double wrap metal lath a minimum of 16" around all inside and outside corners. Then apply a ½" thick scratch coat of mortar over the metal lath and allow it to set. Mortar should be type S.

Apply "Scratch Coat"

Mix one bag of Type S mortar with 15 shovels of clean sand. Add enough water and mix to a "mashed potato" like consistency. Mix no more than enough to install 75 square feet of stone at a time. Use a trowel to spread a thin, even layer of the mixture over a section of the wall that can be covered with the stone in approximately 1 hour. Use enough of the mixture to completely cover the lath.

Over clean, unpainted, unsealed, untreated brick, block concrete or other masonry surfaces

No surface preparation is necessary.

Over painted, sealed or treated brick, block, concrete or other masonry surfaces

The surface must either a) be cleaned back to the original surface by sandblasting, water blasting, acid etching or wire brushing, or b) have metal lath attached using corrosion-resistant concrete nails with a scratch coat applied over the metal lath.

Applying the Stone

Determine Layout and Position Stones

If outside corner stones are used, it is recommended you begin your installation from the corner, and then work toward the center of your project using regular stones. Install the stones to achieve the look you desire. When installing "dry stack" stone, position stones where they abut their neighboring stones top, bottom, and sides. If a grout joint is used, try to keep the space between the stones ½" and ¾" wide. To set the stone, use the "scratch coat" mixture to "butter" the back of each stone before setting. Apply the cement mixture to the back of each stone so that it is "cones up" in the center of a depth of about ½". Cement mixture should fully cover the back of each stone to aid adhesion. Press the stone firmly into the "scratch coat" and wiggle it back and forth to set the stone into position. If your cement mixture is the right consistency, the stone will stay in place. You should strive to insure there are no spaces or air pockets between the stone and the "scratch coat" to which you are bonding. At times, you may need to use nippers, a masonry saw or hammer to trim the stones to the desired shape. Wipe excess cement from the face of stone with a dampened sponge. (Note: Consistency of "mud" should vary depending on environment temperature; Rule of thumb - the cooler the temperature the thicker the "mud" and the warmer the temperature the thinner the "mud".)

Setting the Stone

If the stone is being installed onto a very dry surface or in a hot/dry climate, the wall surface should be wetted to prevent excessive absorption of moisture from the mortar. This can be done by spraying or brushing water onto the wall surface. The wall surface should be allowed to dry for a few minutes after wetting to eliminate the excess surface water.

Grouting the Joints

Mix Grout, Fill Joints

If a grout joint is being used, mix grouting compound as described in step one. If you wish, you may add color to the joint compound following the directions on the color box. Use only iron oxide colors. Fill a grout bag with about ½ gallon of compound. Take hold of grout bag and choke mixture down to settle in bottom 1/3 of grout bag to remove air pockets. Twist the large end of the grout bag similar to the way a cake decorator applies icing to a cake, and insert the small end of the bag into joint between stones. Apply firm, even pressure to squeeze the grout evenly into the joints between all stones. Be sure to fill all holes, openings, and gaps. Clean any excess mortar from the face of stones with a damp sponge.

"Dry Stack Look"

We recommend grouting to fill noticeable voids and conceal cut or broken stone edges. Approx. ½ amount of grout as for the "jointed look". The "dry stack" appearance will result from deep striking of the joints.

Finishing the Joints

When the mortar joints become firm (normally 30-60 minutes), use a wooden or metal striking tool to rake out the excess mortar to the desired depth while at the same time forcing the mortar into the joints to thoroughly seal the stone edges. Be careful not to work the joints too soon or the mortar will smear. After working the joints, use a whiskbroom to smooth the joints and clean away any loose mortar from the joints and stone face. Loose mortar and mortar spots which have set for only a few hours clean up easily and should never be allowed to set up over night.

Finish the Joints

When the grout begins to firm up, use a wooden stick flattened on one end, or a similar tool, to "strike" the excess grout from joints. Taking care that there are no voids left in the grout behind the stones and that the grout is firmly connected to the edges of all the stones. Your final step is to sweep all joints and stones with a soft/acid bristle brush to eliminate loose particles.

It is our experience and recommendation that the mortar color be mixed to match the general color of the stones. This maintains aesthetic consistency and allows for an unobscured view of the stones.

NOTE:

- ▶ *It is important to divert water run-off away from the stone surfaces by using cant strip, gutters and flashing. Water run-off combined with severe freeze-thaw conditions can result in damage. It is not recommended that stone be used below water level.*

- ▶ *Do not install in temperatures below 40 degrees Fahrenheit. Provide supplemental heat if necessary to ensure a minimum of 40 degrees Fahrenheit temperature between installation and mortar drying for approximately 24 hours.*

Preparing the Mortar

Earthworks, Inc. strongly recommends the use of a bonding agent in the setting mortar.

Mortar should be mixed to a workable consistency.

Recommended Setting Mortar:

1) Latex Thinsert Mix

3 parts Portland cement
2 parts latex thinsert mortar
7 parts masonry sand

2) Bonding Agent Mix

3 parts type S masonry cement
7 parts masonry sand
Bonding agent and water

Mortar Mix Without Bonding Agent:

Use Type N or Type S mortar mix as follows:

a) Mix Type N mortar

2 parts type N masonry cement
3 to 5 parts masonry sand
Water

b) Mix Type S mortar

3 parts type S masonry cement
5 to 7 parts masonry sand
Water

OR

1 part Portland Cement
1 part Lime
3 to 5 parts masonry sand
Water

2 parts Portland Cement
1 part Lime
5 to 7 parts masonry sand
Water

IMPORTANT:

Manufactured Stone

Each box contains the colors, shapes and stone sizes required to duplicate the pattern marked on the box. It is necessary to mix the entire contents of each box in order to maintain consistent color percentages of each pattern.

Natural Stone

Pallets will contain a mixture of sizes so we recommend laying the stone out on a flat surface near your work area to build your pattern. This will allow you to apply the stone to the vertical surface more efficiently once you begin to mortar the stone in place.