



Wall Renders, Scratch Coats, Plaster, and Stucco

TDS 130

LATICRETE International, Inc. manufactures products that are suitable for use as renders and plasters on walls, even on building exteriors. 3701 Fortified Mortar; or, 226 Thick Bed Mortar gauged with 3701 Mortar Admix is the recommended product mix for these applications. To install a wall render, scratch coat, plaster, or stucco on a vertical surface you should follow the guidelines below:

SUBSTRATE PREPARATION:

Surface to receive application must be structurally sound, clean, able to support the weight of the veneer system, and free of all dirt, oil, grease, paint, sealers, curing compounds, form release agents, or any other material that can act as a bond breaker or bond inhibiting agent. Exterior glue plywood (interior only), gypsum drywall (interior only), exterior rated gypsum panels, and painted surfaces must have 3.4# galvanized diamond metal lath, mechanically fastened over 15# builder's felt or plastic sheeting, fastened through the panels and attached to the steel or wood framing. Concrete, concrete masonry units, cement backer board or brick may also have the lath over builder's felt mechanically fastened prior to installation of mortar. Please note that wall renders, scratch coats, plaster, and stucco must not be installed over a waterproofing and/or anti-fracture membrane (e.g. HYDRO BAN® and 9235 Waterproofing Membrane).

MIXING:

For vertical applications, one 60 lb. (27.2 kg) bag of 3701 Fortified Mortar mixed with 0.7 – 0.8 gal (2.6 – 3.0 L) of water; or, 226 Thick Bed Mortar should be added to approximately one gallon (3.8 liters) of 3701 Mortar Admix. Adjust mixture with either more powder or latex to achieve proper consistency for the conditions on the job site. The desired mortar mix should be plastic in consistency; mortar which is too dry will not stick well to the wall and mortar which is too wet will slump off of the wall.

APPLICATION:

SCRATCH COAT (Over Concrete, Masonry, Cement Backer Board or Metal Lath):

Attach wood guide strips vertically to the surface with mortar ribbons to provide a gauge for the finish coat. Make sure that the wood strips are flat, plumb and level. Apply the mortar to a properly prepared surface with a flat trowel in one application up to 5/8" (16mm) thick. Make sure that the mortar attains full contact with the substrate for the best adhesion and long term performance. Using a scratching tool, "scratch" the surface horizontally to provide a series of rough lines or texture for mechanical bond of the subsequent applications. If multiple layers are required prior to the final coat, make sure that each additional layer is "scratched" to provide the best adhesion. With good technique it is possible to build up a wall render of 3701 Fortified Mortar; or, 226 Thick Bed Mortar gauged with 3701 Mortar Admix to the desired thickness. However, do not exceed 5/8" (16mm) build-up per lift of mortar.

BROWN (FINISH) COAT:

The brown (finish) coat is applied on to the top of the "scratch" coat layer and should be rodded with a straight-edge riding on top of the wood guide strips to provide a flat surface on which to set the tile. Once the brown coat layer reaches an initial set, the wood guide strips can be removed and the voids filled with mortar and finish as required. The surface should be finished with a light steel trowel, or with a wood float. A light steel trowel or wood float finish provides a textured finish that helps promote excellent mechanical adhesion to the brown coat. Maximum thickness of the finish layer should not exceed 5/8" (16mm) in thickness. Allow the brown coat to harden for a minimum of 72 hours at 70°F (21°C) prior to the installation of a waterproofing membrane.

ALTERNATE SCRATCH COAT METHOD (Over Concrete or Masonry Surfaces):

Attach wood guide strips vertically to the surface with mortar ribbons to provide a gauge for the finish coat. Apply either 254 Platinum, or 211 Powder gauged with 4237 Latex Additive to the vertical surface with the flat side of a 1/4" x 3/8"

(6mm x 9mm) square notch trowel. Make sure that the mortar is keyed (burned) into the substrate so 100% contact is obtained. Then come back with additional mortar applied with the notched side of the trowel horizontally to the substrate. The mortar should look like it would for a tile installation with the trowel notch ridges “standing up”. Allow the mortar to harden before proceeding with the brown coat as stated above.

SPATTER-DASH/BROWN COAT METHOD (Over Concrete, Masonry, Cement Backer Board or Metal Lath):

Attach wood guide strips vertically to the surface with mortar ribbons to provide a gauge for the finish coat. Make sure that the wood strips are flat, plumb and level. Key the initial coat of mortar into the substrate with a steel or wood float. Mortar is then “launched” or splattered onto the wall until continuous coverage is achieved. These splatters (which act as a scratch coat) are then allowed to dry before the final coat is applied on top. This “spatter” coat acts as the scratch coat. The “launching” method provides a nice, rough textured surface so that subsequent applications will have good mechanical bond. Allow the mortar to harden before proceeding with the brown coat application as stated above. Note: The brown coat mortar can also be applied with the spatter-dash method and then floated and troweled smooth as required.

PUMPING MORTAR, PLASTER AND STUCCO MIXES:

In many cases, large scale projects utilize site mixed cement based plasters for the scratch and brown coat which are pumped and blown into place. Generally, site mixed plasters are used for this process.

Site mixes usually consist of 3 to 5 parts masonry sand (0.1 – 2.5mm), 1 part portland cement and ½ part lime. The lime is what makes the mortar tacky. When plasters are blown into place, the force of the plaster hitting the substrate causes a portion of the sand particles to bounce off of the wall. This is called “rebound”. The more “rebound” of sand particles that are expected, the leaner the mixture can be made. Generally, 15 to 25 % sand particle loss can be expected due to rebound when plasters are pumped and blown into place. In practical terms, if the mix starts out as a 5 to 1 mix; after “rebound” is factored in, the mortar that is actually placed finishes at a 4:1 or a 3:1 mix.

Pumpable mortars can be applied in two ways:

1. The dry mix (cement and sand) is pumped through a line and then the gauging liquid is introduced at the point where the dry mortar is dispensed. The liquid and dry mortar is in effect mixed at the point of discharge and blown onto the wall. This is commonly referred to as the Guniting Process.
2. The mortar and gauging liquid is mixed in a mixing hopper / pump apparatus and then the mixed mortar is pumped through the lines and blown onto the wall assembly. This is the more common of the two methods and is referred to as the Shot-crete process.

For exterior vertical wall work, these site mixed plasters are pumped and blown into place over felt paper and wire lath. The lime that is in the site mixed mortar acts as a lubricant and helps the mortar flow easier through the pump lines. As an alternative, a “pump aid” can also be added to help coat the pump lines to make the mix flow through the hose. Pump aids are liquid additives that typically will not harm the latex cement mixture.

Typically, the mix ratio is as follows; 94 lbs. (42.6 kg) Type I portland cement, 300 to 400 lbs. (136 to 182 kg) masonry sand (per ASTM C144) and 50 lbs. (22.7 kg) hydrated lime or liquid plasticizer/pump aid (added per manufacturer’s instructions). Confirm with the manufacturer of the plasticizer/pump aid for compatibility with latex additives. For pumping site mix mortar, dilute 8510 Bonding Admix 1:1 with water and place in mixer. Add sand, cement and plasticizer. Adjust with additional water to provide the correct consistency for pumping mortar. Do not exceed the 1:2 dilution rate of 8510 Bonding Admix to water. Approximate coverage for 450 lbs. (204.5 kg) of mortar will be 60 ft² (5.5 m²) at 1” (25 mm) thick. Coverage will vary according to mixing, pumping, placement, and job site conditions. In certain cases, the lime can be omitted from the mortar mix when LATICRETE[®] liquids are used to gauge the mix.

Alternatively, the following LATICRETE Systems Materials can be used for the plasters:

1. 226 Thick Bed Mortar mixed with 8510 Bonding Admix (diluted 1:1 with water), or
2. 226 Thick Bed Mortar mixed with 3701 Admix can be used.

Mortars, stuccos and plasters that have been plasticized with a LATICRETE® admixture can be readily pumped as much as 150 ft (50 m) and to elevations as high as 10 floors. Rotating blade/plaster mixers are the ideal type of mixers for these products.

Note: Putzmeister makes a wide variety of machinery that can accommodate the mixing/pumping of the plaster, stucco and mortar mixes.

TILE APPLICATION:

Once the render has dried it is ready for the application of the next component of the tile system. All exterior installations and any interior, wet installation should be waterproofed. HYDRO BAN® or 9235 Waterproofing Membrane are excellent choices for use over the render. Allow the render coat to harden for a minimum of 72 hours at 70°F (21°C) prior to the installation of a waterproofing membrane or tile adhesive mortar.

To install tile over the wall render (interior, dry areas) or over the HYDRO BAN or 9235 Waterproofing Membrane use 254 Platinum or 211 Powder gauged with 4237 Latex Additive.

Once the tile or stone has set firm the installation can be grouted using SPECTRALOCK® PRO Premium Grout*, SPECTRALOCK PRO Grout, PERMACOLOR® Select^; PERMACOLOR Grout; PLASMA™; or, 1500 Sanded Grout or 1600 Unsanded Grout gauged with 1776 Grout Enhancer. Treat any change in plane, penetration or movement joint with LATASIL™ to finish off the installation.

Follow the appropriate expansion joint guidelines provided for the project.

A scratch and brown coat installation that fully utilizes the appropriate LATICRETE systems materials can qualify for a LATICRETE Systems Warranty. For full details, see LATICRETE warranty data sheets 230.99, 230.15, 025.0, 230.10, and 230.05. For more information on LATICRETE System Warranties please visit www.laticrete.com or contact LATICRETE Technical Services at 1.800.243.4788 x235.

Consult LATICRETE product data sheets for specific installation instructions.

* United States Patent No.: 6,881,768 (and other Patents)

^ United States Patent No.: 6,784,229 (and other Patents)

Technical Data Sheets are subject to change without notice. For latest revision, check our website at www.laticrete.com
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