

► Reinforcement for Veneer Stone - Problems and Solutions

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The application of simulated or manufactured stone veneer has grown dramatically over recent years. The numerous products are attractive and enhance the architectural appeal of facades. They are significantly more economical and easier to install as compared to real stone.

Unfortunately, problems with simulated stone installations have also grown dramatically. These problems are associated with moisture ingress and subsequent deterioration of the structure and elements in behind the stone. Furthermore these failures tend to erode the reputation of stone veneers.

It is well understood that real stone or brick are not impervious to moisture ingress and are always installed with a cavity space in behind. The mortar joints are the primary path for moisture ingress. Simulated stone similarly is not impervious to moisture ingress, again through the joints. However, these installations do not have the safety of a drainage cavity in behind. With simulated stone, all manufacturers require that building paper or felt be installed over the framing or sheathing followed by metal lath. The metal lath could be 2.5 expanded lath or 3.4 expanded lath or 1-1/2" woven wire.

Manufacturers then require a 1/2" scratch coat to be applied and cured for a 48 hour period. The stone is then to be embedded in 1/2" of mortar with mortar being squeezed out between the joints. The key objective is to obtain close to 1" total thickness of plaster. This plaster is critical in providing the effective water barrier. The building paper in behind, can only manage incidental moisture that may get past the plaster.

However, what has been observed in many deficient installations are:

1. No scratch coat at all. Stone has been buttered and applied directly to lath.
2. In other cases, scratch coat has been applied, but it is not thick enough to provide water barrier.
3. Scratch coat has not been left to cure for 48 hours to allow shrinkage cracks to occur. The second coat of mortar is intended to seal these cracks, creating a good water barrier.

Therefore, it is recommended that Structlath Twin Trac (alternative to 2.5 lb expanded metal lath) or Mega Lath (alternative to 3.4 expanded metal lath) be utilized for stone veneer installations to meet the stone manufacturer's intended specifications, and to prevent potential shortcomings or deficiencies.

Benefits of using Structa products are as follows:

1. Structa Wire welded wire lath have full 1/4" furrs (minimum 28 per sq/ft) which will ensure a minimum 3/8" to 1/2" scratch coat. Installers will not be able to short cut the process by buttering the stone only.
2. When installed with approved fasteners & spacing, the lath can safely support over 100psf dead load. Maximum stone weight is 15psf and plaster weight is 10psf. Therefore there is a 4:1 safety factor.
3. Since the shrinkage cracking is minimized, it is not necessary to wait for 48 hours before applying the stones.