

REPAIR AND PROTECTION OF STUCCO FACADE

INTRODUCTION

A stucco facade is an exterior cladding system that consists of cement, aggregate, and water. Stucco resembles concrete and can be installed on a variety of substrates (primarily stud-framed walls with sheathing or masonry walls). It provides many advantages over other facade systems due to its aesthetic value, fire resistance, easy maintenance, and durability. A stucco facade can last over 50 years, depending on the local environment and if it properly installed, maintained, and protected. However, if not properly maintained and protected, the service life a stucco façade can be significantly reduced. This article outlines procedures for properly repairing and protecting a stucco façade.

CONDITION ASSESSMENT OF STUCCO

Stucco facades can deteriorate for a variety of reasons, including inadequate design, improper installation, the use of improper materials, or lack of maintenance. Before beginning a stucco repair project, it is necessary to have a condition assessment of the stucco façade performed by a consultant qualified in stucco repair to identify the cause and extent of the deterioration. Areas of deteriorated stucco will be located and determined through visual examination and by sounding of the stucco façade. Investigative openings into the façade may need to be made to determine the underlying causes of deterioration and condition of concealed structural and water-resisting components of the building. The condition assessment should provide recommendations for repair of identified deficiencies, as well as an estimated scope and cost of the repair project.

STUCCO REPAIR PROCEDURES

In many cases, stucco repair necessitates the removal of existing stucco and replacement with a compatible stucco patching material. Stucco repair is performed in the following manner. First, the perimeter of the repair area is saw-cut with a grinder, with care being taken so the metal lath in the stucco is not damaged. In some cases, the lath must be cut to remove the deteriorated stucco and corroded sections of lath. However, it is critical that a section of lath at the perimeter of the patch remain intact so that the new stucco will be tightly bonded to the surrounding stucco to mitigate future cracking around the repair patch. Direct applied stucco systems do not utilize metal lath, but the demolition and patching process is the same. Deteriorated stucco is then removed using a detail chipping hammer. It is important match the thickness of the existing coats (or layers) when repairing stucco, so the outer coats are cut back farther than the inner layer. Finally, remove the finish coat of the plaster surrounding the patch so the surrounding area will have the same finish coat after placement of the patching material.

After deteriorated stucco is removed, any rusted or damaged metal lath, corner bead, control joints, or other metal stucco accessories should be removed as well. New PVC stucco accessories should be used in lieu of metal to eliminate deterioration of the stucco due to corrosion of metal accessories in the future. New lath should be installed over the accessories. If using paper-backed metal lath, the paper must be peeled away from the lath and lapped behind the surrounding metal lath or stucco accessory. Having the paper

lapped over the metal lath will break the bond between the existing lath and cause cracking of the new stucco material. The felt paper must also be shingled correctly and overlap the existing felt paper so water leaks do not occur at the repair area. The stucco accessories and lath should be fastened to the back-up wall structure (i.e., wall studs, CMU, concrete, etc.) in accordance with applicable building codes. The fasteners should be stainless steel to prevent corrosion.

The underlying substrate should be inspected by a qualified repair consultant prior to placement of the patching material. The stucco façade may be concealing deficiencies of the building structure, façade back-up wall, and/or weather resistive barrier/wall flashing which were not able to be observed during the condition assessment. All structural, back-up wall, and air barrier/wall flashing deficiencies need to be properly identified and repaired prior to placement of stucco patching material.

Prior to placing the stucco patching material, it is important to properly prepare the substrate. The existing portions of scratch and brown coats at the patch should have a roughened surface to promote bonding between new and existing stucco material. The patch should be brought to a saturated, surface dry condition, so that the existing stucco does not draw water from the patching material and cause the patch to crack.

Placement procedure for repair is the same as that of new construction and should be performed in accordance with ASTM C 926. Each coat of stucco should be the same thickness as the existing coat. The stucco material should be applied with enough pressure to ensure it is embedded in the lath and existing stucco material. Each coat should be cured prior to application of the next coat of stucco. Curing may be performed by periodically applying a water mist on the new stucco, by covering the new stucco with plastic sheeting, and by shading the new stucco from the sun and wind to retain moisture and reduce the rate of evaporation. Each coat should be rigid enough to receive application of subsequent coat without cracking.



Deteriorated stucco removed from façade.



New wall sheathing placed after removal of stucco.



New lath and PVC accessories installed over new weather resistive barrier.



New lath and PVC accessories installed.



Scratch coat applied at a stucco repair area.



Stucco patch finished to match that of existing stucco.

STUCCO PROTECTION

After performing the necessary repairs, it is vital to protect the stucco façade from water intrusion to maximize the service life of the façade. There are a wide variety of products available that offer differing amounts of surface protection, ranging from latex paints to elastomeric acrylic or silicone coatings. Latex paints are the least costly to apply, but provide much less in terms of protection and durability. The elastomeric coatings offer enhanced water protection and crack-bridging capabilities, and are much more durable. If an elastomeric coating is selected, it is important to choose one that is breathable, that is, it allows vapor transmission out of the wall. Otherwise, water will be trapped in the wall and the coating could bubble and peel off the wall.



Application of primer and coating on repaired stucco wall.



Application of primer on repaired stucco wall.

SUMMARY

Proper repair and appropriate surface protection is key for maximizing the service life of a stucco façade. Deteriorated façades are unsightly and can cause disruptions to the daily operation of a building. Additionally, if the issues are not properly identified and addressed in a timely manner, the cost for repair the façade can increase exponentially. Building Owners and Property Managers should have façade condition surveys performed periodically by a qualified consultant experienced in façade repair and restoration.

TCE has a full staff of professional engineers that have extensive experience with stucco façade repair, restoration, and protection. They have worked on many stucco repair and restoration projects located not only in the Washington DC metro area, but throughout the United States. They are available to assist Owners or Property Managers in assessing the condition of building façades, and to develop an efficient and effect restoration and protection plan.

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