

Stucco and EIFS Defined Technical Bulletin

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Stucco is an exterior cladding product used in an assembly commonly incorporated into the design of the construction of homes and commercial buildings. It provides a number of desirable qualities which include integrally colored textured and smooth finishes. These distinct and unique qualities can improve the appearance of any structure. Today there are varieties of portland cement stuccos, as well as other modern materials that stimulate the stucco look such as Exterior Insulation and Finish System (EIFS) are available. Both EIFS and "Hard Coat" stucco can incorporate the use of Expanded Polystyrene (EPS) or Extruded Polystyrene (XPS) foam insulation. A few of the major differences are as follows; stucco assemblies on framed construction will always have a weather resistive barrier, some form of metal lath, and a 3/8" to 1" "Hard Coat". One Coat Stucco assemblies applied in one or two coats can be as little as 3/8 to 1/2", and Three Coat assemblies are normally 7/8". An acrylic finish can be applied to all of the various designs. The simple application of an acrylic finish does not change or make the cladding assembly something otherwise such as EIFS.

The three wall systems that are widely accepted today are: traditional three-coat stucco; one coat fiber reinforced stucco (FRS); and exterior insulation and finish systems (EIFS). The choice of an assembly or system will depend on the type of construction, appearance desired and environmental conditions. Cost and durability factors may also be considered.

Three Coat Portland Cement Stucco is considered the traditional or conventional stucco assembly. It is a proven building design material that is very versatile. This assembly consists of two 3/8" base coats: a scratch and a brown coat. These first two coats are covered with a colored finish coat that can be either cement or acrylic based. A three-coat assembly is best when fire resistance and durability are required. Two applications of a base coat provide a higher level of impact and crack resistance as well as the ability to create more defined details: whether flat or rounded. With proper flashing, a weather resistive barrier and weep screed, three-coat stucco allows for drainage if water penetrates the system.

One Coat or Fiber Reinforced Stucco (FRS) systems are a more recent development. They are used in many types of construction over a wide variety of sheathing and substrates.

Generally they consist of either a grey or white cement base coat, the white version can be integrally colored and applied in a true one coat application which requires no additional application or finish. The grey being the most common can be finished with a colored cement or acrylic finish coat. The one coat system is less labor intensive since only one layer of base coat is applied. With proper flashing, a weather resistive barrier, and weep screed; one-coat stucco allows for drainage if water penetrates the system.

Exterior Insulation and Finish Systems (EIFS) can be highly detailed and very crack resistant. EIF-systems can be designed and installed in a variety ways many include modifications that allow them to drain in case water penetrates the system. EIFS consists of EPS or XPS foam sheathing adhesively or mechanically attached and covered with a polymer based, basecoat with fiberglass mesh embedded, this is followed by the application of an acrylic or elastomeric finish coat.

Traditional Cementitious Coatings are less expensive, require less maintenance and offer a longer life cycle than acrylic based finishes for initial construction, as well as for recoating years later. Cementitious finish coatings are not compatible with EIFS base coats and must be applied carefully to ensure that the color remains even. Color can vary depending on drying time, application techniques and other environmental factors. With age and curing, colors may darken.

Acrylic Based Finishes can be used for both types of assemblies and offer a wide range of color choices and textures while maintaining good color uniformity. Also the elasticity of these finishes spans minor cracks. However, compared to cementitious coatings, acrylics are more expensive initially as well as when refinishing.

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