



"Everything you wanted to know about EIFS (Exterior Insulation And Finish Systems) But were afraid to ask!"

By Dave Surette SCRP

Exterior Insulation and Finish Systems (EIFS) often referred to as synthetic stucco has impacted the real estate community big time in the past few years. Some swear by it; others swear at it. It has created mixed emotions which will not go away in the immediate future and appraisers should be aware of its presence, and possible impact on the appraisal process. Because of negative publicity by the media homes that are partially or fully sided with EIFS have become "stigmatized", difficult to sell, and in some areas impossible to sell.

The concept of EIFS began in Europe after world war two to meet the demands of repairing war torn buildings, and new construction. The system we today call EIFS evolved in the 60's when expanded polystyrene (foam Board) and synthetic plasters using polymers became available and the two products were used to provide an exterior cladding system that was highly energy efficient, repelled moisture, and had low maintenance. Typically installed over masonry it worked very well as an insulating weatherproof barrier system.

The typical EIFS barrier system consists of a masonry substrate (plywood or OSB board sheathing in residential construction) to which an insulation board is either glued or mechanically fastened. A reinforcing (usually plastic) mesh is then attached to the insulation board and a base coat is troweled into the mesh so it is embedded in the base coat while it is still wet. This base coat provides the water resistance of the system and makes it a barrier system. A final finish coat or lamina which is a paint like material, usually with a sand aggregate additive, troweled or sprayed on providing the color and stucco look exterior. The proper use of sealant and flashings at doors, windows, roofs, and any other exterior penetrations, which is designed to keep moisture from entering at the edges, is considered part of all EIFS systems.

EIFS is an architects dream because the foam insulation board can be installed with unlimited shapes, textures and details. It is also easily repaired and very light weight. It puts the insulation on the exterior where it is the most energy efficient and provides a seamless surface with low air infiltration and no moisture penetration. A true barrier system.

EIFS came to the USA in the early 1970's and was used in commercial construction with a great deal of success. Commercial use over masonry and steel studs expanded rapidly, and to this day is still used extensively. It is used in motels, apartments, low rise office buildings, retail strip centers & fast food restaurants. In the 1980's EIFS found its way into the upscale residential market. Since most single family homes are "stick built" not masonry problems have developed.

Unlike other exterior claddings which breath and allow moisture to pass through EIFS does not breath and if moisture does get behind it, it can't get out. It is very installation sensitive and must be installed to manufacturers specifications. It is not forgiving when improperly installed, or if leaks develop at penetrations such as windows, doors, plumbing outlets, electrical outlets, roof-wall details, or where dissimilar materials meet the EIFS and an alarming number of EIFS failures have occurred. If moisture does enter behind the EIFS (usually at the sealant and or flashings) it gets trapped and can't get out. When moisture levels in the wood reaches 20% or higher it starts to rot the sheathing and framing. With the right conditions this damage can occur quickly (in several months on new construction) and yet the exterior EIFS maintains its excellent appearance. The damage is concealed. By the time the damage surfaces considerable deterioration usually has already occurred in the wall cavity. The only way to determine the full nature of the problem is to perform destructive testing. This is done with moisture probes by drilling holes through the EIFS to the underlying sheathing and stud walls. If the probes reveals moisture conditions at or over 20% then the EIFS must be removed to determine the nature and extent of the damage and repairs performed. Often the repairs are in the thousands of dollars. Because of the growing number of complaints a class action lawsuit has occurred and there may be more to follow. EIFS failures have

occurred in all 50 states, with the highest percentage of problems occurring in the southeastern states from Texas to Virginia. Areas that experience a lot of wind driven rain such as Wilmington NC, Charlotte NC, Atlanta GA, New Orleans LA , and Houston TX are very prone to moisture damage and rot.

Another aspect of the EIFS problem has to do with the insulation board itself. Termites love to tunnel through insulation board as they travel from the ground to the wood framing and back to the ground. Often the EIFS is installed all the way down to or below grade. The National Pest Control Association (NPCA) has advised its members nationwide not to inspect, treat, issue warranties or contracts unless they disclaim the EIFS portion of the home, or any home that has foam board used below grade for insulation. The problem is termites are virtually undetectable in ridge foam panels and the panels are untreatable with termiticides.

Two EIFS manufacturers have abandoned the "barrier" concept stating that "Barrier EIFS construction is not practical or reliable" and have gone to a "water management" or drainage systems. Give the water a place to go like all other exterior claddings. These drainage systems are gaining acceptance and quite likely will be the method of choice for all EIFS manufacturers in the near future.

Identification of EIFS on a particular property can easily be identified with a little training. If the home was built in the last 15 years, and has a "stucco" look exterior it most likely is EIFS. Do not confuse it with traditional hard coat stucco, which is still used mainly in the desert southwest part of the United States, or "hybrid" systems that are not true EIFS. I would suggest you contact an ASHI home inspector in your area and ask him or her for a quick course in EIFS identification. Another good source is an EIFS distributor or applicator in your area, or a member of the Exterior Design Institute (757-491-8589) which certifies inspectors to perform EIFS inspections.

Appraisers should be aware of the presence of EIFS in their market and disclose it on all appraisals. Any questionable installations the appraiser should recommending further evaluation by a qualified EIFS inspector.