

E I F S

Exterior Insulation and Finish Systems



EIFS Information Kit



SAMPLE LETTER

July, 2003

Mr. James Wallace
Chapter #35
Northwest Building Officials
Association of Illinois (NWBOCAI)
c/o Village of Barrington
206 Hough St.
Barrington, IL 60010-4399

Dear Mr. Wallace:

Over the past few years, the EIFS Industry Members Association (EIMA) has received an increasing number of inquiries about EIFS and their use in residential and commercial construction from building code organizations across the country.

To give you a better understanding of EIFS, we developed the attached information kit that addresses many of the questions raised about these popular wall claddings. The kit includes:

- **An EIMA news release that calls attention to a recent NAHB advisory warning that brick, stucco, vinyl siding and EIFS all have the same potential for moisture damage if they are not correctly installed, flashed and caulked.**
- **A 16-page "Guide to EIFS Construction."** With the help of sketches and descriptive copy, the Guide provides an easy-to-follow roadmap showing how EIFS are installed and integrated into a typical wall assembly.
- **An EIMA editorial on the growing concern about moisture intrusion in residential construction.**
- **An EIMA White Paper on "EIFS in Commercial Construction."** This document confirms that EIFS in commercial construction has, for the most part, been insulated from the moisture intrusion controversy.
- **A publication from APA ("The Engineered Wood Association") entitled**

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"Build a Better Home," which examines the root-causes of moisture intrusion.

Produced by APA, the Engineered Wood Association, the document outlines three primary sources of moisture in wood wall construction and methods of preventing penetration.

We also suggest that you contact The American National Standards Institute (ANSI) for a copy of the newly published **EIMA /ANSI Standard**. It is entitled **ANSI/EIMA 99A-2001**. This document establishes the minimum requirements for specifying and installing EIFS, and offers design considerations and performance characteristics for EIFS with drainage. Copies can be obtained by contacting Global Engineering Documents at (800) 854-7179. Another useful standard is **ASTM-C 1397**. It addresses the minimum requirements and procedures for field and prefabricated application of Class PB EIFS. Copies can be obtained by contacting The American Society for Testing and Materials at (610) 832-9585.

In addition, we recommend that you contact the National Association of Home Builders (NAHB), which recently published a pamphlet on how to protect wood sheathing from moisture damage. The pamphlet can be downloaded from the following NAHB Web sites: www.nahbrc.org or www.nahb.com.

Please feel free to reproduce and circulate the enclosed documents to your members, or reference them in your membership publications. We would also encourage you to consider publishing all or excerpts of our editorial on moisture intrusion since it has broad implications for professionals involved in building code enforcement.

As part of our outreach program to the building code community, we would also be pleased to provide, free-of-charge, a speaker to discuss some of the technical issues associated with EIFS construction. If you're interested in booking a speaker, please call me and I'll try to find someone in your area.

Stephan E. Klamke

Executive Director
EIFS Industry Members Association

P.S. Please also check out EIMA's Web site: www.eima.com.



EIFS Industry Members Association

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Construction Deficiencies Cited

Moisture Intrusion Becomes a Growing Concern in Home Construction

By Stephan E. Klamke

Over the past five years, the EIFS (synthetic stucco) industry has been at the center of a controversy as to whether or not its products are effective wall claddings.

We believe that the fundamental issue is whether any wall cladding can be an effective barrier against moisture intrusion if builders and contractors fail to adhere to sound construction practices. More specifically, can any wall cladding be expected to perform to the manufacturer's specifications, if there are deficiencies, or omissions in the exterior wall envelope, which includes the windows, roof, downspouts, diverters and gutters?

Compelling evidence is now surfacing that moisture intrusion, especially in the wall cavity, is a problem that reflects shoddy construction practices and inadequate flashing, rather than the merits of any particular wall cladding

Ironically, the latest revelation that moisture intrusion is an "equal opportunity" nemesis comes from the National Association of Home Builders (NAHB). In a recent news release, the NAHB cautioned that exterior claddings, including brick, stucco, vinyl siding and EIFS, "all have the same potential for sheathing and stud damage if weather barriers, flashings and opening protections are not used or are installed incorrectly." In conjunction with this warning, the NAHB is urging builders "to go beyond minimum code requirements" to prevent water and moisture from infiltrating the structures they build.

The EIFS industry is hearing similar messages emanating from the New Hanover County (Wilmington, N.C.) Inspections Department, where the EIFS debate originated nearly five years ago.

Recently, the county's chief building inspector did a complete turnabout, and conceded that there is evidence that wood rot resulting from moisture intrusion has been an ongoing problem in all types of residential construction in the Wilmington area,

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including homes sided with wood, brick and vinyl. That assessment was substantiated by a local contractor, who told Greater Wilmington Business that there is evidence of moisture intrusion in 95 percent of new construction in the Wilmington area.

The chief building inspector further suggested that state-mandated vapor barriers have exacerbated the problem and should be banned in wet, coastal areas.

He also for the first time cited windows as "culprits" in the moisture intrusion debate. In the meantime, no homes have been built with EIFS in the Wilmington area for nearly five years. Yet, by previously insisting that only EIFS-clad houses are susceptible to serious moisture damage, the Inspections Department created a cauldron of doubt and fear that has done untold harm to the EIFS industry and to thousands of owners of EIFS homes that have lost their market value.

The overriding message in the chief building inspector's advisory is that moisture intrusion is a fact of life in poorly constructed homes. In many cases, the damage is not covered by the homeowners' insurance policies and can surface after the warranties have expired, leaving the homeowner to pick up the tab, or sell the house to an unsuspecting buyer.

While nobody has specifics on the severity of the moisture intrusion problem, it's significant enough that the Federal government has launched studies to explore water problems in new homes, according to a recent article in the Minneapolis Star Tribune.

Ever since the energy crisis in the 1970s, homebuilders have been constructing tighter houses in efforts to reduce energy costs and make homes more comfortable. At the same time, new engineered wood products have replaced traditional wood boards for sheathing and even I-beams in residential construction. Along the way, rainwater has become a dangerous villain, suggests the Star-Tribune article.

To be sure, rain has always been a problem for houses. But unlike walls in older homes, newer walls are more prone to hold moisture. That makes the task of keeping water out more important than ever. Yet, some proven techniques for keeping moisture out of walls are no longer used, or are used improperly. For any cladding to be effective, moisture entry points must be adequately flashed and sealed, and other watershed components must be properly installed and maintained.

Bill Rose, a research architect at the Building Research Council at the University of Illinois, says that at least some of today's moisture intrusion problems can be attributed to the increased reliance on unskilled labor at construction sites. Many of these jobs were once held by seasoned professionals who knew how to keep water out of a building, he says. Today, the situation has changed.

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Indeed, homes are complex entities consisting of thousands of components that must be carefully integrated. Moreover, the performance of any home can be drastically affected by factors such as wind, rain, snow and soil moisture. In addition, every home must be properly maintained to remain in peak condition. Those that are not will be more susceptible to experience moisture damage, especially if they were built or remodeled since the mid '70s.

In recent years, much has been written and said about the need to protect wood sheathing from moisture in residential construction through the use of house wraps or building paper. The wide range of products available for use as weather barriers, many with different performance characteristics, has created a great deal of confusion. Any weather barrier can negatively impact a wall's drying capability if a significant amount of water seeps into the wall cavity. The type of sheathing used can also determine whether or not a moisture problem is likely to result in serious damage.

The best way to avoid moisture problems in walls, regardless of the cladding or the local climate, is to employ only code-compliant application practices and high-quality, properly installed wall components, including permeable sheathing and effective flashing and sealants around critical moisture entry points. All wall claddings are designed to resist moisture. It's how they're installed and maintained that makes the difference.

Stephan E. Klamke is Executive Director of the EIFS Industry Members Association (EIMA), a Georgia-based trade association that represents manufacturers, distributors, contractors, suppliers and others associated with the EIFS (Exterior Insulation and Finish Systems) industry.



EIFS Industry Members Association

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For Immediate Release

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NAHB Issues New Warnings on Moisture Intrusion

In a recent press release, the National Association of Home Builders stated:

"Exterior claddings, including brick, stucco, vinyl and EIFS all have the same potential for sheathing and stud damage if weather barriers, flashings and other opening protections are not used, or installed incorrectly."

This warning introduces a new NAHB pamphlet entitled: "Moisture Protection of Wood Sheathing: An Installer's Guide." The Guide is said to be a primer for installation techniques and practices that builders and contractors can use to create a water-resistant barrier around a wood-based structural system.

Further, the NAHB states: "With an influx of consumer litigation, builders now more than ever should go beyond minimum code requirements to prevent moisture from infiltrating the structures they build."

Chronic water intrusion, the association warns, can result in mold or water-related damage to the framing, sheathing, insulation and the interior finish.

An English-language version of the pamphlet can be downloaded from the NAHB Research Center Web site in PDF format. The address is:

www.nahbrc.org/certif/moisture.pdf. A Spanish version is available at:

www.nahbrc.org/certif/moisturespanish.pdf. For a printed copy of the pamphlet, call

NAHB at (800) 368-5242, ext. 359, or the NAHB Research Center at (800) 638-8556.

White Paper on EIFS in Commercial Construction

EIFS In Commercial Construction



A Position Paper prepared by the EIFS Industry Members Association

Thanks to their exceptional insulating qualities, design flexibility, curb appeal and competitive price, EIFS continue to be the preferred exterior wall cladding for commercial and institutional buildings, including stores, schools, hotels, hospitals, office complexes and recreational facilities.

According to the Ducker Research Company's "1998 Analysis of Exterior Wall Systems: Nonresidential -- Residential," approximately 322 million square feet of EIFS were installed in the United States in 1997, of which 216 million feet were used on commercial projects. Today, with a 22% share of the market, EIFS are the most widely used wall cladding in commercial construction in this country. Assuming the continuation of the current favorable economic climate, the growth of EIFS is expected to remain at 8 - 10% annually over the next five years.

Due to their many features and benefits, EIFS are preferred by construction professionals and owners alike. The most important of these is the ability to resist the elements. Whether used in wet, windy regions or in the desert, EIFS' multi-layered components, which utilize the best in acrylic polymer chemistry, form a protective and reliable shield. The versatility of EIFS makes them desirable on both new and retrofit construction.

Over the past three years, EIFS have been the subject of some negative publicity involving moisture intrusion in *residential construction*. Most of these incidents were concentrated in the area of Wilmington, North Carolina, and were eventually traced to the use of substandard building materials (such as windows), inadequate caulking or flashing, and poor workmanship. Experts agree that such substandard building practices can result in moisture intrusion no matter what type of wall cladding is used. When moisture intrusion does occur on a home clad with EIFS, the damage can be easily located and is generally inexpensive to repair.

In the commercial sector, EIFS have enjoyed virtually problem-free performance since the introduction of the system to this country 29 years ago. Architects continue to specify EIFS more than any other type of exterior cladding for commercial use because of the design versatility, energy efficiency, and cost-effectiveness of the system. Billions of square feet have been installed and continue to perform successfully.

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The growing popularity of EIFS in commercial construction was confirmed in a survey conducted late last year by *Building Design and Construction (BD+C)*, the leading trade journal in the commercial construction industry. Results of the survey show that 45.7% of the respondents had increased their use of EIFS over the preceding three years. Further, 47.7% stated that they planned to increase this use in the three-year period ahead. In addition, nearly 57% said that they had in the past 12 months specified EIFS for new construction, and 43% had done so for a retrofit project. Significantly, only 5.8% of respondents indicated a lower usage of EIFS over the same period, with 4.2% stating they would select it less often in the upcoming three years.

There are several reasons why EIFS has performed so well in commercial applications:

1. The first relates to **DESIGN AND SPECIFICATIONS**. The typical commercial project involves an architect or engineer, and general contractor or construction manager who work as a team to create and then ensure that design specifications and contract documents are followed precisely throughout the job. These specifications are performance-based (to ASTM or model building code standards) and thus mandate the use of higher-quality materials in fully tested assemblies.
2. The second involves the **APPLICATION**. There is normally a qualification process which must be met by any EIFS applicator wishing to bid commercial work. Again, this is written into the contract specifications for the job. Commercial subcontractors are often large firms that contract whole segments of the wall construction and will be responsible for framing, sheathing, EIFS, sealants and flashing. This places more responsibility onto a single source. Often, the subcontractor is bonded, providing assurance that the company has a sound financial and performance record.
3. Finally, there is the **MONITORING** process involved with a typical commercial project. First of all, an architect will review all product submittals to ensure they meet the specifications. Next, the general contractor (GC) or construction manager is responsible for ensuring that all products are installed in accordance with the architect's drawings and specifications. There may also be a third-party inspection process funded by the owner as a sort of check-and-balance on the architect and GC. Ultimately, the project must be certified by a public building inspector as code-compliant.

With such a system of checks and balances in place, there is virtually no incentive or opportunity for the EIFS subcontractor to install the EIF system incorrectly, or to avoid following specifications.

EIFS are used widely across a range of commercial projects, including institutional, educational, industrial and corporate. EIFS protect buildings built and owned by some of America's best-known corporations, including AT&T, Microsoft, Boeing, Hyatt, Disney and Wal-Mart.

-page 3 white paper-

These corporations welcome the ability of EIFS to fulfill their need for a durable wall cladding that is flexible in design and energy- efficient.

In addition, commercial architects and developers now have access to the same safeguards against moisture intrusion that are available in the residential market. The new EIFS with drainage allow incidental moisture to drain safely to the exterior of a building in the event moisture should seep behind the system into the wall assembly.

Based on current product usage and projected sales growth, EIFS have a bright future in commercial construction. More than any other wall cladding on the market today, EIFS satisfy the construction industry's need for a durable, competitively priced system that can stand up to the elements and can be fashioned into a myriad of imaginative shapes and designs.

For more information contact EIMA at 3000 Corporate Center Drive, Suite 270, Morrow, Georgia, 30260. Tel: (800) 294-3462 Fax: (770) 968-5818.