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EIFS INSPECTION REPORT

Date: xx/xx/2007

Client: Sample Report

Inspection Address: 1234 51st ST Ct, Mill Creek, WA 98012

Inspector: Michael Linde

Executive Summary

This house was built in 1994, and the EIFS is original. The house is clad with EIFS on all four sides. The system appears to be a barrier-style EIFS and the manufacturer is Dryvit. With the exception of a few noted areas, the cladding on the house is in acceptable condition at this time. However, the system was not installed according to manufacturer's instructions. Therefore, there is greater potential for this system to experience problems associated with water leakage in the future.

Background and Scope

Early versions of the exterior insulation and finish systems (EIFS) consisted of a face-sealed or barrier type system, which relied on a perfect exterior seal to prevent moisture from entering the structure. However, once moisture entered the system, usually through areas where seams and seals failed, the low-permeability of the finish material limited drying. Limited drying in combination with high leakage potential often led to moisture build up, and subsequently, growth of mold and structural decay.

Drainable EIFS, which has been in wide use since the late 1990s, was developed to address the water management problems inherent in the barrier type systems. The drainable systems include a backup drainable plane of water-resistant building paper and drainage details to allow water to drain out of the system. If installed properly, this type of system can exhibit a dramatically enhanced performance. If improperly installed, the drainable systems exhibit the same failure modes as the barrier type systems.

The primary goal of this inspection was to determine the overall condition of the EIFS. Unless otherwise noted in this document, the inspection was a visual evaluation, non-invasive in nature, and only pertains to the observable components of the exterior finish at the time of inspection. Additional goals of this inspection were to locate specific areas where the installation details may make the system prone to leakage. The Tramex Wet Wall Detector, a non-invasive tool, was used to identify areas of possible moisture intrusion. An infrared camera, also non-invasive, was used to confirm or identify areas suspected of moisture intrusion.

Invasive or destructive investigation is required to determine the actual moisture content and amount of structural damage caused by high moisture levels detected during this inspection. Dependent on the severity of the problems encountered, invasive investigation may be recommended as a follow up procedure. A visual, non-invasive inspection cannot identify as defective any areas which are dry at the time of inspection, nor where hidden damage may be present and have no visual clues.

As a general rule, it is recommended that you obtain as much history as is available concerning the property. This historical information may include copies of any seller's disclosures, previous inspections or engineering reports, reports performed for or by relocation companies, municipal inspection departments, lenders, insurers, and appraisers. You should attempt to determine whether repairs, renovation, remodeling, additions, or other such activities have taken place at

this property. Property conditions change with time and use. Since this report is provided for the specific benefit of the client(s), secondary readers of this information should hire a licensed inspector to perform an inspection to meet their specific needs and to obtain current information concerning this property.

Property Description

The structure is a 2-story, wood-framed single family residence, which is roughly 4,000sqft. All four sides of the structure are clad in a barrier-system type of EIFS, which was installed when the house was built in 1994. The manufacturer of this EIFS is Dryvit. The mesh color is blue, and the substrate is plywood.

It was sunny and dry during the inspection and the temperature was approximately 70 degrees F. There has been no rain for several weeks and the surfaces were dry during the inspection.

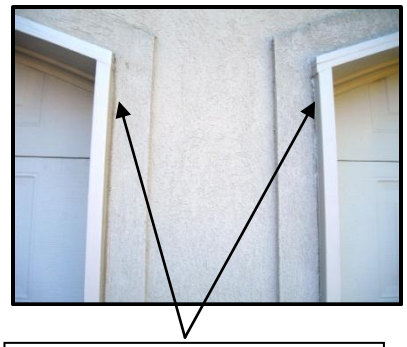
Those present on site at the time of inspection were the Buyer, the Seller, and the Buyer's Agent.

Visual Inspection--Observations

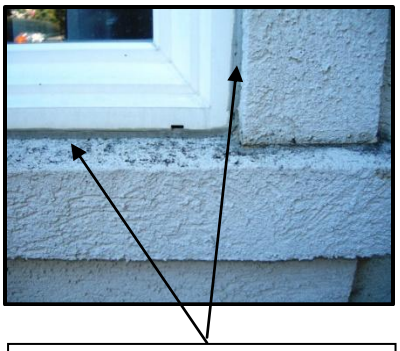
The EIFS was carefully inspected for general condition, deviations from accepted installation requirements, and damage that may have occurred subsequent to the installation of the EIFS. Deviations from established standards have been shown to increase the risk of leakage and damage.

Window and Door Joints
Joints around windows and doors should be constructed by backwrapping the mesh and basecoat around the end of the foam boards, and leaving a gap between the EIFS and the window or door. Typical joints at windows and doors are ½-inch in width. These gaps are then filled with a foam backer rod and sealant. Window head flashings are required both by manufacturers and local building codes. Door requirements are similar.

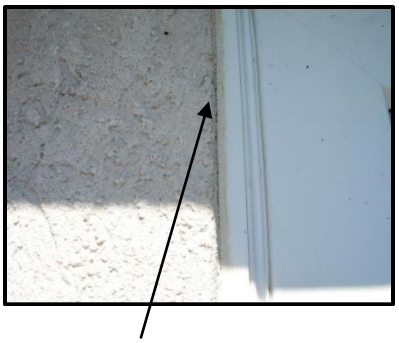
The windows and doors on this structure do not have the recommended ½-inch gaps around them. The sealant used around the windows and doors were not the recommended type, which has caused the sealant to crack and pull away from the substrate. Recommend having a certified EIFS contractor repair the EIFS so that there are proper gaps around the doors and windows and other areas where the EIFS contacts dissimilar products. After gaps are placed at recommended widths, these gaps must be sealed with the proper backer-rod and sealant.



No gaps between the door trim and EIFS



No gaps between the windows and EIFS



No gaps between the windows and EIFS

Roof and Gutter Details

In general, the flashings were properly installed, except where the lower roof abuts the upper wall. The diverter flashings at this location are too short, which has allowed water to flow down the wall. A moisture meter reading taken below the diverter flashing, where the garage roof abuts the house wall, revealed an elevated moisture content of 22.7%.

Any moisture reading above 19% indicates that there is a possibility of moisture damage to the plywood sheathing. It had been dry and sunny for approximately a week before the inspection, which indicates a prolonged presence of moisture in this area. Recommend having a licensed roofing contractor repair the diverter flashings and then have a certified EIFS contractor repair the EIFS around the new diverter flashings to prevent future water damage.

Diverter flashing locations

Diverter flashing is too short

Elevated moisture reading

The EIFS should terminate a minimum of 2-inches above the roofing material. However, the EIFS on this house extends below the roofing material, which leaves the potential for water to wick up the bottom of the EIFS. Recommend having a certified EIFS contractor cut the bottom of the EIFS so that it is a minimum of 2-inches above the roofing material. After the EIFS has been cut the bottom edge should be properly backwrapped.

Roofing material is higher than the EIFS

Above the front garage roof, where the furnace flue terminates out the roof, the roof valley flashing is cracked. Recommend having a licensed roofing contractor repair the valley flashing.

Crack in the valley flashing

Lower Edge Termination

EIFS should always be terminated above grade. Terminating below grade can allow moisture to wick up behind the system. It also creates conditions conducive to termite and carpenter ant infestations, which can be difficult to locate due to the shelter provided by EIFS.

Most of the EIFS on this house was installed above grade. However, in several areas, the EIFS is too close to the soil. Recommend removing the soil from around the house so that there is a minimum of a 6-inch clearance from the soil to the base of the EIFS.

The bottom edge of the EIFS should be backwrapped to protect the bottom edge and to prevent water from wicking up the EIFS. In many areas, there is inadequate basecoat covering the mesh. Recommend having a certified EIFS contractor apply additional basecoat to the bottom edge of the EIFS.

Inadequate basecoat over mesh

Inadequate basecoat over mesh

Vegetation

Heavy shrubbery and trees growing against the EIFS decrease light and ventilation, and reduce drying potentials. Therefore, landscaping should be regularly trimmed and maintained to minimize contact with EIFS. Recommend removing all the vegetation that is within 12-inches of the house, including the ivy growing behind the EIFS on the side of the house.

Vegetation against the EIFS

Ivy growing behind the EIFS

Vegetation against the EIFS

Flashing

Flashing should be utilized to properly direct water away from the structure. Doors, windows, and deck and balcony attachments are the most typical areas where flashing is used.

No metal flashings were installed above the garage doors and the windows. The windows are a vinyl type, which some builders consider self-flashed. However, current codes require flashing to be installed over this type of window because the industry has found that the nailing flange on this type of window does not act as a proper window flashing. Ideally, new flashings should be installed above all the windows and doors.

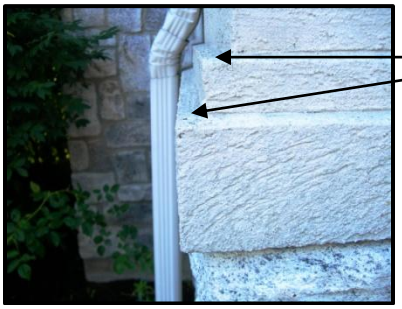
No flashing above the garage doors

Balcony

The balconies surfaces were in acceptable condition and there was no moisture stains on the underside of the balconies.

Architectural Accents

Architectural accents must have sloped upper edges so that water drains off of them properly. The horizontal band trim, window trim and garage door trim are not properly sloped along the top edge. This creates the potential for water to pond on these surfaces, which increases the potential for water intrusion. Recommend having a certified EIFS contractor create a sloped surface on all the horizontal surfaces.

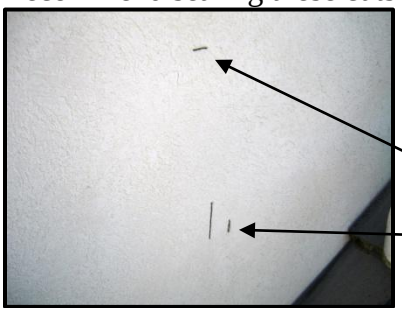


The horizontal surfaces on the entire house are not sloped

Damaged EIFS Material

The EIFS has been patched in several areas around the house. The patches appear to be acceptable.

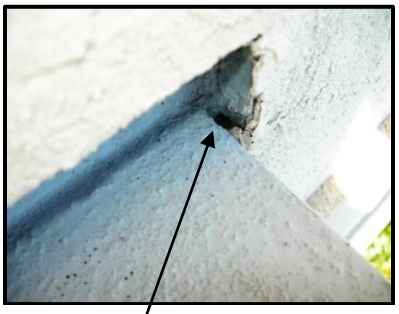
On the wall above the garage, next to the furnace flue pipes, there are several cuts in the EIFS. Recommend sealing these cuts properly.



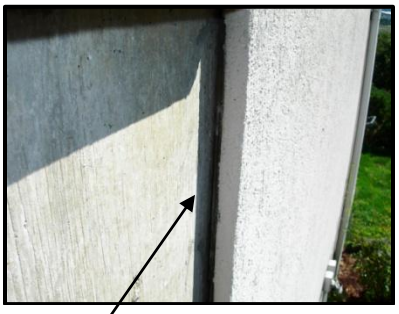
Several cuts in the EIFS material

The following areas must be sealed to prevent water intrusion behind the EIFS:

1. The small hole at the edge of the main balcony
2. The terminations of the EIFS at the foundation where the foundation steps up
3. The tops of all the light fixtures and electrical outlets
4. All pipe penetrations through the EIFS

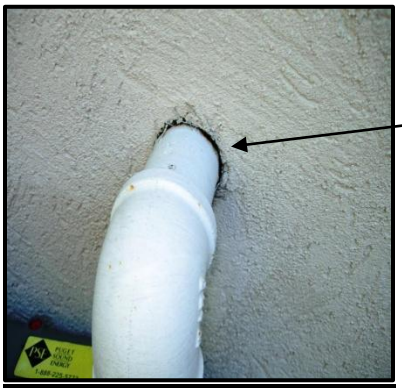


Should seal hole at the balcony



Should seal along the foundation

Should seal above all the light fixtures



Should seal around the pipe penetrations

Moisture Testing

The weather has been relatively dry and there have been no heavy rains for nearly a month. The week prior to the inspection was exceptionally warm and dry. Therefore, it is entirely possible that areas that experience leakage during rain storms were dry at the time of inspection. Also, depending on the exposure and wind conditions, not all areas that experience leakage will do so in all weather. Scanning and probing for moisture cannot identify all areas that have been wet in the past, or all areas where damage exists but that may be dry at this time. Any areas with high moisture levels or damage are identified in the report.

Initially, a moisture scanner, the Tramex Wet Wall Detector (WWD), was used to search for high levels of moisture. Where excessive levels of moisture were detected by the WWD, the cladding was punctured and the sheathing behind the cladding was probed with a direct-contact moisture

meter to measure the moisture level. Any readings that indicated moisture levels in excess of 20%, or where damage was noted, are listed below.

Typically, any moisture readings above 12% indicate that the areas have recently experienced at least some leakage and moisture accumulation. Moisture levels between 12% and 20% indicate that there has been leakage and moisture accumulation, but if the wood moisture content stays below 20%, there is generally no damage done by rot and mold. When moisture levels exceed 20%, mold begins to grow and the wood starts to decay. Above 30%, mold growth and decay occur rapidly. Building experts agree that readings above 20% generally justify local removal of the EIFS for inspection of the wood substrate and replacement of any damaged areas. It is important to keep in mind that the scanning and probing done during an inspection is just a "snapshot" in time. Therefore, under different weather conditions, the readings may read higher or lower.

The WWD only identified one area with an elevated moisture reading. This area, the wall beneath the diverter flashing where the garage roof abuts the house wall, was subsequently probed with the direct-contact moisture meter, which indicated a reading of 22%.

Other areas scanned with the WWD and found to be dry at the time of inspection are as follows:

- Beneath all the windows
- Beneath all the diverter flashings
- Beneath the balconies

An infrared camera was used to scan several of the interior side of walls where moisture intrusion was suspected. None of the areas scanned detected any thermal anomalies, which could indicate the presence of moisture.

Discussion

The EIFS on this house was not properly installed. It did not meet standard installation guidelines at the time of installation, and it does not meet them now. However, these deviations from standards were typical at the time of installation, and have subsequently been the subject of many lawsuits.

The International Residential Code currently requires that materials like EIFS be installed in accordance with their manufacturer's instructions. In addition to the potential impact on the performance of the system, failure to install the product properly may void the manufacturer's warranty.

Recommendations

Although the EIFS was improperly installed, the system appears to be in acceptable condition, with the exception of the noted areas. At a minimum, we recommend having a licensed EIFS contractor make the repairs as noted in each of the above sections and as summarized below:

- Install proper gaps around the doors and windows and other areas where the EIFS contacts dissimilar products. After gaps are installed at recommended widths, these gaps should be sealed with the proper backer-rod and sealant.
- Have a licensed roofing contractor repair the diverter flashings and then have a certified EIFS contractor repair the EIFS around the new diverter flashings to prevent future water damage
- Trim the bottom of the EIFS so that it is a minimum of 2-inches above the roofing material. After the EIFS has been cut, the bottom edge should be properly backwrapped.
- Removing the soil from around the house so that there is a minimum of a 6-inch clearance from the soil to the base of the EIFS
- Backwrap the bottom edge of the EIFS to protect the bottom edge and to prevent water from wicking up the EIFS.
- Apply additional basecoat to the bottom edge of the EIFS where basecoat is inadequate.
- Remove all the vegetation that is within 12-inches of the house, including the ivy growing behind the EIFS on the side of the house.
- Ideally, new flashings should be installed above all the windows and doors
- Create a sloped surface on all horizontal surfaces on architectural accents.
- Seal all cuts and damage, including the following areas:
    - The cuts on the wall above the garage, next to the furnace flue pipes
    - The small hole at the edge of the main balcony
    - The terminations of the EIFS at the foundation where the foundation steps up
    - The tops of all the light fixtures and electrical outlets
    - All pipe penetrations through the EIFS

- Have a licensed roofing contractor repair the valley flashing.

The EIFS on this house is a barrier type, which is considered an obsolete system compared to the drainable systems currently being installed. If this system is to be replaced in the future, we recommend using drainable EIFS, traditional 3-coat stucco, or one of the newer One-Coat stucco products, paying careful attention to codes, standards, and manufacturer's specifications for the new application.

When EIFS is removed from any area, all rotten or insect-damaged wood or saturated insulation and other porous materials should be removed and replaced. Remaining mold-infected or stained structural material should be HEPA vacuumed, cleaned with detergents, and treated with appropriate fungicide to reduce future mold growth. We recommend the use of Borate type sprays as safe and appropriate fungicides for this application. Borates also provide residual protection against fungus and wood destroying insects. Cleaning mold infected materials and application of residual fungicides is important to prevent regrowth of the mold and reduce potential adverse health effects from mold exposures. After the wall is allowed to dry, it should be reinsulated and a new cladding system applied, paying careful attention to water sealing and drainage details.

APPENDIX A

HOMEOWNER MAINTENANCE GUIDELINES FOR EIFS

PART I - MOLD/MILDEW

General

Mold and mildew are a black/gray, green, red or purple growth that can form at certain locations on the building exterior. The growth of mold is more common in southern climates but can occur anywhere.

Description

Mildew is a fungus that spreads as microscopic spores and carried by the wind. When the spores land on a surface, they feed either on the surface itself or on organic airborne dirt that has accumulated on the surface. The growth of mildew/mold is encouraged by moisture, warmth, organic nutrients, and darkness. (North elevations of buildings are susceptible in particular.) Since the spores travel through the air, their behavior tends to be erratic. During rainy periods, the mildew can appear on previously unaffected areas. To the unaided eye, mildew frequently resembles dirt.

Mildew and mold like warm, moist, shady locations, such as under eaves, near or behind bushes, shrubbery and trees and on soffits and walls that are frequently shaded from the sun. However, during humid and/or rainy periods, mildew/mold can obtain a foothold on virtually any exterior area.

Cleaning Recommendations

Option No.1 - Pre-wet the area with clean water and wash with a solution of three (3) parts water to one (1) part household bleach. Apply solution and let set of 15-20 minutes. Do not let solution dry on the surface. (A mild liquid detergent or soap may be added to this solution to improve cleaning ability.)

Use a soft bristle brush (non-metal) and gently scrub the affected areas. Rinse thoroughly (use low pressure lawn and garden type hose) and repeat as needed. Note: Water down all shrubbery, trees, and flowers near areas where the solution is being used. Wear protective eyewear and protect your hands and arms with gloves and a long sleeve shirt, as necessary. BEFORE adding a liquid detergent to any household bleach solution, read the labels to see if they contain ammonia or ammonium compounds. Bleaches should never be mixed with any detergents or cleaners containing ammonia. These-mixtures can cause harmful vapors. Follow all instructions on the label.

Option No. 2 - Use available commercial cleaners specifically formulated to clean mold and mildew from Exterior Insulated Finish Systems.

Recommendations to Avoid Mildew

1. Mildew/mold is an organic growth supported by warm, moist, shady conditions with the following contributing factors:

A. Climatic conditions: mold/mildew is more significant in a warm humid environment.

B. Texture of finish: coarse textures will collect more airborne dirt with potential organic nutrients than finer textures.

C. The proximity of shrubbery and trees: creates shade and reduces air circulation. This reduces natural evaporation.

D. Poor drainage from roofs: will maintain a high level of moisture in designated areas.

E. Internal moisture within Exterior Wall Systems: will maintain a high level of moisture in designated areas. This may be from internal condensation or physical leakage.

As indicated, each of these conditions is a contributing factor to mold/mildew. The climatic condition is an environmental issue. However, the locations for trees and shrubbery in southern climates may be positioned away from the structure, particularly the north elevation, to promote natural air circulation for natural evaporation.

PART 2 - AIRBORNE DIRT

General

The accumulation of dust and dirt in many locations can be a constant maintenance problem. Some contributing factors are as follows:

A. Site conditions - sources of dirt

B. Soil splashing against the system

C. Climatic conditions (sun, rain, wind, or temperature extremes)

D. Building location

1. City (high density- significant vehicular traffic and manufacturing with resultant airborne pollution)

2. Suburbs (low density- minor airborne pollution)

3. Near industrial manufacturing facilities

E. Amount of precipitation or rain (insufficient rainfall to be effective for normal self-cleaning action).

F. Exhaust venting onto finish areas.

Description

In general windborne dust and dirt is an inert accumulation that can possibly contribute to the discoloration of EIFS.

Typically, this is an aesthetic issue and will not affect the overall performance of the EIFS.

If it is suspected that a "chemical contamination" is a contributing factor to the discoloration, then a sample should be forwarded to an independent test lab to determine the contaminate. This information should then be reviewed with the EIFS manufacturer.

Cleaning and Prevention Recommendations

Option No. 1 For dirt accumulation at the first floor/ foundation from splash-back due to uncontrolled drainage from the roof.

*The cleaning procedure should consist of a household liquid detergent mixed with water.

1. Pre-wet the affected areas

2. Apply soapy water with soft bristle brush, scrub gently, let set for15-20 minutes. (Do not let solution dry on surface.)

3. Rinse off thoroughly with low pressure garden type hose.

*****Try the cleaning procedure in a small inconspicuous area to make sure it does not adversely affect the EIFS.

For more stubborn stains, it may be necessary to use a stronger cleaner formulated for EIFS.

Prevention of splash-back: Remove a layer of soil next to the foundation and replace with a layer of crushed stone or other mulch material to prevent splash-back of water onto the building.

Option No. 2 - This is for general airborne dirt accumulation. An evaluation should be made when it is aesthetically desirable to clean the entire building.

PART 3 - LAWN SPRINKLER OVERSPRAY

General

Reddish colored staining typically originates as a metallic stain from excessive chemicals or iron oxides, contained in the local water supply. This discoloration is a result of a stain from sprinkler overspray on the exterior wall system.

Description

These areas of discoloration are generally an aesthetic issue only. They can be removed with a commercial cleaner formulated for EIFS.

The longer these types of stains remain, the more difficult they will be to remove. In two to three years, these stains may become permanent. If the stains are permanent, it is necessary to neutralize the stains to prevent bleed-through and re-coat the affected area.

Recommendations to Avoid Lawn Sprinkler Overspray

I . Readjust or relocate the sprinklers that are the cause of the overspray.

PART 4 - SEALANT JOINTS

General

EIFS is a monolithic, barrier wall-type system, also referred to as a face sealed system. Newer applications include a drainage system behind the exterior surface. Regardless of whether the EIFS is the barrier type or the water management type, it is important to maintain the integrity of this barrier with a correctly performing sealant joint at all dissimilar materials (i.e., windows, doors, louvers, etc.), to prevent moisture intrusion. If the sealant is not maintained through some type of Preventative Maintenance Program, water intrusion problems may occur over time.

The life expectancy of a quality, correctly installed sealant material is 3-5 years under severe ultra-violet (sunlight) and weather extremes. In less than severe conditions, it may be 8-10 years before replacement should be considered. (Consult the sealant manufacturer for additional information.)

Recommendations for Observation of Sealant Joint Performance

When correctly detailed and properly installed, EIFS prevents water migration through the wall.

The water migration (leaks) will typically occur at one of the following:

I. Failure of sealant at building expansion joints.

2. Failure of sealant at transition to dissimilar material

A. Flashing component

B. Window/head, jamb or sill

C. Louver/Head, jamb or sill

D. Penetration through EIF System

1. Handrail connection details

2. Electrical conduit

3. Utility Piping

All leaks should be documented as to their location and whether they appear in gentle rains or wind driven rains, and from which direction. Also, determine how long the leak continues after the rain stops.

This information, in conjunction with a thorough observation of the exterior wall system, will assist in quickly locating the source of the leak for remedial repairs.

Field "Trouble Shooting" Guide

1. Observe the joint. There should be a uniform bead of sealant (uniform in width and appearance.)

2. Observe any separation within the sealant joint.

A. Adhesive failure - separation of sealant from dissimilar material.

B. Cohesive failure - separation of the sealant internally.

3. Observe aging. This is a progressive, natural change in the chemical and physical properties of the sealant material. Two-part polyurethane type sealants are self-sacrificing. The surface is worn away over time and appears as a chalking or oxidation type film that is constantly washed away by rainstorms. This is normal for this material and does not indicate failure.

4. Observe any discoloration and/or bleeding. This may represent a defective product deteriorating.

5. Observe deformation. This is any change of form or shape produced in a body by a stress or force.

6. Observe cracking, crazing or "alligatoring". These conditions represent a deterioration within the sealant joint induced by either excessive movement or aging.

For additional information, please contact the manufacturer. Or, you may wish to visit the EIFS Industry Members Association (EIMA) website at http://www.EIMA.com.