



## Stucco Evaluation Report

Vira Myers

**Property Address:**  
200 Country Club Drive  
Telford PA 18969



**Lunny Environmental Services**

**Rob Lunny**  
EDI Stucco Inspector PA-121  
2370 York Road, A9-C  
Jamison, PA 18929



EXTERIOR  
DESIGN  
INSTITUTE

MoistureFree  Warranty  


# Table of Contents

[Cover Page.....1](#)  
[Table of Contents.....2](#)  
[Intro Page.....3](#)  
[Invoice.....5](#)  
[1 Property Information.....6](#)  
[2 Moisture Readings.....7](#)  
[3 Detailed Photos.....13](#)  
[4 System Observations.....18](#)  
[Back Page.....20](#)

<b>Date:</b> 4/2/2015	<b>Time:</b> 01:30 PM	<b>Report ID:</b> 1420151
<b>Property:</b> 200 Country Club Drive Telford PA 18969	<b>Customer:</b> Vira Myers	<b>Real Estate Professional:</b> Mary Beth Allen BHHS Fox Roach Realtors

## INTRODUCTION

**You have contracted with Lunny Environmental Services to perform a moisture intrusion inspection in accordance with the standards of practice established by Exterior Design Institute (EDI) & Moisture Warranty Corporation. Your inspector is Rob Lunny EDI Certified Inspector PA # 121 & MWC # 1627**

**A. PURPOSE:** The purpose of an independent third party moisture inspection is to give an unbiased opinion as to the condition of the system as applied on the home as well as to help assess the condition of the stucco system by looking for visible installation flaws, inadequate water diversion, sealant failures and to conduct moisture readings using electronic moisture scanning devices. Please note that the provision of a scope of work and or estimates for remedial repairs is not the purpose of this inspection. Competitive estimates for repairs should be obtained from at least three qualified contractors.

*Further investigation may be needed to determine the extent of water damage, if any, and how best to modify your home to address any moisture problems that may be indicated by this inspection.*

**B. SCOPE OF INSPECTION:** This is a stucco inspection limited to the following:

- A visual examination of the condition of the stucco system, exterior sealants, flashings, windows, doors, roof-to-stucco transitions, parapets, gutters, deck-to-building connections, stucco terminations and any penetrations through the stucco system.
- Conducting of electronic moisture scanning of the building envelope per Exterior Design Institute protocol.
- Preparing a report of our observations of potential problem areas and recording any high readings found. The readings provided in the report are accurate indicators of the presence of retained moisture at the surface of the substrate or framing wood in the area tested at that given moment in time. These readings are not represented to be the absolute moisture content of the full thickness of the substrate or framing wood. The inspection provides information on specific areas of problems and defects. Moisture content in wood of 19% or more over a sustained period of time can cause wood and other organic materials to deteriorate. In any areas repaired, the areas should be opened in a progressive manner until clean dry materials are found.

Any damaged areas can then be dried and repaired. During the course of repairs we strongly recommend the use of a high quality moisture cure silicone with a low modulus of elasticity in addition to the installation of appropriate flashing details.

The report only reports on the condition of the structure at the specific locations indicated. Locations are determined by the inspector according to probable areas of possible moisture intrusion and in accordance with The Exterior Design Institute protocol. No judgment is intended or given for any areas not reported on. This report is not a structural engineering inspection report.

**C. LIMITATIONS OF LIABILITY:** Because this is a limited inspection of only the areas tested, we can make no guarantee, express or implied, that our observations and random moisture readings offer conclusive evidence that no installation or moisture problems exist, or that problems found are all-inclusive. This inspection company, its employees and any divisions shall not be liable for non-visual defects, unseen defects, unspecified defects or hidden damage and conditions existing on the subject property and hereby disclaims any liability or responsibility thereof. All parties concerned agree to hold harmless and indemnify this inspection company involving any liabilities that may result.

**D. FURTHER TESTING / INVESTIGATION:** Our policy is to rely on moisture meter readings as an indicator of relative moisture values between different test spots, not as an absolute value of water content in the substrate. It is difficult to determine if the structural wood of your home has been damaged in areas of high readings without 'probing' and/or removing a core sample of the stucco to allow for visual inspection. Should we feel that further investigation is needed this will be indicated. Additional charges will apply.

**E. REPAIR FOLLOW-UP AND ANNUAL INSPECTIONS:** A repair follow-up inspection should be conducted within three months after completion of the repairs to assess the effectiveness of the moisture modifications & repairs. This is extremely important. Bi-Annual inspections should also be scheduled to ensure that the stucco system remains dry. This way any sealant failures, stucco cracks, etc. can be caught and repaired promptly. Testing and maintaining the home on a regular basis is the best way to prevent costly repairs associated with moisture damage.

**This report is prepared exclusively for Rob Lunny clients. Reproduction and/or distribution is prohibited without our authorization.**

Thank You,

Rob Lunny

**Standards of Practice:**

Exterior Design Institute (EDI) Certified  
Inspector #PA-121, Moisture Warranty  
Corporation #1627, Member AWCI 8526,  
GAF Steep Slope Certified, ITC Certified  
Infrared Thermographer

**Type of building:**

Single Family (2 story)

**Square footage of building:**

3025

**Approximate age of building:**

10

**Home Faces:**

W-NW

**In Attendance:**

Owner & Inspector

**Style of Home:**

Town home

**Weather:**

Clear

**Temperature:**

40

**Humidity:**

60%

**Ground/Soil surface condition:**

Wet

**Last significant rain approximately:**

Within last week

**Weather resistant barrier:**

Tyvek

**Substrate (if known):**

OSB

**Type of Exterior:**

Dry Stack Veneer, OCS



**INVOICE**

Lunny Environmental Services  
 2370 York Road, A9-C  
 Jamison, PA 18929  
 Inspected By: Rob Lunny

Inspection Date: 4/2/2015  
 Report ID: 1420151

Customer Info:	Inspection Property:  200 Country Club Drive Telford PA 18969
----------------	--

Service	Price	Amount	Sub-Total
Invasive stucco testing	900.00	1	900.00
			<b>Tax \$0.00</b>
			<b>Total Price \$900.00</b>

**Payment Method:** Check  
**Payment Status:** Paid At Time Of Inspection  
**Note:** Thank you, please contact my office if you have any questions

**1. Property Information**

**Styles & Materials**

---

<p>Type of exterior:                  OCS                  Dry Stack Veneer</p>	<p>Stucco Thickness at areas probed:                  1/2 to 3/4 inch</p>	<p>Substrate:                  OSB</p>
<p>Water resistive barrier:                  Tyvek</p>		

**Items**

---

**1.0 Property Information**

**Comments:**

The subject property is a 10 year old Townhome located in the Indian Valley Greens development in Telford PA. The home has a gable style roof with a 3 tab dimensional shingle roof covering without a drip edge installed and double hung wood & fixed pane windows. The exterior cladding is a combination of dry stack stone and stucco. The windows and entry have foam details installed around them also. Prior documentation shows the home was sealed and all joints caulked in 2012 and has done a good job protecting the majority of the home.

The purpose for this evaluation was to determine if moisture intrusion was occurring between the exterior cladding system and underlying wood substrate in a sufficient amount as to cause deterioration of the substrate. The entire building was visually inspected on the interior and exterior, Invasive testing was performed on the exterior. The main area of concern seem to be the sunroom. The wall with the eyebrow window and the doorway to the deck in the sunroom. Interior inspection revealed interior moisture intrusion in the basement under the sunroom deck entry and moisture stains were observed on the head of one of the sunroom windows. Slightly elevated readings were noted on one side of the chimney. Remediation action is recommended for the sunroom areas that recorded elevated or NR readings. Caulking/sealing the flashing detail over the chimney and re-securing any loose veneer is recommended for the chimney.

FEMA, ASTM, BOCA, the IRC and all the major code bodies recommend a homeowner take steps to correct moisture intrusion & repair/replace wood substrate with a moisture content above 19.5% to reduce the risk of Organic growth. The first section of the report will list the moisture content in the substrate and the locations they were taken from. The second portion of the report are detailed photographs of the system and components.

Invasive stucco reports are "observe & report" style inspections. We are not affiliated with any stucco remediation company nor do we make recommendations for contractors. We consider this a conflict of interest. In areas of elevated moisture readings we recommend core samples be taken prior to performing any work to provide visual verification as to the probe readings.

We recommend this report be provided to certified remediation contractors to determine the necessity, extent and cost for any repairs.

Should you have any questions concerning this report please feel free to contact our office.

## 2. Moisture Readings

### Items

#### 2.0 Probe Meter Reading Ranges

##### Comments:

The legend below describes the test equipment used and what the readings mean. Small 3/16 holes are drilled into specific locations and the two small probes are inserted to contact the substrate. The electrical resistance between the probes measure the moisture content in the substrate and are the readings listed in the report. Readings listed in black are normal, readings listed in red require action. The meter is calibrated prior to the evaluation and after every 2nd reading. A definition of the moisture readings and what they mean is listed below.

**Readings listed in red on the report indicate some level of action is strongly recommended**

#### Delmhorst Moisture Probe Meter BD2100

- 6 - 12% Normal/typical reading for wood substrate
- 13-15% Some water is getting in but not likely to cause damage
- 16-19% Elevated moisture level present, damage possible, repairs to sealant joints required
- 20-40% High moisture level present, damage probable, remediation recommended
- NR No Resistance to substrate indicating deterioration has occurred to wood substrate, remediation is required
- F Framing Probe, no resistance to substrate indicating deterioration has occurred to wood substrate, remediation is required

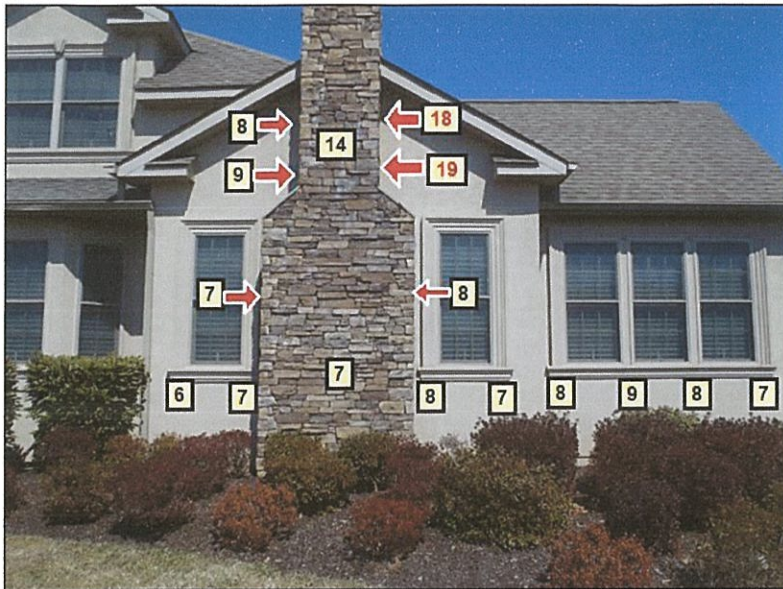


2.0 Item 1(Picture) Moisture meter was calibrated prior to use and after every 2nd reading. Probe tips are teflon coated and protected with shrink wrap to reduce the risk of outside interference

#### 2.1 Front Elevation Moisture Readings

##### Comments:

The front elevation was broken into several sections to allow for a better understanding of moisture readings and the locations they were taken from. The right side of the chimney had some loose veneer and only slightly elevated moisture readings. The substrate on the chimney was firm in all areas tested.



2.1 Item 1(Picture) Right front moisture readings



2.1 Item 2(Picture) Left front moisture readings





2.1 Item 3(Picture) Left side of front porch, efflorescence noted on veneer

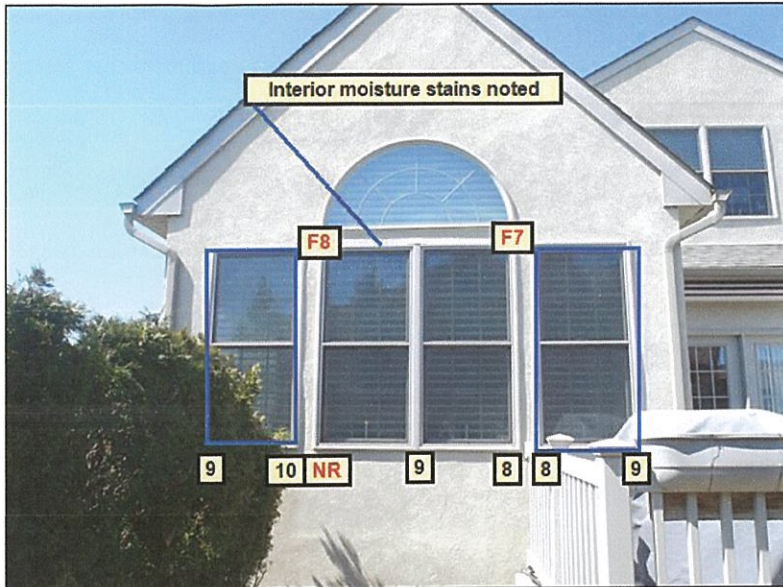


2.1 Item 4(Picture) Front of garage

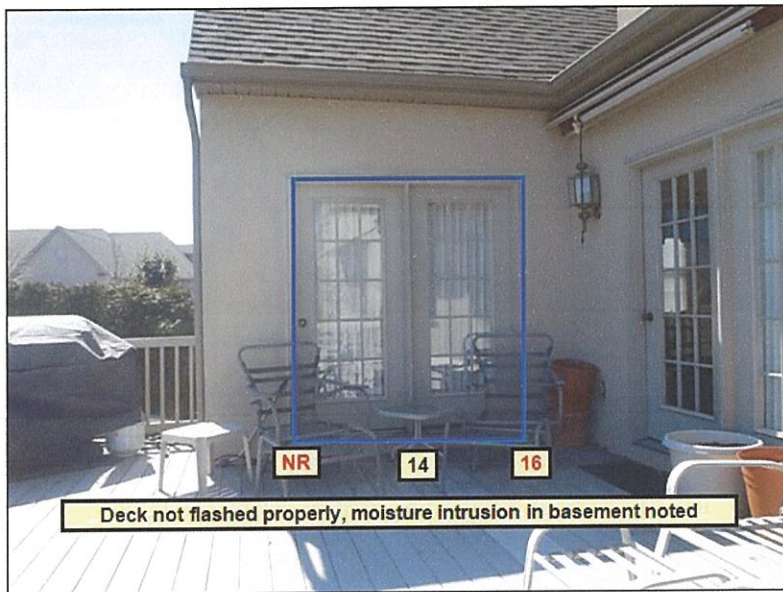
**2.2 Right Elevation Moisture Readings**

**Comments:**

The right elevation recorded elevated and NR moisture readings. NR (no resistance to substrate) and F (framing member) are an indication that sufficient water has penetrated the system and deteriorated the substrate between the stucco system and the framing members of the home.



2.2 Item 1(Picture) Right elevation sunroom windows



2.2 Item 2(Picture) Doorway to sunroom



2.2 Item 3(Picture) Right elevation deck entry moisture readings

### 2.3 Left Elevation Moisture Readings

**Comments:**

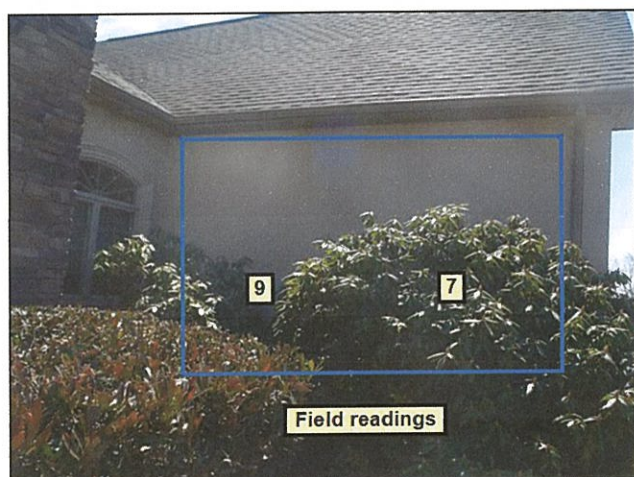
The left elevation was the side of the garage and the rear window behind the garage for the first floor bath. No elevated moisture readings were recorded on these locations.



2.3 Item 1(Picture) Left elevation garage moisture readings



2.3 Item 2(Picture) Rear bathroom window b moisture readings behind garage



2.3 Item 3(Picture) Rear garage wall, no major penetrations, field readings taken

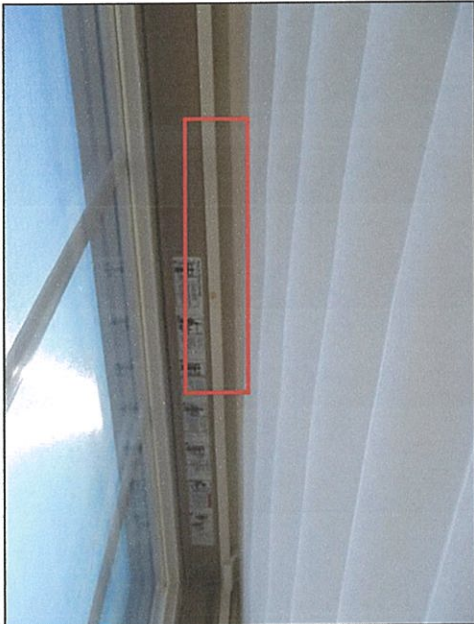
### 3. Detailed Photos

#### Items

#### 3.0 Detailed photos

Comments:

This section of the report are detailed photos of the system and installed components.



3.0 Item 1(Picture) Moisture stains on interior window under eyebrow window in sunroom



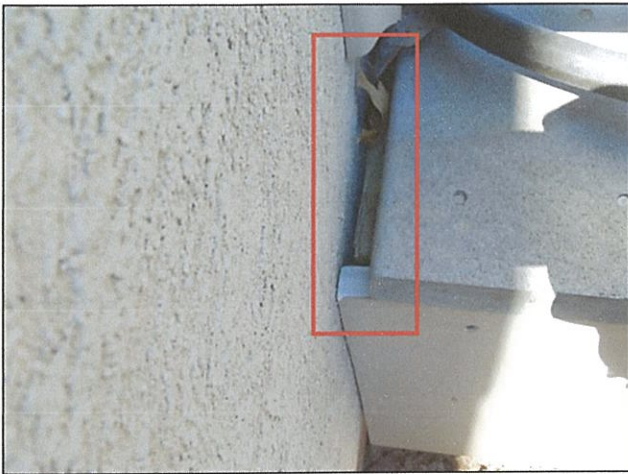
3.0 Item 2(Picture) Moisture intrusion under sunroom doors in basement box beam



3.0 Item 3(Picture) Moisture intrusion noted on TGI in basement under sunroom entry



3.0 Item 4(Picture) Efflorescence noted on dry stack veneer, some stone were loose



3.0 Item 5(Picture) No Z flashing noted on deck stringer board

**sto**

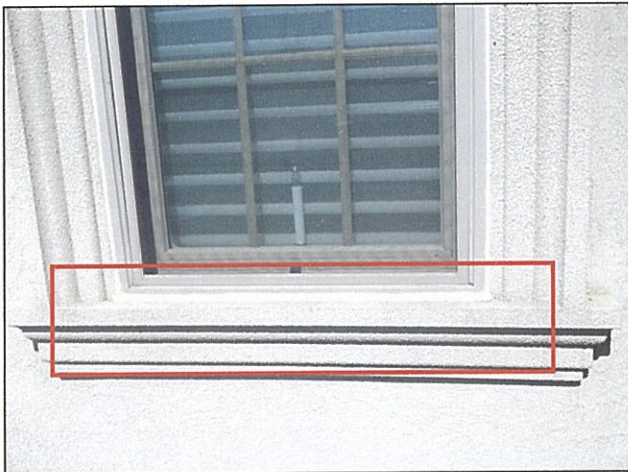
**StoPowerwall™ NEXT Deck Flashing** Detail No.: 5.32ESL  
Date: July 2009

**Notes:**

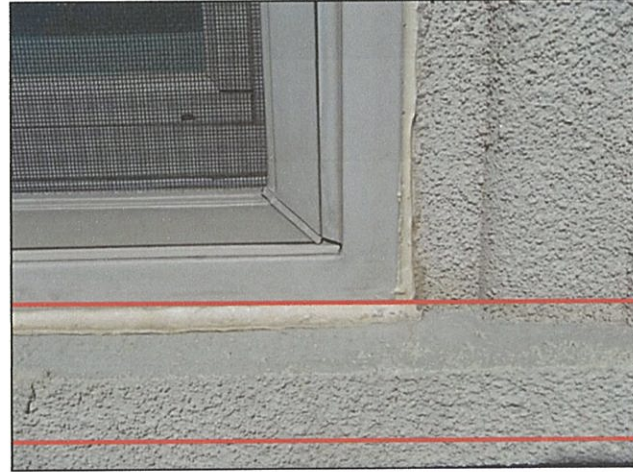
- 1) Install Sto EmeraldCoat® on the sheathing as per plans and specifications.
- 2) Install deck flashing to divert water away from penetrations and to drain water to the exterior of the finished cladding.
- 3) Provide backer rod and sealant between the deck flashing assembly and the stucco casing beads installed around the vertical sides and sill.
- 4) Provide slip sheet between Sto EmeraldCoat® and metal lath; minimum one layer building paper. Paper may be omitted when permitted by local code authority or when paper backed stucco lath is used.

**Attention**  
This product is intended for use by qualified professional contractors, not consumers, as a component of a larger construction assembly as specified in a qualified architectural specification or building code. They should be advised in accordance with these specifications and this information. See STO Corp. website for detailed information on products, accessories, and application. For the latest information on products, accessories, and application, see the STO Corp. website. For the latest information on products, accessories, and application, see the STO Corp. website. For the latest information on products, accessories, and application, see the STO Corp. website.

3.0 Item 6(Picture) Proper deck flashing detail



3.0 Item 7(Picture) No flashing details noted on foam trim bands on windows. All have been caulked



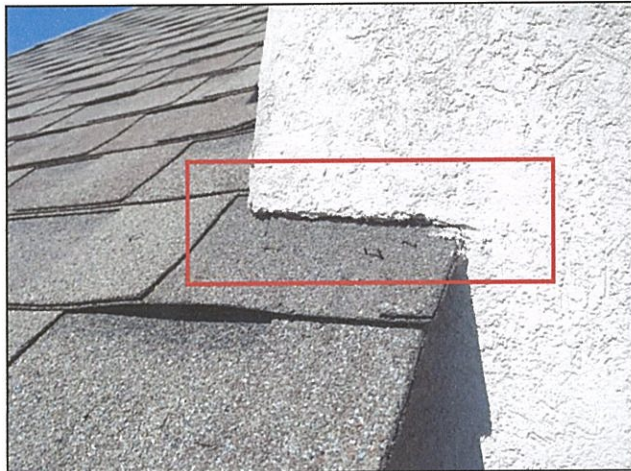
3.0 Item 8(Picture) Finish coat on foam trim bands has deteriorated on front first floor windows



3.0 Item 9(Picture) No kickout flashing installed at roof/wall intersection to right of main front entry. Moisture reading below was 7%



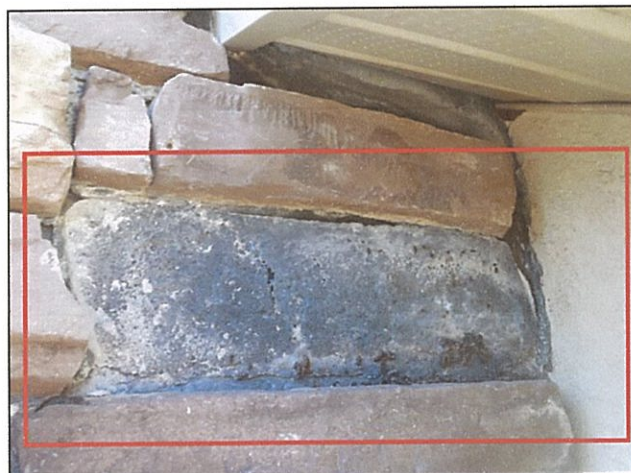
3.0 Item 10(Picture) Chimney cap was in good condition



3.0 Item 11(Picture) Stucco in contact with shingles



3.0 Item 12(Picture) Stucco measured 1/2" thick in most locations



3.0 Item 13(Picture) Veneer stone on right side of chimney was loose and detached, stone was re-set



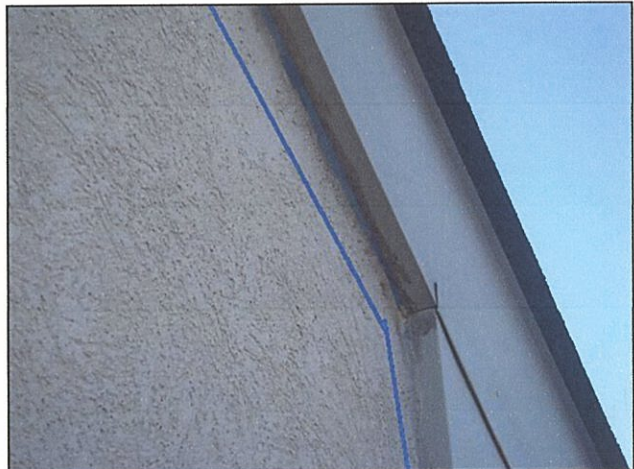
3.0 Item 14(Picture) Wire lath and OSB visible under soffit on chimney



3.0 Item 15(Picture) Multiple cracks noted on left and right side of sunroom deck entry door

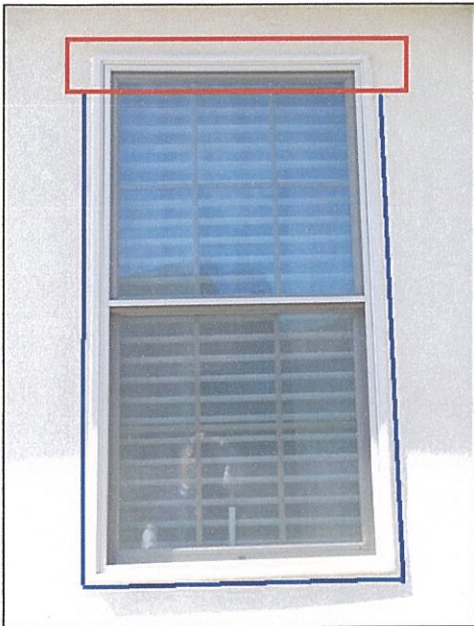


3.0 Item 16(Picture) Moisture damage and heavy sealant on sunroom deck entry door



3.0 Item 17(Picture) Fascia & rake trim was caulked at stucco intersection





3.0 Item 18(Picture) No head flashing above windows or soft joints were installed on sides/bottom of windows



3.0 Item 19(Picture) No flashing boxes were installed on exterior penetrations

## 4. System Observations

### Items

---

#### 4.0 Delamination / Bulging of Systems

Comments: NO

#### 4.1 Cracks

Comments: Yes

#### 4.2 Trim Band Cracks

Comments: NO

#### 4.3 System Surface Staining - Algae / General

Comments: NO

#### 4.4 Rust Noted

Comments: NO

#### 4.5 Weep Screed Installed

Comments: NO

#### 4.6 Interior window leaks

Comments: Yes

#### 4.7 Kickout flashing roof/wall intersections

Comments: NO

#### 4.8 Control joints installed

Comments: NO

#### 4.9 Expansion joints installed

Comments: NO

#### 4.10 Window head flashing installed

Comments: NO

#### 4.11 Soft joints/casing beads installed around windows

Comments: NO

#### 4.12 Soft joints/casing beads installed around doors

Comments: NO

#### 4.13 Adequate space between stucco and shingles

Comments: NO

#### 4.14 Drip edge installed

Comments: NO

#### 4.15 System extends over foundation

Comments: Yes

#### 4.16 System is terminated above grade

Comments: NO

#### 4.17 Foam window sill accents

Comments: Damage Noted

#### 4.18 Proper flashing detail at stone/stucco intersection

Comments: NO

#### 4.19 2 inch spacing of stucco and hardscape

Comments: NO

**4.20 4 inch spacing of stucco and softscape**

**Comments:** NO

**4.21 Deck Flashing**

**Comments:** Not adequate



## Stucco/EIFS Terms & Definitions

**Abrasives:** Substance that is rough or scratches.

**Admixture:** Material other than water, aggregate or basic cementitious material added to the batch before or during job mixing.

**Aggregates:** A granular material such as sand.

**Basecoat:** Any stucco coat applied before the application of the finish coat. The combined scratch and brown coats make up the basecoat.

**Bonds:** Adhesion of stucco to other surfaces that it is applied against.

**Bonding Agent:** A compound applied as a coating to a suitable substrate to enhance a bind between it and the next layer, as between a subsurface and a succeeding stucco application.

**Brown Coat:** In multiple coat work, the second coat applied over the scratch coat. In two-coat work, brown coat refers to the double-up basecoat. The brown coat is the coat directly beneath the finish coat.

**Building Paper:** Also referred to as tar paper or black paper it comes in different ratings such as 30 minute or 60 minute. The minute rating refers to the time it takes for water sitting on the paper to pass through it.

**Cementitious:** Made of or from cement.

**Checking:** Development of shallow cracks at closely spaced but irregular intervals in the stucco surface. (Also known as craze cracks.)

**Coat:** A thickness of stucco applied in a single operation.

**Cold Joint:** The juncture of fresh stucco application adjustment to set plaster.

**Control Joints:** A flexible metal component designed to control the shrinkage of cement plaster. It is usually placed at each floor break of a building.

**Craze Cracks:** Fine, random cracks or fissures that may appear in a stucco surface, caused by shrinkage.

**Cured:** The process of cement hydrating and chemically changing to become hard.

**Delamination:** Coming unglued or unbonded from something.

**Diversion Flashings:** A flashing that is used to redirect the flow of rainwater.

**Drip Cap Flashing:** A molding over an opening for catching and shedding rain water.

**Eaves troughs:** Plastic or metal troughs that redirects rainwater from the roof to the ground.

**Expansion Joint:** a complete structural separation of building elements that allows for independent movement of abutting elements without damage to the assembly. Typically this is a separation through the EIFS as well as the substrate and framing or masonry.

**Efflorescence:** A deposit of salts or bases, usually white, formed on the stucco surface. Water-soluble substances emerge in solution from within the plaster and are deposited during evaporation.

**EIFS:** Exterior Insulation and Finish System. A non-load bearing exterior wall cladding system consisting of a thermal insulation board, adhesively and/ or mechanically attached to the substrate, base coat with reinforced fiberglass mesh and a textured finish coat.

**EIFS-MD:** EIFS with a drainage plane. A non-load bearing exterior wall cladding system consisting of a thermal insulation board, adhesively and/ or mechanically attached to the substrate, base coat with reinforced fiberglass mesh and a textured finish coat with a drainage plane allowing incidental moisture to drain to the face of the cladding system.

**Finish Coat:** The final layer of stucco (job-site mixed or pre-manufactured) applied over basecoats or direct to concrete, comprised of either cementitious or acrylic material

**Flashing:** A thin, usually metal material used to prevent water entry or to direct the flow of water in a desired direction between two or more materials or surfaces.

**Floating:** Act of compacting and leveling a stucco basecoat; act of bringing the aggregate to the surface of finish-coat stucco.

**Framing:** Structural members such as studs, joists, headers, beams, columns, girders, trusses, etc. of wood or steel.

**Head Flashing:** An aluminum or plastic profile designed to prevent water leaking over the top of a window or door when it has been installed into a building

**Kickout Flashing:** An angled piece of flashing that diverts rainwater away from the exterior cladding and into the gutter.

**Lath:** Generally the reinforcement base to which stucco is applied, secured to a substrate with appropriate fasteners. Commonly a welded wire mesh, woven wire or an expanded metal mesh.

**Lamina:** Base coat, fiberglass-reinforcing fabric/ mesh and finish coat as a composite unit. Sometimes a primer coat is also incorporated, depending on the application and manufacturers system requirements.

**Mullion:** The vertical member separating the panels or glass of a window or door system.

**OCS:** One coat stucco system consisting of a wire lath, scratch coat and finish coat.

**Oriented strand board (OSB):** It has replaced plywood as wood sheathing and is made from logs that are chipped and glued together.

**Parging:** The application of a thin Portland cement coat over a solid concrete or masonry wall, generally without lath reinforcement, to improve the aesthetic appearance of the exposed wall area.

**Rainscreen:** A method of handling water penetration, enhancing venting and improve the drying capacity of wall assembly, consisting of a water resistant outer cladding, a measurable drained and vented cavity and a water impermeable back-up wall.

**Sealant:** Installed with or without a backer rod for the purpose to allow thermal expansion and contraction of dissimilar cladding components to prevent moisture intrusion at system penetration and terminations.

**Sealant System:** The use of primer, backer rod or bond breaker in conjunction with the installation of sealant.

**Scoring:** Grooving by scratching or scoring, usually horizontal, of the scratch coat to provide mechanical keys for the brown coat.

**Soffit:** The underside of a structural component, such as a beam, arch, staircase, or cornice.

**Stucco Stop Bead:** Provides a straight edge for most perimeters of the stucco membrane; it separates the stucco membrane from adjacent materials such as roof shingles; and it provides a guide of the stucco membrane's profile.

**Substrate:** Same as sheathing. Its an underlying material that supports or is bonded to another material on its surface.

**Tyvek:** Trade name for a house wrap that is made from fine, high-density polyethylene fibers. Tyvek is more tear resistant than building paper.

**Water resistant barrier:** A thin membrane, typically 5 to 15 mils thick (.005 to 0.015 in. or 0.13 to .38 mm) which is intended to resist liquid water that has penetrated behind the exterior cladding.

**Weep holes:** Small holes in the bottom of windows that allows water to drain out.

**Weep Screed:** is a vinyl or metal track acting as a flashing to allow for drainage at the bottom of the drainage plane. It is the starting point of every drainage plane.