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STUCCO REPORT

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SUMMARY

1: GENERAL INFORMATION

Information

Previous Inspection: **No previous inspection**

No evidence of a previous inspection was noted

Previous Remediation: **No previous remediation**

No evidence of previous remediation to the cladding system is noted.

Notes: **Old standards/new standards**

The observations made herein are based not on the standards of stucco installation at the time of construction (1982), but rather the current standards, which have been developed over time in order to address the deficiencies on past past standards.

2: INSPECTION TYPE

Information

Inspection Type: Level 2

Level 2 - Stucco/EIFS/Stone Veneer Moisture Inspection - The primary purpose of this inspection is to evaluate the current performance of the cladding system on this structure. The secondary purpose is to offer the client the best remedial options available. The entire stone and stucco systems were inspected visually. Installation defects were noted, and moisture probe readings were performed at the discretion of the survey professional. These probe readings are typically performed at all areas of potential moisture penetration based on the previous visual inspection.

Understanding Moisture Readings -

Our inspection protocol requires that the entire adhered masonry cladding system be inspected visually. Because of the nature of the components utilized in Stone or Hard-Coat Stucco Systems, such as metal lath and Portland cement, the Tramex Wet Wall Detector (surface scanner), which is commonly used to detect moisture behind Exterior Insulation & Finish Systems, cannot be effectively utilized; therefore detection of moisture intrusion can only be conducted through the use of a penetrating probe meter.

In most cases moisture readings are recorded in wood scale as determined by the substrate material being tested. If it is determined that the substrate is a product other than wood-based moisture testing will be adjusted accordingly. Wood scale moisture readings may vary slightly based on regional considerations and which moisture meter is being utilized and should be should be interpreted as follows:

In all areas where moisture readings are in excess of 29% consideration should be given to the removal of the Stone or Stucco System to allow the assessment and repair of the damaged substrate and affected structural members. Experience data has shown that when moisture levels are above 29%, there is frequently damaged substrate, if not at the exact probe location, in the adjacent sheathing and/or framing. It is believed that most damage can be repaired, and with proper remediation and ongoing maintenance should prevent future moisture intrusion.

Occasionally moisture readings will indicate "acceptable" levels, however, upon probing; the substrate is soft or will offer little or no resistance. This may be an indication of "dry rot", a condition that can occur when wood is exposed to excessive moisture over an extended period of time and the wood fibers have decayed to the point that the wood can no longer hold moisture. When this condition is discovered the Stone System should be removed to allow the inspection and repair of the damaged substrate and affected structural members.

In areas of the system where moisture readings are between 21% and 29% and probing has indicated that the substrate was in sound condition, although some moisture penetration has occurred, it is believed that through proper remediation, containment and isolation of points of moisture entry, would allow the previous effects of moisture to dry, producing no negative impact to the structure.

It should be understood that variables other than precise moisture content may be present that may alter our recommendations.

Important Note: The test equipment is used to help locate problem areas. It must be understood that the test equipment is not an exact science but rather good tools used as indicators of possible problems. At times, because of hidden construction within the wall cavity, the meters get false readings or no readings at all. Some meters will pick up on metals, wiring, unique wall finishes, etc. Positive readings do not always mean there is a problem, nor do negative readings necessarily mean there is not a problem. We do not use the equipment to obtain exact moisture content, but rather to obtain relative readings between suspected problem areas and non-problem areas. This information is then used to help determine potential problem areas which may warrant more investigation.

3: MOISTURE READINGS

Information

Understanding Your Report

In general, we interpret moisture readings in the following manner:
6% to 15% with a firm substrate = Low Moisture Level
16% to 20% with a firm substrate = Elevated Moisture Level
21% or above = High Moisture Level
NR = No Resistance offered by the substrate. Advanced rot has occurred.
Soft = The substrate is deemed to be softer than is acceptable. Rot has begun, but not yet advanced to full deterioration.
Any locations marked with an 'x' were deemed inaccessible, unsafe, or otherwise untestable. These locations are excluded from this report. The limitation is noted along with the photograph.

Observations

3.1.1 Front Elevation Moisture Readings:

SOFT

Although there were no HIGH moisture readings on this elevation, the substrate was noted to be soft and/or non-existent, indicating the likelihood of structural damage at the areas that are noted in red. This deterioration has been caused by continuous moisture intrusion due to lack of proper flashing details and/or a lack of proper system sealants at penetrations in the system. The system should be opened up and the stucco removed until clean, dry substrate is found. Structural repairs should be made as needed and the system should be re-installed as per ASTM standards.

Action should be taken immediately to correct these conditions before further moisture intrusion and/or damage occurs. Specific prescriptions for remediation are outlined in the Repair & Remediation Recommendations to follow.

3.2.1 Right Elevation Moisture Readings:

LOW MOISTURE

Noted moisture probing in critical areas on this elevation did NOT reveal any elevated or high moisture levels at the time of this inspection. There may be other moisture maps in this report that show specific areas on this elevation that do reveal elevated or high moisture readings. If so, they will be specifically called out.

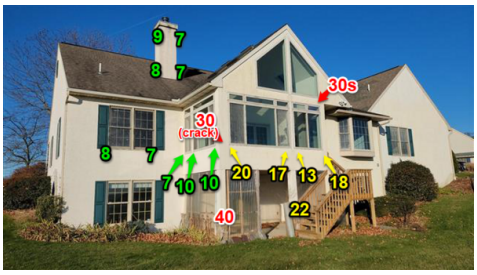
Although no elevated moisture readings were recorded at the time of this inspection, conditions may be present that may cause moisture problems in the future. Action should be taken now to correct these conditions before moisture intrusion and/or damage occurs. Specific prescriptions for remediation are outlined in the Repair & Remediation Recommendations to follow.

3.3.1 Rear Elevation Moisture Readings:

ELEVATED AND HIGH

There were ELEVATED & HIGH moisture readings on this elevation. The substrate was noted to be soft and/or non-existent, indicating the likelihood of structural damage at the areas that are noted in red. This deterioration has been caused by continuous moisture intrusion due to lack of proper flashing details and/or a lack of proper system sealants at penetrations in the system. The system should be opened up and the stucco removed until clean, dry substrate is found. Structural repairs should be made as needed and the system should be re-installed as per ASTM standards.

Action should be taken immediately to correct these conditions before further moisture intrusion and/or damage occurs. Specific recommendations for remediation are outlined in the Evaluation Summary and narratives on the photos to follow.



3.4.1 Left Elevation Moisture Readings:

LOW MOISTURE

Noted moisture probing in critical areas on this elevation did NOT reveal any elevated or high moisture levels at the time of this inspection. There may be other moisture maps in this report that show specific areas on this elevation that do reveal elevated or high moisture readings. If so, they will be specifically called out.

Although no elevated moisture readings were recorded at the time of this inspection, conditions may be present that may cause moisture problems in the future. Action should be taken now to correct these conditions before moisture intrusion and/or damage occurs. Specific prescriptions for remediation are outlined in the Repair & Remediation Recommendations to follow.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4: REPAIR & REMEDIATION RECOMMENDATIONS

Information

Report Limitations:

REPORT LIMITATIONS

This report is intended only as a general guide to help the client make their own evaluation of the overall condition of the home, and is not intended to reflect the value of the premises, nor make any representation as to the advisability of purchase. The report expresses the personal opinions of the inspector, based upon the inspector's visual impressions of the conditions that existed at the time of the inspection only. The inspection and report are not intended to be technically exhaustive, or to imply that every component was inspected, or that every possible defect was discovered. No disassembly of equipment, opening of walls, moving of furniture, appliances or stored items, or excavation was performed. All components and conditions which by the nature of their location are concealed, camouflaged or difficult to inspect are excluded from the report. The inspection is performed in compliance with generally accepted standard of practice, a copy of which is available upon request.

Systems and conditions which are not within the scope of the inspection include, but are not limited to: formaldehyde, lead paint, asbestos, toxic or flammable materials, and other environmental hazards; pest infestation, playground equipment, efficiency measurement of insulation or heating and cooling equipment, internal or underground drainage or plumbing, any systems which are shut down or otherwise secured; water wells (water quality and quantity) zoning ordinances; intercoms; security systems; heat sensors; cosmetics or building code conformity. Any general comments about these systems and conditions are informational only and do not represent an inspection.

The inspection report should not be construed as a compliance inspection of any governmental or non-governmental codes or regulations. The report is not intended to be a warranty or guarantee of the present or future adequacy or performance of the structure, its systems, or their component parts. This report does not constitute any express or implied warranty of merchantability or fitness for use regarding the condition of the property and it should not be relied upon as such. Any opinions expressed regarding adequacy, capacity, or expected life of components are general estimates based on information about similar components and occasional wide variations are to be expected between such estimates and actual experience.

We certify that our inspectors have no interest, present or contemplated, in this property or its improvement and no involvement with trades people or benefits derived from any sales or improvements. To the best of our knowledge and belief, all statements and information in this report are true and correct.

Any dispute, controversy, interpretation, or claim including claims for, but not limited to, breach of contract, any form of negligence, fraud, or misrepresentation arising out of, from or related to, this agreement or arising out of, from or related to the inspection or inspection report shall be submitted first to a Non-Binding Mediation conference and absent a voluntary settlement through Non-Binding Mediation to be followed by final and Binding Arbitration, if necessary, as conducted by Construction Dispute Resolution Services, LLC or Resolute Systems, Inc. utilizing their respective Rules and Procedures. If the dispute is submitted to Binding Arbitration, the decision of the Arbitrator appointed there under shall be final and binding and the enforcement of the Arbitration Award may be entered in any Court or administrative tribunal having jurisdiction thereof.

NOTE: THE CLIENT AND LIBERTY INSPECTION GROUP WOULD HAVE A RIGHT OR OPPORTUNITY TO LITIGATE DISPUTES THROUGH A COURT AND HAVE A JUDGE OR JURY DECIDE THE DISPUTES BUT HAVE AGREED INSTEAD TO RESOLVE DISPUTES THROUGH MEDIATION AND BINDING ARBITRATION.

Repair and Remediation Reccommendations:

This report is an overview of the system as applied on the building and the compliance with current building standards and the American Society for Testing and Materials (ASTM) standard specifications for the installation of stucco. This report only reports on the condition of the structure at the specific locations indicated. Locations were determined by the inspector according to probable areas of possible moisture intrusion and in accordance with accepted industry standards. No judgment is intended or given for any areas not reported on. This report is not a structural engineering inspection report.

Please refer to IBC 2001, IRC 2004-2014, ASTM Standard Specification for Application of Stucco, Adhered Stone, and EIFS applications, local building codes and manufacturers details for information on required detailing and installation of the stucco system. In addition refer to the appropriate ASTM standards for wire lath installation and fastenings, as well as the required thickness of the stucco application, and the method of installation of the building wrap and overlaps that should be adhered to. Additional information and details can be obtained from the Association for Lath and Plaster and AWCI.

The following list are items that are required to be repaired to repair any damage, correct any deficiencies in the system, and ensure the long-term integrity of the system.

Observations

4.1.1 Remedial Actions and Repairs

MAINTAIN THE STUCCO SYSTEM

Initiate Proper Stucco Maintenance Plan

Stucco should be inspected annually for defects including deteriorated caulking or sealant, significant cracks, bulging and/or delamination. You should also be inspecting for stains that have recently developed. While stains are not necessarily indicative of a problem, they may indicate a problem and should be further evaluated by a certified stucco inspector. This is especially true of stains under a kickout location. If stucco repairs are needed, it is important to have the repairs completed in a timely fashion to prevent damage to your home.

The areas where stucco meets a window, door, electrical box, vent(s), mechanical penetrations, or any other wall penetrations, are areas that should be inspected regularly. It is critical that the sealant at these locations be applied properly and in accordance with ASTM standards. If you see any signs of failure at these locations, you must repair them.

Ensure that all joints and gaps between stucco and dissimilar materials are sealed properly (i.e. stucco to wood, metal, concrete, stone, vinyl, etc.). Check for any adhesion or sealant failures at these locations and repair immediately. All utility breach locations around the building need to be caulked. This includes, but is not limited to, pipe and wire penetrations, outlets, vent covers, HVAC penetrations, utility boxes and any other type of penetration. Seal the perimeter of all light fixtures leaving an opening at the bottom of the mounting plate for weepage. Seal ALL penetrations including downspout fasteners and the holes for the shutter plugs which attach the shutters to the cladding system. Check bore hole locations made during the testing process to ensure sustained performance of the sealant.

Stucco industry details require soffits/fascia/rake boards to lap over the masonry cladding by a minimum of 1". If this standard is not met, these terminations with the cladding system must be sealed to prevent moisture intrusion due to wind-driven rain.

The minimum width and depth of any sealant application should be ¼" by ¼". The depth of sealant may be equal to the width of joints that are less than 1/2" wide. For joints ranging from ½" to 1" wide, the sealant depth should be approximately one-half of the joint width. The maximum depth of any sealant application should be 1/2" (13 mm). If the joints are larger than 1" contact the caulking manufacturer for guidance. Backer rods or bond breaker tape should be used for all joint applications.

We recommend using high sealants that are a single component silicone formulation that cures in the presence of atmospheric moisture to produce a durable, flexible and ultra-low-modulus silicone rubber building joint seal, such as Dow Corning® 790 Silicone Building Sealant, Pecora 890NST, and Sikaflex 15 LM sealant. These sealants can be purchased online at <https://www.amazon.com> or <https://www.kenseal.com>. Caulk joints should be installed per industry standards and manufacturer's specifications.

Several weep holes are at the bottom of each windowsill. They allow water to exit from the windowsill track. Using a small pin or paper clip annually inspect these holes to ensure they are clear of debris.

A mild cleaner and water can be used to remove most stains. Pre-wetting the surface will overcome some absorption of dirty wash water from being absorbed back into the dull finish. Use of a garden hose and a jet nozzle in combination with a mild cleaner will clean effectively. Do not hold the nozzle to close to the surface because the high pressure may erode some of the finish. Pressure washers are not recommended because they will erode the finish and can cause damage.

It is the nature of stucco to experience some cracking. These small cracks are normal and do not require any maintenance or repair. If a crack exceeds 1/8 of an inch in width then the crack should be repaired. Repairing stucco cracks is completed by adding a small amount of stucco to the crack. Do not put caulk into the crack. If you experience a crack wider than 1/8 of an inch please contact your contractor so the proper resolution can be determined. Typically, a larger crack can be broken back and patched or an expansion joint can be added.

Gutters or sprinkler systems should direct water away from the stucco walls of your home. The continual spraying of water onto stucco walls can damage stucco, create stains, and allow green algae to grow on stucco walls.

Stucco is a very durable finish material with a typical life span of 50-80 years or more. Although it is one of the most durable surfaces available, it also features the lowest annual maintenance cost when compared to other siding materials. When properly maintained, your stucco system will provide many years of service for your home

4.1.2 Remedial Actions and Repairs

PARTIAL TEAR OFF

Partial Tear Off

The locations where high moisture readings or soft substrate were noted should be removed in a progressive manner until clean dry substrate is found. This may include removal of windows and doors, modification or addition of flashings and replacing any damaged substrate and/or framing.

Structural repairs should be made as required and the system should be re-installed as per ASTM standards outlined herein.

4.1.3 Remedial Actions and Repairs

KICKOUT FLASHING MISSING

Install Kickout Flashing

Kickout flashing should be installed into the system according to the specifications noted herein. Kickout flashing should be installed at all primary and secondary kickout locations (secondary locations include chimneys stacks and washes, bay windows, etc). When installing kickout flashing/diverters use DryFlekt® type or equivalent. Kickout flashing should at least 6" x 6" x 12" in size. Kickout flashing should penetrate the stucco cladding and be set against the substrate with the system applied over it. The base of the kickout should be set on the roof deck with the roof coverings and tar paper set over the top of the base of the kickout. On completion both the front and back of the kickout bucket should be caulked.

5: SYSTEM THICKNESS

Observations

5.1.1 System Thickness

LESS THAN 1/2

The thickness of the system was measured either by core sampling or the removal of an attachment or by moisture probing. The system thickness was found to be Less than 1/2" - This is considerably less than the ASTM minimum standard. This system thickness is an approximation based on the limited sampling taken. The system thickness can vary greatly. The ASTM minimum standard for traditional hardcoat stucco is 7/8". The ASTM minimum standard for the base of an adhered stone veneer system is 3/4". EIFS and other synthetic system each have a minimum standard based on the type of system and substrate utilized.

6: WEATHER RESITIVE BARRIER TYPE

Observations

6.1.1 Barrier Type

FELT - 2 LAYER

When stucco is installed over a wood-framed structure with wood-based sheathing, it is required that a water-resistive vapor-permeable barrier with a performance at least equivalent to two (2) layers of water-resistive barrier complying with ASTM E 2556, Type 1, (e.g. Two layers of 30 lb. felt paper) or a water-resistive barrier which is separated from the stucco by an intervening, substantially nonwater-absorbing layer or drainage space. The existing system met this minimum standard.

7: SUBSTRATE - SHEATHING TYPE

Observations

7.1.1 Sheathing Type

OSB

Oriented Strand Board - Oriented strand board (OSB), also known as sterling board, sterling OSB, and aspenite, is an engineered wood particle board formed by adding adhesives and then compressing layers of wood strands (flakes) in specific orientations.

Core Sample

8: ELEVATIONS

Observations

8.1.1 Front Elevation Type:
Hardcoat Stucco

8.1.2 Front Elevation Type:
Adhered Manufactured Stone

8.1.3 Front Elevation Type:
Was This Elevation Inspected? - Yes.

8.2.1 Right Side Elevation Type:
Hardcoat Stucco

8.2.2 Right Side Elevation Type:
Was This Elevation Inspected? - Yes.

8.3.1 Rear Elevation Type:
Hardcoat Stucco

8.3.2 Rear Elevation Type:
Was This Elevation Inspected? - Yes.

8.4.1 Left Elevation Type:
Hardcoat Stucco

8.4.2 Left Elevation Type:
Was This Elevation Inspected? - Yes.

9: INTERIORS

Observations

9.1.1 Interior Findings

MOISTURE METER NO SIGNS

The inspector inspected the basement (if present) and interior wall surfaces and other interior surfaces adjacent to the exterior walls where the adhered masonry cladding system is installed. There was no visible signs of significant moisture intrusion. Moisture scanning did not detect any anomalies or high moisture readings at the time of the inspection

10: KICKOUTS

Observations

10.1.1 Kickout Flashing

KICKOUT MISSING

Kickout flashing is missing at location noted in the pictures below. Kickout flashing is a diverter flashing that is installed as the first piece of flashing at the end of the roof where it intersects the wall. Intended to prevent channeling of moisture behind system at roof/wall or roof/chimney intersections. Kickout flashing should be installed at ALL primary and secondary kickout locations.

11: WINDOWS

Observations

11.1.1 Window Type?

Vinyl

11.2.1 Windows

POOR CAULKING

The window frames are sealed with caulking, but the application of sealant was not in accordance with the prescribed remedial recommendation. There is no bond-breaking joint around the window frames. The caulking is too thin and was not applied in accordance with ASTM standards for sealing window perimeters. The sealant is susceptible to premature adhesion failure which can lead to future moisture intrusion.

12: DOORS

Observations

12.1.1 Door Frames

POOR CAULKING

The door frames are sealed with new caulking, but the application of sealant was not in accordance with the prescribed remedial recommendation. There is no bond-breaking joint around the door frames. The caulking is too thin and was not applied in accordance with ASTM standards for sealing door perimeters. The sealant is susceptible to premature adhesion failure which can lead to future moisture intrusion.

12.2.1 Garage Door Frames

NOT SEALED

The door frames are not sealed properly. There is no bond-breaking joint or sealant around the door frames. The door frames are susceptible to moisture intrusion. All wall assemblies must be able to prevent moisture intrusion from wind-driven rain through testing of the exterior wall envelope, including joints, penetrations and intersections with dissimilar materials.

13: GRADE TERMINATIONS

Observations

13.1.1 Stucco Grade

IMPROPER

At the locations where the stucco system is applied over wood framing, the stucco is in close proximity to or terminates below grade. Improper ground clearance at soft grade/landscaping provides means of conveyance for moisture and wood-destroying insect egress to the structure.

A clearance of 4" above soft grade and 2" above hard grade is standard.

14: ROOF INTERSECTIONS

Observations

14.1.1 Improper Roof Termination

NO WEEP SCREED- IMPROPER CLEARANCE

Industry standards require a 2" separation between the roof covering and the stucco/stone cladding. There should also be an integral weep system at the base of the adhered stucco/stone system. There is not a 2" separation between the roof & stucco/stone system. The stucco system should not be in contact w/ roof covering. There is NOT an integral weep system installed.

15: ATTACHMENTS/PENETRATIONS

Observations

15.1.1 Attachments/Penetrations

SOME

Some of the attachments and/or penetrations are not properly sealed with approved sealant and in a manner that is in accordance with industry standards. All system penetrations such as light fixtures, electrical outlets, and utility conduit or utility boxes should be properly attached and/or sealed with a manufacturer-approved sealant to prevent moisture intrusion. A proper fillet bead of sealant should be applied at ALL penetrations and attachments. The sealant should exhibit a minimum surface contact area of 1/4" onto each surface and have a depth of at least 1/2".

16: SOFFIT/FASCIA/FRIEZE/RAKE INTERSECTIONS

Observations

16.1.1 Soffit/Fascia/Frieze/Rake Intersections

IMPROPER

The stucco/stone intersection with soffit, fascia, rake or frieze board is NOT adequately sealed. Stucco industry details require soffit and/or frieze boards to lap over stucco a minimum 1" or alternatively, if stucco is abutted to soffit or frieze board, it should be sealed to prevent moisture intrusion due to wind-driven rain.

17: CRACKING

Observations

17.1.1 Cracking Stucco

CRACKING

Cracking was noted at numerous locations throughout the system. Compression cracking in stucco systems is usually related to the absence of proper control joints. The stucco system should be inspected regularly and any cracks that are found should be sealed to prevent further moisture intrusion.

18: PHYSICAL DAMAGE

Observations

18.1.1 Physical Damage

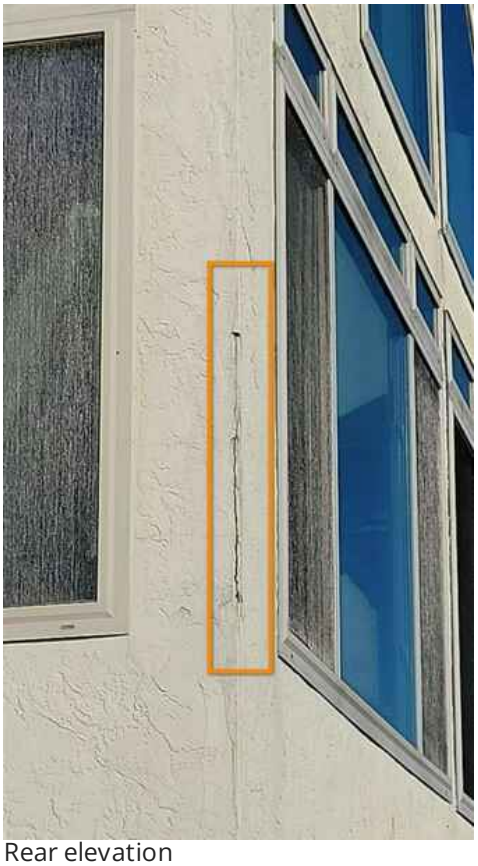
VEGETATION

Vegetation is in close contact with/growing on the stucco surface. Dense vegetation can prevent stucco from drying properly, or cause impact damage. Vines can take root behind the stucco surface and allow water to penetrate. All vegetation should be a minimum 18 inches from the stucco surface.

18.1.2 Physical Damage

PHYSICAL DAMAGE

The inspector observed some type of physical damage to the system that was the result of impact, blunt force, or physical stress. These area(s) of damage may be prone to moisture intrusion and must be repaired in accordance with product specifications. See the photos below depicting the damage observed.



Rear elevation

Chimney damage