

## BUILDING ENVELOPE MOISTURE INSPECTION

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Houston, TX 77008

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DECEMBER 14, 2021



Inspector

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# TABLE OF CONTENTS

1: Information	4
2: Inspector Recommendations and Opinion	13
3: Exterior Elevation 1	15
4: General Observations	20
5: Sealant Observations	23
6: Flashing Observations	25
7: Termination Observations	27
8: Interior Observation	30

## Thank you for choosing Bryan & Bryan Inspections

*This is your Stucco Moisture Inspection. The purpose of this moisture inspection is to help assess the condition of the stucco system by looking for visible installation flaws, inadequate water diversion, sealant failures, and conduct random moisture readings by using electronic moisture scan devices.*

*Please review the report and let us know if you have any further questions. The browser-based version uses advanced web features to allow for easier navigation and expanded photographs. The PDF menu on this webpage includes a version titled "Full Report". Please review all documents and attachments that were sent to you by the inspector.*

*This report was prepared for a buyer or seller in accordance with the client's requirements. The report addresses a single system or component and is not intended as a substitute for a complete standard inspection of the property. Standard inspections performed by a license holder and reported on a Texas Real Estate Commission promulgated report form may contain additional information a buyer should consider in making a decision to purchase.*

# 1: INFORMATION

## Information

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**Type of Building**

Townhouse

**Number of Stories**

3

**Occupancy**

Furnished, Occupied

**Wall Cladding**

Stucco

**Substrate Type**

Plywood

**Type of Window**

Metal

**Temperature (approximate)**

77 Fahrenheit (F)

**Weather Conditions**

Clear, Humid

**Last Rain**

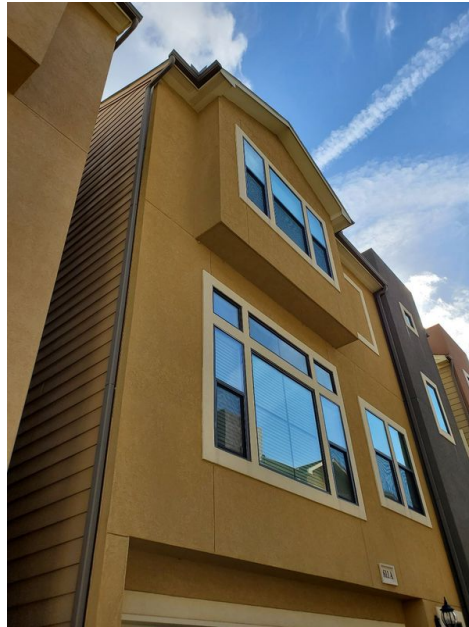
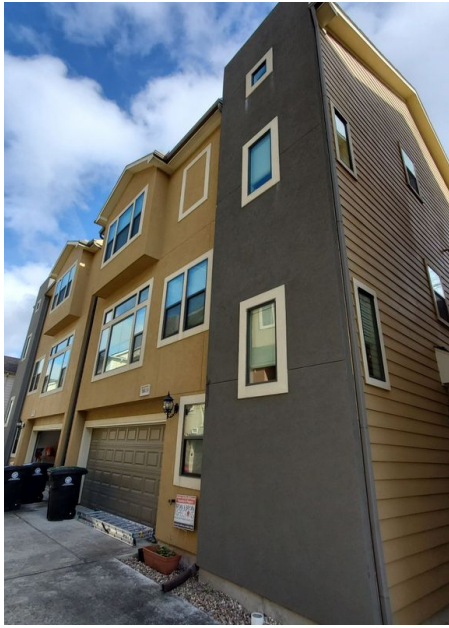
2 Days



### Invasive Inspection Substrate Note

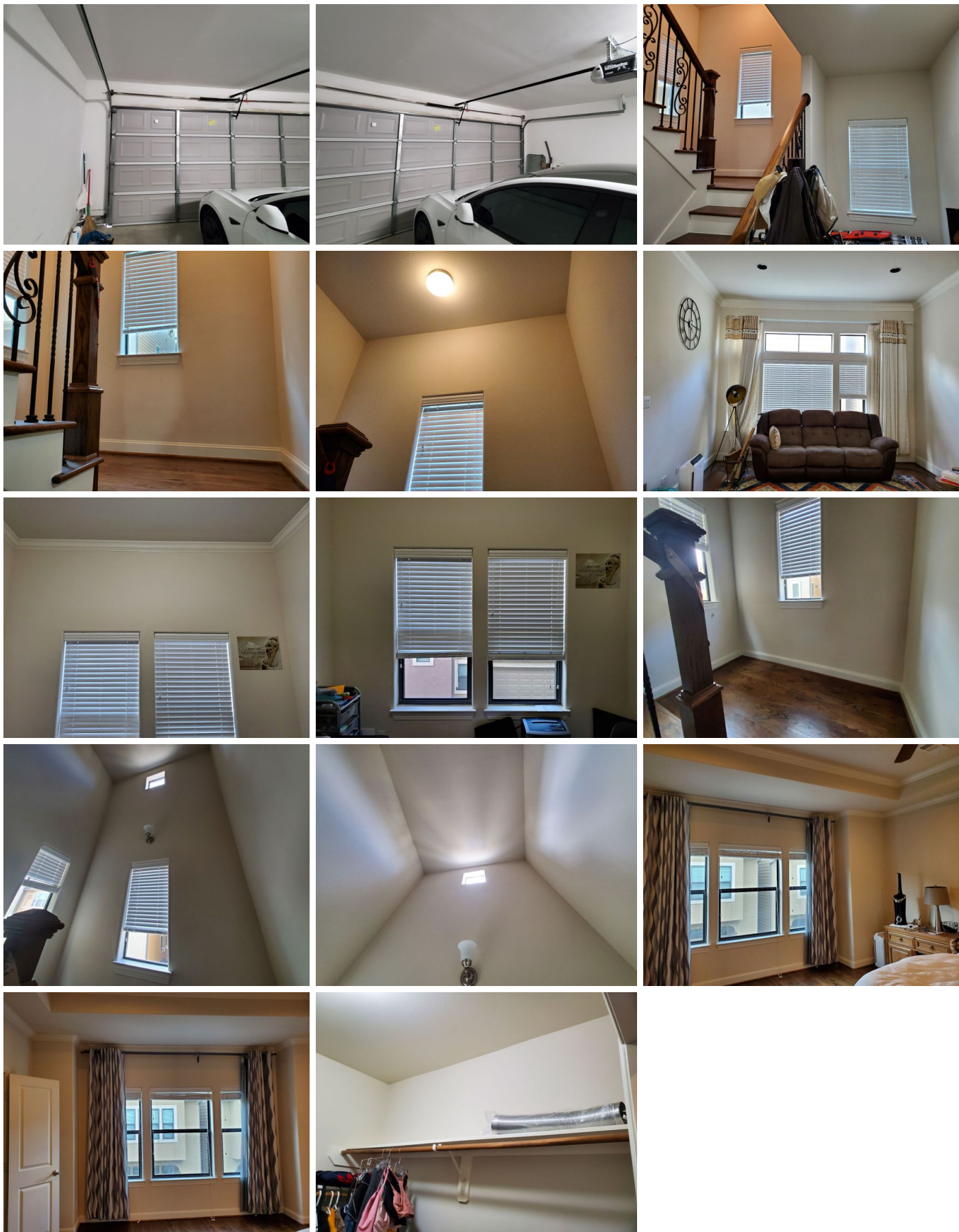
The condition of the substrate is very important to determine how the stucco or EIFS wall is performing. The substrate is the plywood or OSB that is behind the stucco. This is one of the main reasons for probe testing. This test determines if the substrate is Firm or Soft. If the substrate is firm then the wall system is working and moisture that may be present at the time of inspection does eventually dry. On the other hand if the substrate is soft it would indicate moisture that has gotten behind the stucco or EIFS does not escape and just sits there. When the probe test confirms soft substrate it generally means the wall cladding will have to be removed and rebuilt by a stucco contractor. If the substrate is firm with elevated moisture readings at the time of inspection then it may need caulking and sealing to be performed to help prevent future moisture from entering the wall.

Exterior Photos

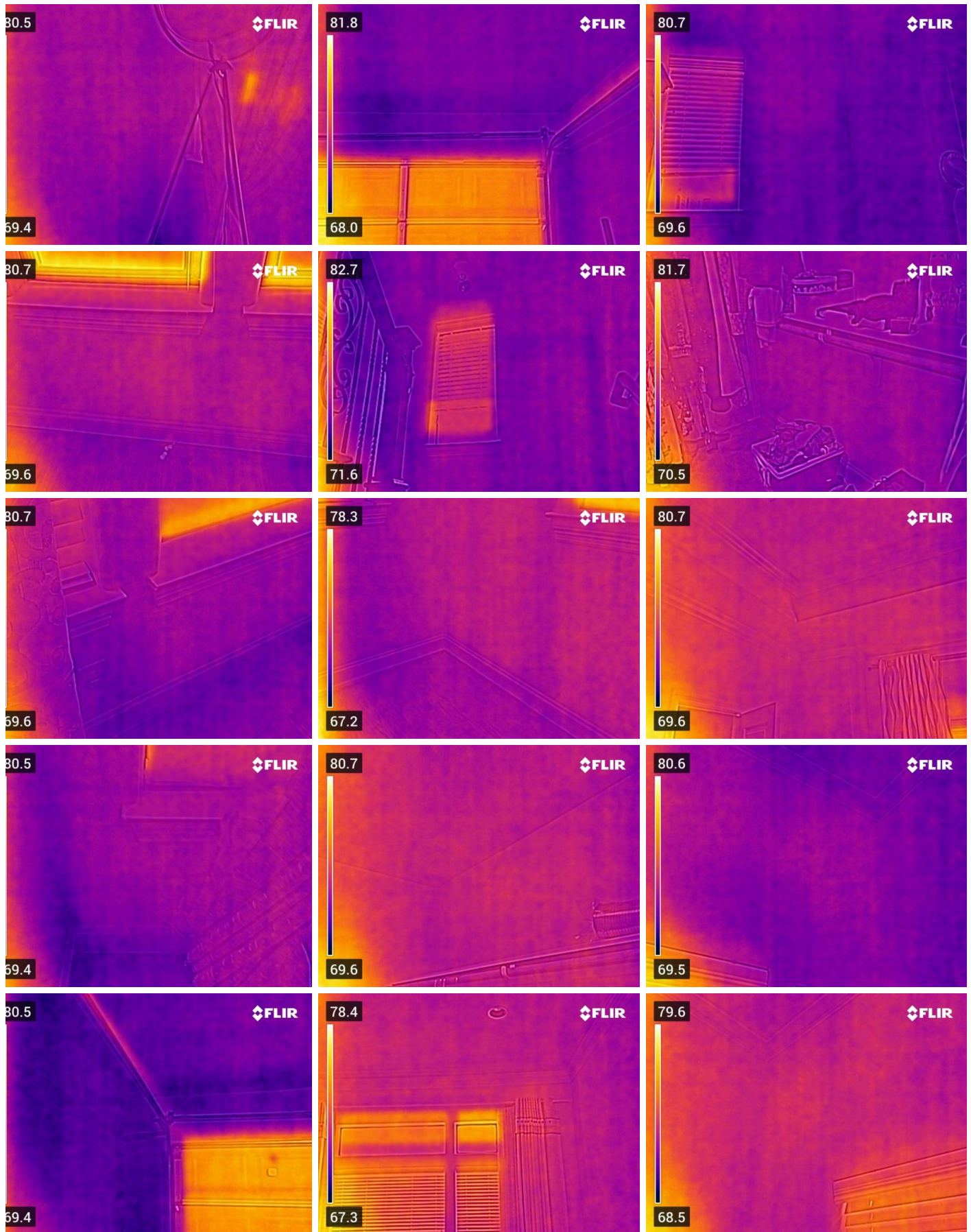




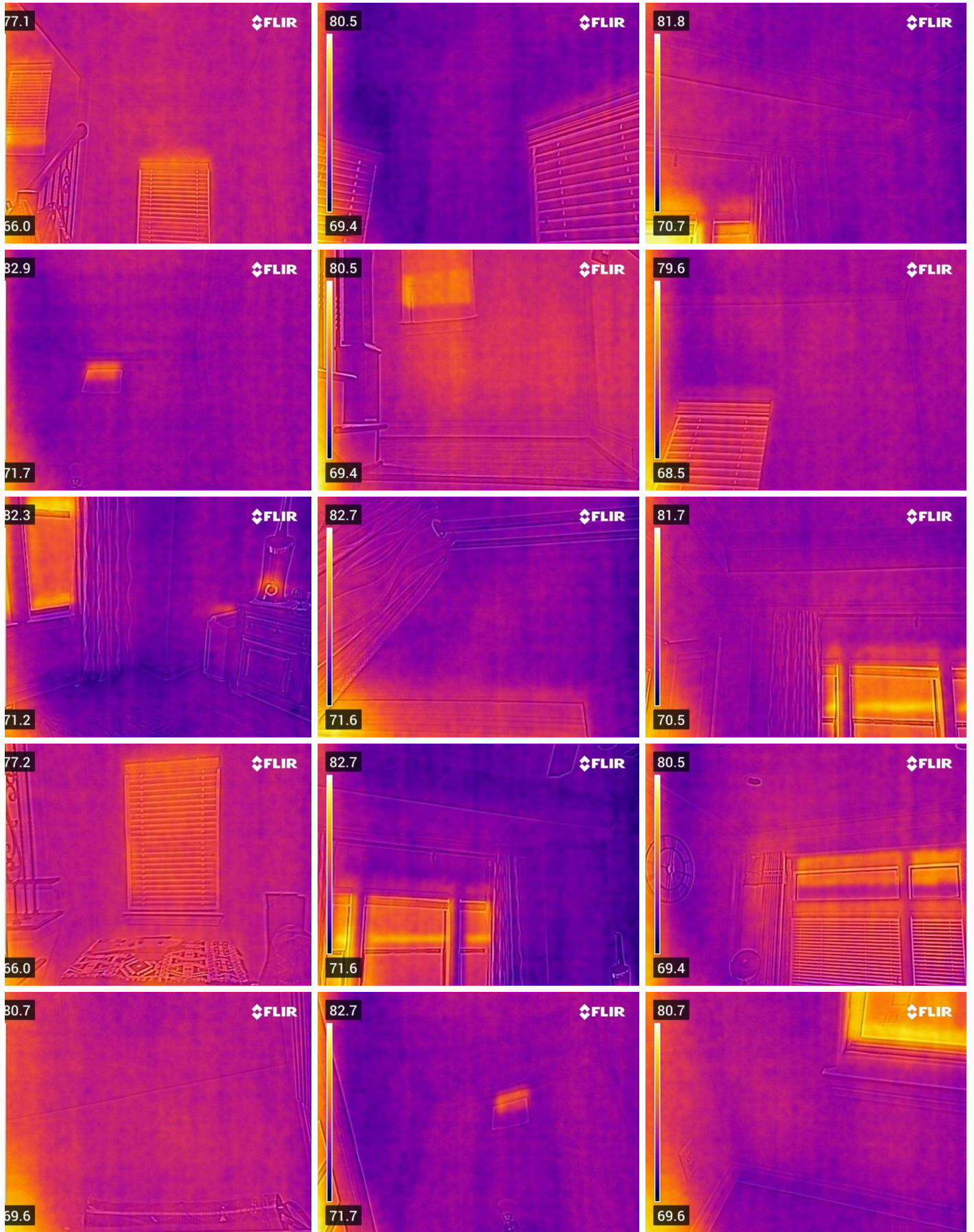
Interior Photos

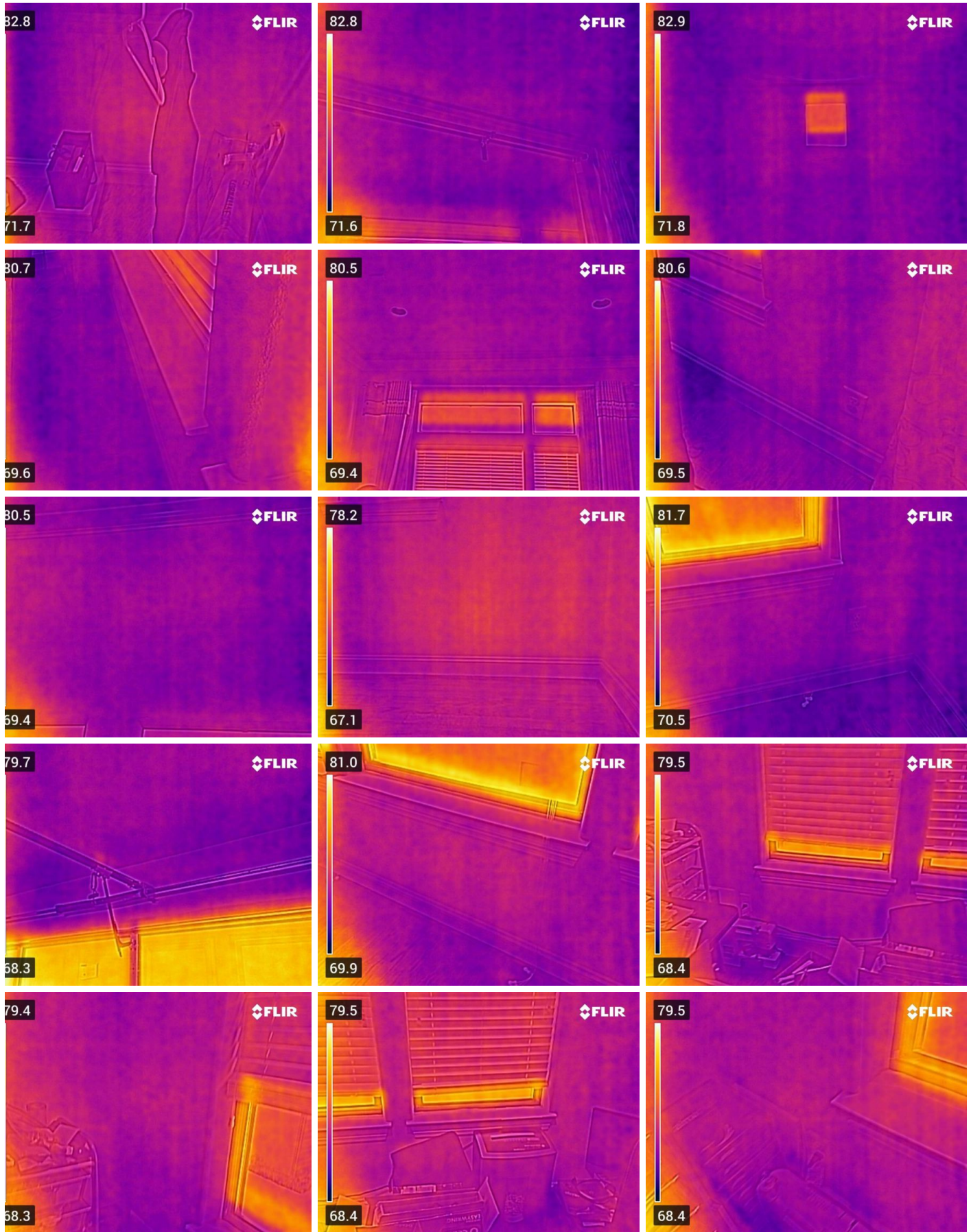


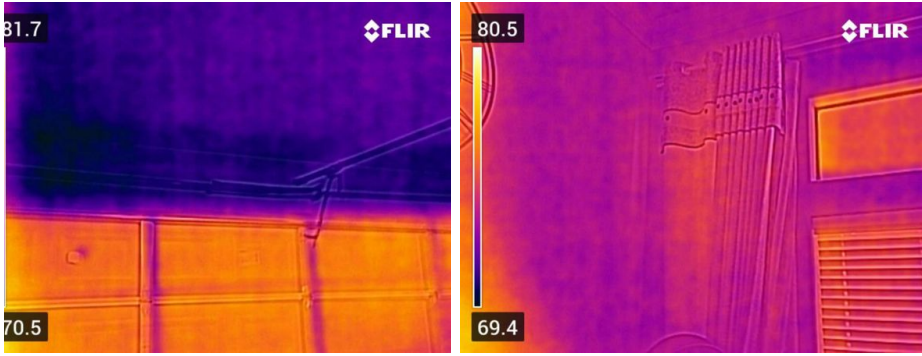
### Thermal images of interior walls with stucco exteriors











**Specialty Equipment Used**

Delmorst Moisture Probe DB2100, Infrared (IR) Camera, Structural Resistance Tester

Test Equipment Description	Test Range	Settings
Delmorst Moisture Probe DB2100	Acceptable 0-14% Elevated 15-19% Saturated 20% and greater	3 Settings
Delmorst Tech Check Plus	Acceptable 0-14% Elevated 15-19% Saturated 20% and greater	3 Settings
Tramex Moisture Encounter Plus	Acceptable 0-14% Elevated 15-19% Saturated 20% and greater	3 Settings
Flir E6 Infrared Camera	The infrared camera detects heat energy at the surface level and can show differences in the surface temperature.	N/A

*Important Note: The test equipment is used to help locate problem areas and provide useful data for identifying possible problems. It is possible that concealed building materials within wall cavities can cause false readings and measurements. Thus we do not rely solely upon our tools when making our determinations. 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.*

**Limitations**

General

### **STORAGE ITEMS/OCCUPIED HOME**

The home was occupied at the time of inspection. The inspector does not move storage items or furnishings that prevent the visual observation of components. Items blocked by storage/furnishing are not inspected.

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General

### **ROOF ACCESS LIMITED**

Due to height, steepness, condition of the roof, type of roofing, material, and/or inclement weather the roof and stucco accessible from the roof could not be closely inspected.

## 2: INSPECTOR RECOMMENDATIONS AND OPINION

		A	RR	NA	NP
2.1	Repair recommendations		X		

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

### Limitations

General

#### HEIGHT LIMITATIONS

Bryan and Bryan Inspections stucco inspectors carry 24 foot ladders. Any area of the structure unsafe to reach from our ladders is considered inaccessible and cannot be fully tested.

General

#### ROOF ACCESS

In the inspectors reasonable judgement, areas of the roof were not accessible due to height, steepness, and/or roofing material.

### Observations

2.1.1 Repair recommendations

 Maintenance Item

#### INSPECTOR OBSERVATIONS AND RECOMMENDATIONS

This section is a summary of the report and should not be read as a replacement for reading the report in its entirety.

The following issues were seen by the inspectors at the time of inspection.

Recommendation

Contact a qualified professional.

2.1.2 Repair recommendations

 Maintenance Item

#### SOFT OR UNDETECTED SUBSTRATE

The following areas have soft or severely deteriorated substrate:

Elevation 1 Site(s): 9, 20,

The substrate appears soft or severely deteriorated indicating the wall is not performing as intended. A small area of stucco should be removed in this area to verify the inspectors findings and the damaged substrate should be repaired. Further evaluation by a stucco contractor to determine the best method of remedy is recommended. All repairs should be performed by qualified contractors according to industry standard installation instructions.

Recommendation

Contact a qualified professional.

## 2.1.3 Repair recommendations

**HAIRLINE CRACKS**

Hairline cracks are common but can lead to moisture intrusion. If the cracks do not seem to be moisture related then a coating of elastomeric paint can prevent further moisture intrusion. All repairs should be performed by qualified contractors according to industry standard installation instructions.

## Recommendation

Contact a qualified professional.

## 2.1.4 Repair recommendations

**SEALANT**

Missing, damaged, and deteriorated sealant should be removed and replaced to prevent moisture intrusion. The lifespan of most sealants suitable for stucco is **5 to 8 years and should be replaced on a maintenance schedule that reflects that lifespan**. All repairs should be performed by qualified contractors according to industry standard installation instructions.

## Recommendation

Contact a qualified professional.

## 2.1.5 Repair recommendations

**DRAINAGE PROVISIONS AT BALCONIES/OVERHANGS**

Drainage provisions or Relief cuts should be installed at all balconies and overhangs to prevent water accumulation at these locations. Without these provisions, the accumulation of moisture can lead to deterioration of the wooden structure of the building. All repairs should be performed by qualified contractors according to industry standard installation instructions.

## Recommendation

Contact a qualified professional.

### 3: EXTERIOR ELEVATION 1

		A	RR	NA	NP
3.1	Photo of elevation with test sites			X	
3.2	Test Site 1	X			
3.3	Test Site 2	X			
3.4	Test Site 3	X			
3.5	Test Site 4	X			
3.6	Test Site 5	X			
3.7	Test Site 6	X			
3.8	Test Site 7	X			
3.9	Test Site 8	X			
3.10	Test Site 9		X		
3.11	Test Site 10	X			
3.12	Test Site 11	X			
3.13	Test Site 12	X			
3.14	Test Site 13	X			
3.15	Test Site 14	X			
3.16	Test Site 15	X			
3.17	Test Site 16	X			
3.18	Test Site 17	X			
3.19	Test Site 18	X			
3.20	Test Site 19	X			
3.21	Test Site 20		X		
3.22	Test Site 21	X			

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

### Information

<b>Photo of elevation with test sites:</b> Area of Elevation Front	<b>Photo of elevation with test sites:</b> Type of Testing Invasive	<b>Test Site 1: Type of Testing</b> Invasive
<b>Test Site 1: Moisture Reading</b> 11%	<b>Test Site 1: Substrate Condition</b> Firm	<b>Test Site 2: Type of Testing</b> Invasive
<b>Test Site 2: Moisture Reading</b> 10%	<b>Test Site 2: Substrate Condition</b> Firm	<b>Test Site 3: Type of Testing</b> Invasive
<b>Test Site 3: Moisture Reading</b> 14%	<b>Test Site 3: Substrate Condition</b> Firm	<b>Test Site 4: Type of Testing</b> Invasive
<b>Test Site 4: Moisture Reading</b> 12%	<b>Test Site 4: Substrate Condition</b> Firm	<b>Test Site 5: Type of Testing</b> Invasive
<b>Test Site 5: Moisture Reading</b> 10%	<b>Test Site 5: Substrate Condition</b> Firm	<b>Test Site 6: Type of Testing</b> Invasive

**Test Site 6: Moisture Reading**  
11%

**Test Site 7: Moisture Reading**  
14%

**Test Site 8: Moisture Reading**  
9%

**Test Site 9: Moisture Reading**  
16%

**Test Site 10: Moisture Reading**  
9%

**Test Site 11: Moisture Reading**  
11%

**Test Site 12: Moisture Reading**  
10%

**Test Site 13: Moisture Reading**  
12%

**Test Site 14: Moisture Reading**  
9%

**Test Site 15: Moisture Reading**  
13%

**Test Site 16: Moisture Reading**  
14%

**Test Site 17: Moisture Reading**  
11%

**Test Site 18: Moisture Reading**  
9%

**Test Site 19: Moisture Reading**  
11%

**Test Site 20: Moisture Reading**  
12%

**Test Site 21: Moisture Reading**  
12%

**Test Site 6: Substrate Condition**  
Firm

**Test Site 7: Substrate Condition**  
Firm

**Test Site 8: Substrate Condition**  
Firm

**Test Site 9: Substrate Condition**  
Soft

**Test Site 10: Substrate Condition**  
Firm

**Test Site 11: Substrate Condition**  
Firm

**Test Site 12: Substrate Condition**  
Firm

**Test Site 13: Substrate Condition**  
Firm

**Test Site 14: Substrate Condition**  
Firm

**Test Site 15: Substrate Condition**  
Firm

**Test Site 16: Substrate Condition**  
Firm

**Test Site 17: Substrate Condition**  
Firm

**Test Site 18: Substrate Condition**  
Firm

**Test Site 19: Substrate Condition**  
Firm

**Test Site 20: Substrate Condition**  
Soft

**Test Site 21: Substrate Condition**  
Firm

**Test Site 7: Type of Testing**  
Invasive

**Test Site 8: Type of Testing**  
Invasive

**Test Site 9: Type of Testing**  
Invasive

**Test Site 10: Type of Testing**  
Invasive

**Test Site 11: Type of Testing**  
Invasive

**Test Site 12: Type of Testing**  
Invasive

**Test Site 13: Type of Testing**  
Invasive

**Test Site 14: Type of Testing**  
Invasive

**Test Site 15: Type of Testing**  
Invasive

**Test Site 16: Type of Testing**  
Invasive

**Test Site 17: Type of Testing**  
Invasive

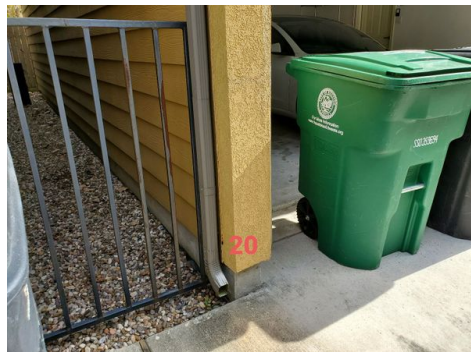
**Test Site 18: Type of Testing**  
Invasive

**Test Site 19: Type of Testing**  
Invasive

**Test Site 20: Type of Testing**  
Invasive

**Test Site 21: Type of Testing**  
Invasive

**Photo of elevation with test sites: Photo of Elevation**





## Observations

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3.2.1 Test Site 1

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.3.1 Test Site 2

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.4.1 Test Site 3

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.5.1 Test Site 4

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.6.1 Test Site 5

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.7.1 Test Site 6

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.8.1 Test Site 7

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.9.1 Test Site 8

 General Notes

### **MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.10.1 Test Site 9

 Repair Recommended

**MOISTURE READING LEVEL: DRY WITH SOFT SUBSTRATE**

The substrate is soft indicating the wall is not performing at intended. Further evaluation by a stucco contractor to determine the best method of remedy is recommended.

Recommendation

Contact a qualified professional.

3.11.1 Test Site 10

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.12.1 Test Site 11

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.13.1 Test Site 12

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.14.1 Test Site 13

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.15.1 Test Site 14

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.16.1 Test Site 15

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.17.1 Test Site 16

 General Notes

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

3.18.1 Test Site 17

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.19.1 Test Site 18

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.20.1 Test Site 19

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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3.21.1 Test Site 20

**MOISTURE READING LEVEL: DRY WITH SOFT SUBSTRATE**

The substrate is soft indicating the wall is not performing at intended. Further evaluation by a stucco contractor to determine the best method of remedy is recommended.

Recommendation

Contact a qualified professional.

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3.22.1 Test Site 21

**MOISTURE READING LEVEL: ACCEPTABLE**

Acceptable moisture levels for standard building materials generally fall within the range of 0-14%.

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## 4: GENERAL OBSERVATIONS

		A	RR	NA	NP
4.1	Visible Cracking or Damage		X		
4.2	Exposed Mesh or Foam		X		
4.3	Impact Damage		X		
4.4	Rusting Aggregates and Accessories		X		
4.5	Delamination				X
4.6	Microbial Growth		X		
4.7	Sprinkler System	X			
4.8	Gutters	X			
4.9	Foliage				X
4.10	Visible Insect Damage				X
4.11	Other			X	

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

### Observations

#### 4.1.1 Visible Cracking or Damage

 Maintenance Item

#### **HAIRLINE CRACK HORIZONTAL**

There are multiple horizontal hairline cracks at the exterior stucco material. These cracks may be an indication of poor fastener patterns in the lathe supporting the stucco. Repair may be necessary to prevent moisture intrusion and further cracking.

Recommendation

Contact a qualified professional.



#### 4.1.2 Visible Cracking or Damage

 Maintenance Item

#### **HAIRLINE CRACKS**

There are cracks in the stucco exterior cladding in multiple areas. These cracks appear to be caused by typical settlement of the house.

Recommendation

Contact a stucco repair contractor



4.2.1 Exposed Mesh or Foam

 Repair Recommended

**EXPOSED MESH**

The fiberglass mesh for the EIFS trim is exposed. This can allow moisture intrusion. Further evaluation and repair is recommended by a qualified stucco repairman.

Recommendation

Contact a stucco repair contractor



4.3.1 Impact Damage

 Maintenance Item

**IMPACT DAMAGE**

There is visible impact damage to the stucco and/ or the EIFS exterior cladding. This damage appears to be primarily cosmetic and this is for your information.



4.4.1 Rusting Aggregates and Accessories

 Repair Recommended

**VISIBLE RUSTING DUE TO POSSIBLE MOISTURE CONTACT**

There is visible rusting on or in the Stucco material near metal components such as near windows and the bottom of the wall. This may indicate long term moisture contact. Recommend modifying or repairing these areas by a stucco contractor.

Recommendation

Contact a stucco repair contractor



4.6.1 Microbial Growth

 Maintenance Item

**VISIBLE MILDEW GROWTH ON EXTERIOR**

Visible mildew on a stucco exterior can be washed away. This is a cosmetic issue.

Recommendation

Contact a qualified professional.



# 5: SEALANT OBSERVATIONS

		A	RR	NA	NP
5.1	Window Frames	X			
5.2	Door Frames		X		
5.3	Door Thresholds			X	
5.4	Alarm Sensor Penetrations			X	
5.5	Fascia and Frieze Boards				X
5.6	Flat Accents Are Sealed or Sloped	X			
5.7	Wall Penetrations		X		

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

## Observations

### 5.1.1 Window Frames

 General Notes

#### ADEQUATE SEALANT

The window frames had adequate and properly installed sealant according to current building standards.

Recommendation

Contact a qualified professional.



### 5.2.1 Door Frames

 Maintenance Item

#### STUCCO INSTALLED UP TO DOOR FRAME

GARAGE DOOR

Stucco/EIFS was installed directly against door frame. Current building standards call for a proper caulk joint between the cladding and the door frame.

Recommendation

Contact a stucco repair contractor



### 5.6.1 Flat Accents Are Sealed or Sloped

 General Notes

#### ADEQUATE SLOPE

The flat accents had an adequate slope according to current building standards.

Recommendation

Contact a qualified professional.



## 5.7.1 Wall Penetrations

 Maintenance Item**MISSING OR DETERIORATED SEALANT**

Missing or deteriorated sealant was observed at one or more wall penetrations or items that are mounted to the walls. Sealing anything that is mounted to or passes through the walls to help prevent moisture intrusion is recommended.

## Recommendation

Contact a stucco repair contractor





# 6: FLASHING OBSERVATIONS

		A	RR	NA	NP
6.1	Kick-outs and Diverters	X			
6.2	Window Headers	X			
6.3	Door Headers		X		
6.4	Parapet Wall Cap Flashings		X		
6.5	Chimney Cap and Cricket			X	

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

## Observations

### 6.1.1 Kick-outs and Diverters

 General Notes

#### **KICKOUT FLASHINGS ADEQUATE**

The kickout flashings meet or exceed current building standards and appear to be functioning adequately.

Recommendation

Contact a qualified professional.



### 6.2.1 Window Headers

 General Notes

#### **WINDOW HEAD FLASHINGS ADEQUATE**

The window head flashings meet or exceed current building standards and appear to be functioning adequately.

Recommendation

Contact a qualified professional.



### 6.3.1 Door Headers

 Maintenance Item

#### **MISSING DOOR HEAD FLASHING**

Head flashing was not installed above the doors. Current building standards call for head flashing above doors to help direct any moisture that may get behind the stucco to escape.

Recommendation

Contact a stucco repair contractor



#### 6.4.1 Parapet Wall Cap Flashings

### **MISSING/INADEQUATE CAP FLASHINGS**

The cap flashing on the parapet wall was either missing or inadequate according to current building standards.

Recommendation

Contact a stucco repair contractor

 Maintenance Item



# 7: TERMINATION OBSERVATIONS

		A	RR	NA	NP
7.1	At Roofline	X			
7.2	At Grade and Flatwork	X			
7.3	Transition joints (stucco to brick, etc.)		X		
7.4	Expansion joints/ Control joints	X			
7.5	Provisions for Drainage		X		

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

## Observations

7.1.1 At Roofline

 General Notes

### ADEQUATE ROOF TO WALL TERMINATIONS

Roof to wall terminations meet or exceed current building standards.

Recommendation

Contact a qualified professional.



7.2.1 At Grade and Flatwork

 General Notes

### FLAT WORK AND GRADE TERMINATIONS ADEQUATE

Flat work and grade terminations meet or exceed current building standards.

Recommendation

Contact a qualified professional.



7.3.1 Transition joints (stucco to brick, etc.)

 Maintenance Item

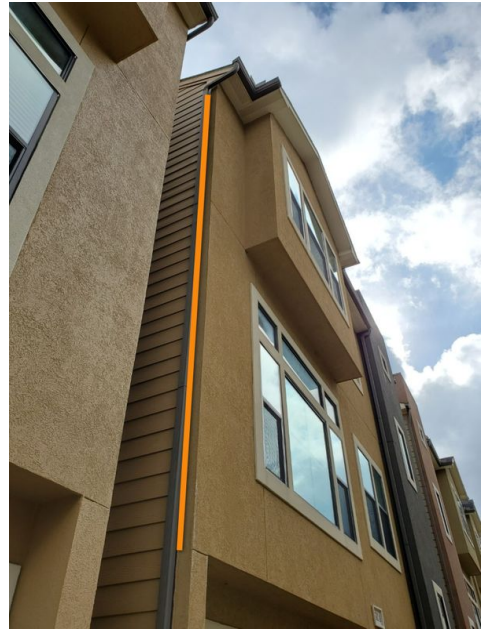
### IMPROPER TRANSITION BETWEEN DIFFERENT CLADDINGS

MULTIPLE LOCATIONS

Transitions between different cladding materials (e.g. stucco to brick, stucco to trim boards, stucco to stone.) should have a proper caulk joint.

Recommendation

Contact a stucco repair contractor



7.4.1 Expansion joints/ Control joints

**EXPANSION/TRANSITION JOINTS ADEQUATE**

Expansion/Transition joints meet or exceed current building standards.

Recommendation

Contact a qualified professional.

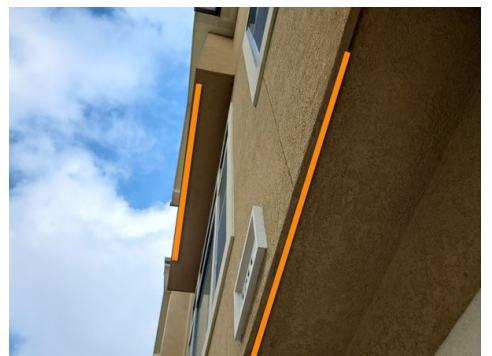


7.5.1 Provisions for Drainage

**MISSING RELIEF UNDER BALCONY**

MULTIPLE LOCATIONS

A relief or drainage track under the balcony beams was missing. Current building standards call for some type of drainage to be installed under balcony beams when stucco has been installed under the balcony. Without some type of drainage any moisture that gets behind the stucco will be trapped and prematurely deteriorate the wooden beams. Further evaluation by probe testing these locations to determine the condition of the wooden beams is recommended.



Recommendation

Contact a stucco repair contractor

## 8: INTERIOR OBSERVATION

		A	RR	NA	NP
8.1	Room Testing	X			

A = Acceptable    RR = Repair/Recommendation    NA = Not Applicable    NP = Not Present

### Information

#### Room Testing : Interior Wall

#### Covering Type

Drywall

#### Room Testing : Test Type

Surface Test, Infrared Camera,  
Visual Inspection