



Qualitative On-Roof Moisture Survey Report

Customer: Customer Name

Address: 123 Main Street

Any Town, USA 12345

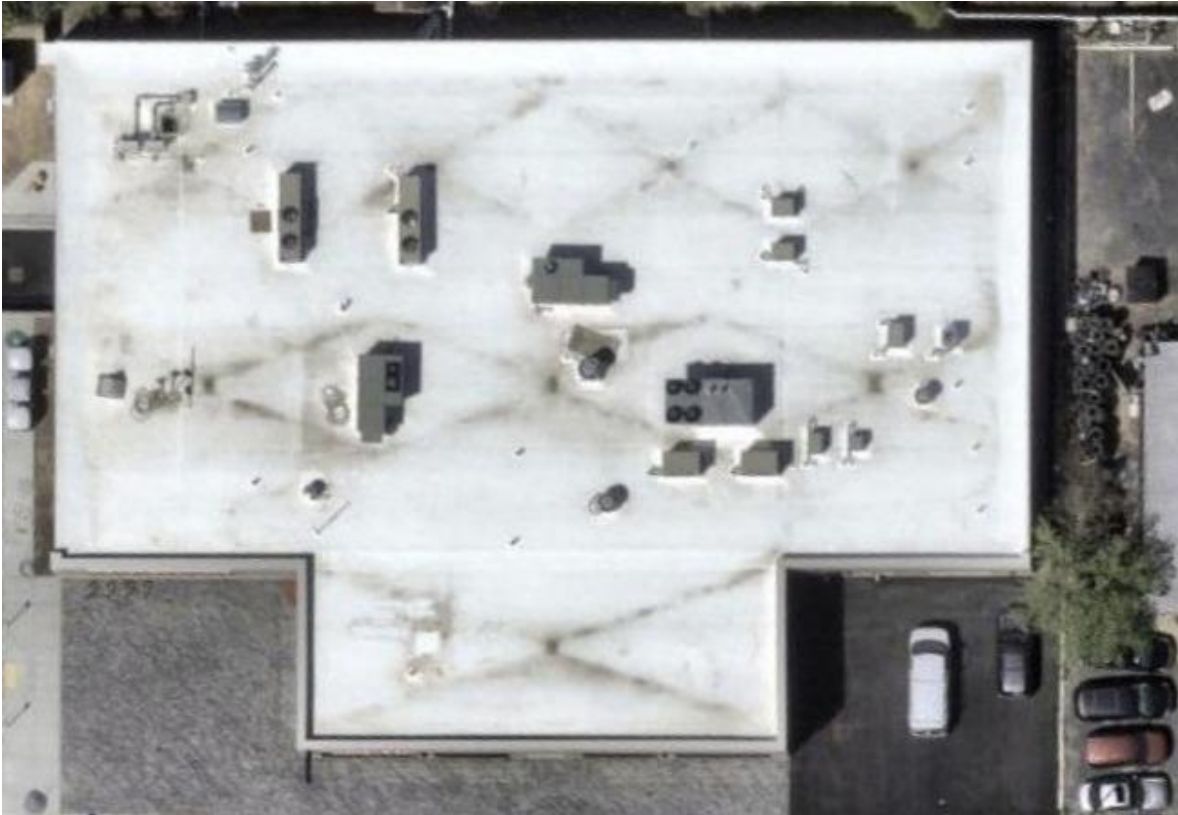
Inspection Date: 1/1/2025

Inspector: Dave Walters

Contact: 860-334-5547



Roof Overview





Date – 1/1/2025

123 Main Street
Any Town, USA 12345

Dear Customer,

Enclosed please find the Moisture Survey Report which we conducted for you on January 1, 2025 at:

123 Main Street
Any Town, USA 12345

Our report is designed to be clear, easy to understand and useful. Please take the time to review it carefully. If there is anything you would like us to explain, or if there is other information you would like, please feel free to call us. We would be happy to answer any questions. We appreciate this opportunity to be of service.

Sincerely,

Dave Walters



Inspection Date: 1/1/2025

Inspector: Dave Walters

Roof Area: 16,611 SF

Client: Customer

Project Name: Your Commercial Roof

Address: 123 Main Street

City: Any Town

State: USA

Zip: 12345

Roof Age: < 1 Year **Weather Conditions:** Sunny **Temp:** 85.1 **Relative Humidity:** 45.4 **Wind:** calm

Dew Point: 65.9 **Barometric Pressure:** 30.3 **Start Time:** 9:30 **Equipment Info:** Tramex Dec Scanner / Tramex CMEX5

System Manufacturer: Firestone	Deck Type: Wood	Vented: No	
Roof System: TPO	Type: UltraPly	Attachment: Adhesive	Surfacing: Welded
Insulation: Tapered Iso Board	Type: Rigid	Insulation Thickness: 5" + Taper	Attachment: Mechanical
Cover Board: Dens Deck	Type: Prime	Thickness: ½"	Attachment: Mechanical

Observations

Client seeks a moisture survey and assessment to determine condition and moisture content of existing roof assembly.

Main Roof System Composition (Based on Drawings provided):

1. 5/8" Plywood deck
2. Vapor Barrier
3. 5" Insulation Board plus thickness of taper
4. ½" Dens Deck fiberglass re-enforced board
4. Self-adhered TPO Membrane

Property is 2 story facility with a low slope (flat) roof and Parapet wall perimeter. The roof is a fully adhered TPO roof that is in very new condition.

Client stated that there was moisture infiltration after the construction of the new roof but there aren't any active leak situations currently. Areas that were shown to be wet from moisture infiltration were patched/repared prior to moisture scan by contractor.



General:

Roof sections were surveyed in a continuous manner with a Tramex impedance Dec Scanner to detect any anomalies caused by moisture. Anomalies were marked on a roof diagram and numbered for comparison and verification. The roof surface was scanned using electrical impedance testing methods as established and required by industry standards ASTM C1153, ASTM D7954, ASTM D7945-15A, and TAS 126-95.

Care was taken to calibrate equipment and verify actual moisture content in a dry area in order to create a baseline standard for this project (Probe #1). In areas where the Tramex Decscanner readings were elevated on the relative scale, the roof was marked, and moisture probe readings were taken with a Tramex CMEX 5 to verify relative results and quantify actual moisture content and/or relative humidity (RH). Results are in Exhibit A, B and C

The surface of the roof was scanned at around 9am through 12pm. When I first stepped onto the roof, there was dew present from the night before. Given that this day was a bright, sunny and hot day, the dew dissipated quickly. The surface was dry when scanned and free of debris.

Note - Moisture probe readings were taken in the spots with highest relative readings in any "damp" or "wet" areas. Readings are taken at multiple depths in each probe in an attempt to isolate how deep any existing moisture is located.

Core cut(s) were not taken on the roof to verify the in-place roof system and to visually inspect for water and moisture contained within the roofing materials. Instead, a complete diagram and thorough list with specifications was provided by client and contractor.

The complete survey indicated an approximate combined total of 5 square feet +/- of wet roofing material Located around P8.

Attached are various photographs taken during the survey. Good roofing practices dictate that all wet materials be removed in order to prevent premature roof failure or even worse, structural failure.

Consult product manufacturers for their system warranty requirements and/or local building officials regarding acceptable moisture content within the roof system.

The replacement of wet roofing components should be performed per the manufacturer specifications using industry accepted methods.



Description: Pin probes to determine baseline moisture content.

Exhibit A



Description: Baseline Relative Humidity showing 39.8% at the probe

Exhibit B



Description: Setting the Tramex Deck Scanner to the "on the relative moisture scale at P1

Exhibit C



Deck Scanner always reads high moisture content over the walk paths. This could be due to residual moisture left in the treads of the actual composition of the walk mats.



Description: Pin probes to determine baseline moisture content.



Description: Baseline Relative Humidity showing 39.8% at the probe



Description: Setting the tramex Deck Scanner to the "on the relative moisture scale at P1

Areas Testing Positive for Moisture or Thermal Anomalies



	Probe Point #2 Moisture anomaly was only present in the top ½" of roof assembly. Pin probes registered at 7.5 No moisture was detected in the insulation. Relative humidity (RH) at the location was 25.4%, inside the roof structure was 30.6%. 7.5 on the pins and a RH of 30.6% are considered Air Dry and not at risk
	Probe Point #3 Moisture anomaly was only present in the top ½" of roof assembly. Pin probes registered at 8.5 No moisture was detected in the insulation. Relative humidity (RH) at the location was 26.3%, inside the roof structure was 40.2%. 8.5 on the pins and a RH of 40.2% are considered Air Dry and not at risk
	Probe Point #4 Moisture anomaly was only present in the top ½" of roof assembly. Pin probes registered at 9.2 No moisture was detected in the insulation. Relative humidity (RH) at the location was 25.6%, inside the roof structure was 43.8%. 9.5 on the pins and a RH of 43.8% are considered Air Dry and not at risk
	Probe Point #5 Moisture anomaly was only present in the top ½" of roof assembly. Pin probes registered at 8.0 No moisture was detected in the insulation. Relative humidity (RH) at the location was 32.1%, inside the roof structure was 43.1%. 8.0 on the pins and a RH of 43.1% are considered Air Dry and not at risk



Appendix Section

Equilibrium Moisture Content - %MC Guidance Values			
Environmental or Material Condition	% Relative Humidity	Generic Wood Comparison	Tramex Meter Moisture Value
Safe/Air Dry	25	6	7
	30	7	8
	35	8	9
	40	9	10
	45	10	11
	50	11	12
	55	12	13
	60	13	14
	65	14	16
	70	15	18
At Risk	75	17	20
	80	18	25
Damp	85	20	28
	90	23	30
	95	26	32
	100		

***This graph shows how the numbers on the scanning tools relate to what was seen in the actual Moisture Survey.

Summary



This roof seems to be very dry throughout. While there was many qualitative alerts on the Tramex Moisture Meter, the quantitative measuring of the alerts showed that this roof is dry. There may be some air leaking through the mechanically fastened vapor barrier that is getting into the roof, however small it may be. Air leaking from the inside, climate-controlled space, may lead to condensation building up the roof over time. Also, it was noted that there was a leak due to the HVAC curbs not being covered at the time of installation. The moisture that the meter is reading may be residual inside the roof structure. Only one small hole was noted on the scan and the moisture trail from that hole was picked up on the meter. The relative humidity in that area was elevated but the insulation was dry meaning that only moisture vapor was present. Also noted was a slightly higher relative humidity level near the drain in the front of the building. This was the only area that had the humidity levels approaching the at-risk level. This may be attributed to condensation forming around the drainpipe and escaping into the roof through the vapor barrier. The areas directly around the perimeter of the building were reading higher on the relative scale. At the time of the scan, this was thought to be a rim of edge metal that ran down the parapet wall and onto the roof. After reviewing the Specification of the roof, I believe this to be because there is a build up of lumber around the perimeter. The meter was picking up that there was a change of thickness in the roof insulation and was directly reading the moisture composition in the lumber used. In my opinion, the roof is put together very tightly at this point.

To alleviate this residual moisture in the roof structure, One Way Breather Vents could be installed. This would give the trapped moisture the opportunity to escape the roof and not build up over time.