NatureTech Moisture Test Inspection Report

Inspection Date: 09/29/2020

Client: Dr. Ann Marie Testarmata

[redacted]

Test Performed by: Bill Hulstrunk

Outside Temp: 71° F Inside Temp: 74.8° F Inside RH: 77%

Moisture Meter: Delmhorst BD-2100 Probe Length: 18”

Moisture Calibration: 12% (Confirmed)

Probe Calibration on Wood Block Pins: 9.8% m/c Probe: 10.1% m/c

Moisture Readings:

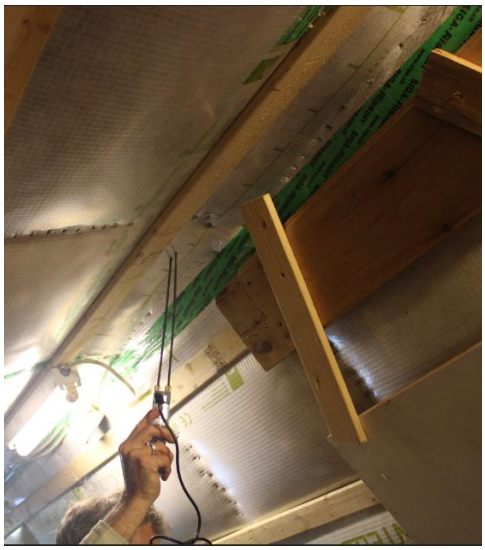
Assembly Type (W/R)	Orientation (N/E/S/W)	Interior Sheathing	Interior Cellulose	Mid Point Cellulose	Exterior Cellulose	Exterior Sheathing
Roof	South	n/a	6.0%	6.0%	6.0%	6.1%
Roof	North	n/a	7.2%	7.3%	7.3%	7.4%
Roof	Peak	n/a	8.1%	8.2%	8.2%	8.3%

Pictures

South Roof Slope

North Roof Slope

Roof Peak



Findings:

We were asked by Chris Alphen of Dolphin Insulation to provide moisture measurements of the dense pack cellulose in the attic area on this project. Dolphin Insulation installed the dense pack cellulose insulation behind ProClima Intello+ and wood strapping approximately four and a half years ago. The moisture testing was observed by the home owner, Dr.Ann Marie Testarmata, Chris Alphen from Dolphin Insulation and Oliver Klein from 475 High Performance Building Supply.

A high degree of workmanship was observed on this project with a dense pack cellulose density of 4.0 lbs/cuft throughout this attic area. These high densities will ensure that the hygroscopic cellulose insulation will remain in contact with the exterior roof sheathing preventing moisture buildup better than in a conventionally vented roof. The moisture readings in the dense pack cellulose behind the Intello+ ranged from 6.0% to 8.2% and the exterior roof sheathing moisture levels ranged from 6.1% to 8.3% depending upon the roof orientation. For comparison, the moisture measurement in the exposed wood strapping was 10.1%, revealing that the exterior roof sheathing and dense pack cellulose behind the Intello+ roof membrane in all roof slope orientations was below that of the exposed interior wood strapping.

Conclusions:

The moisture measurements above document the fact that the unvented roof assembly in this home is performing as expected and will continue to provide a superior level of thermal performance and durability for the life of this building. Insulation and building performance professionals have been using dense pack cellulose in unvented roof assemblies for over 25 years in tens of thousands of homes and buildings across this country, with the vast majority of these located in the Northeast. This installation method has proven itself to be a viable alternative to foam insulation in creating durable energy efficient building assemblies.

Please let me know if you have any questions regarding this report.

Sincerely,

Bill Hulstrunk

VP of Insulation Technology

NatureTech Engineered Green Building Systems

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