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MILLBOARD, INC.
FIRE TEST REPORT

SCOPE OF WORK
NFPA 268 TESTING ON EXTERIOR WALL ASSEMBLY CONTAINING MILLBOARD, INC. SHADOW LINE+ EXTERIOR CLADDING.

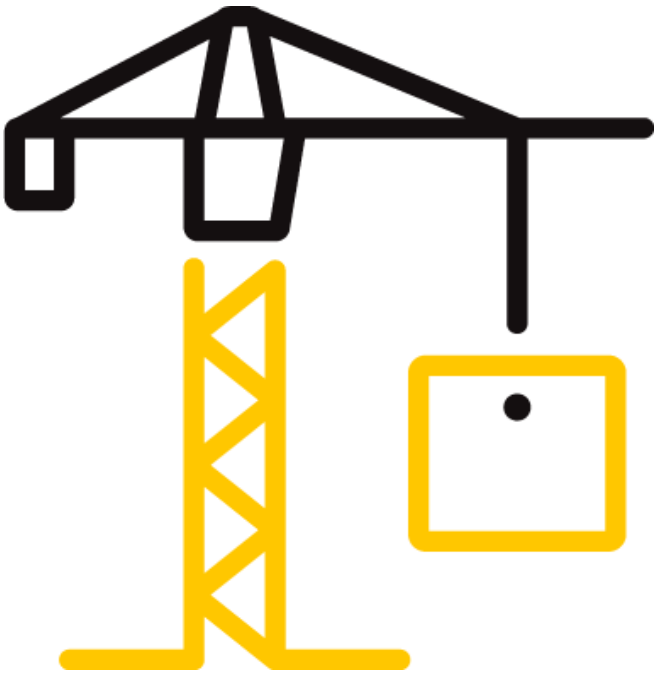
REPORT NUMBER
R6916.02-121-24 R0

TEST DATE(S)
10/29/24

ISSUE DATE
10/31/24

PAGES
15

DOCUMENT CONTROL NUMBER
RT-R-AMER-Test-3566 (01/29/24)



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TEST REPORT FOR MILLBOARD, INC.
Report No.: R6916.02-121-24 R0
Date: 10/31/24

REPORT ISSUED TO

Millboard, Inc.
1330 Lagoon Ave #400
Minneapolis, MN 55408

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company), dba Intertek Building & Construction (B&C) was contracted by Millboard, Inc., Minneapolis, Minnesota to evaluate the performance of exterior walls containing Shadow Line+ when exposed to a radiant heat source. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania. Results obtained are tested values and were secured by using the designated test method(s). A summary of test results and the complete graphical test data is reported herein.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. Intertek will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens, or other pertinent project documentation, will be retained for the entire test record retention period.

Unless differently required, Intertek reports apply the "Simple Acceptance" rule, also called “Shared Risk approach,” of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

For INTERTEK B&C:

COMPLETED BY:	Timothy Feltman	**REVIEWED BY:**	Ethan Grove
TITLE:	Technician – Fire Testing	**TITLE:**	Sr. Regional Manager
SIGNATURE:	Digitally Signed by: Timothy Feltman	**SIGNATURE:**	Digitally Signed for: Ethan Grove by Dottie R. Rushing
DATE:	10/31/24	**DATE:**	10/31/24

TRF:ddr

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SECTION 2
SUMMARY OF TEST RESULTS

Wall System: Exterior Wall Assembly
Combustible Components: SPF 2" x 4" wood framing, 7/16" Orientated Strand Board (OSB), Benjamin Obdyke HydroGap® drainable housewrap, Millboard Inc. Shadow Line+ exterior cladding.

NFPA 268 Test Results
The assembly described and tested in this report **did** meet the full, 20-minute exposure duration as required by the NFPA 268 test method. Construction of the full assembly is summarized in Section 7 of this test report.

SECTION 3
TEST METHOD
The assembly was evaluated in accordance with the following:

> **NFPA 268-2022**, *Standard Test Method for Determining Ignitability of Exterior Wall Assemblies Using a Radiant Heat Energy Source*

SECTION 4
MATERIAL SOURCE/INSTALLATION

The sampled product was selected by Intertek B&C personnel. The specimen was witnessed during production and tagged prior to shipment on 08/15/24, (Reference Intertek B&C Job No. R6916.01-121-38, dated 08/15/24). The remaining components of the test assembly, the wall framing and sheathing was acquired and assembled by Intertek B&C personnel.

SECTION 5
LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Timothy Feltman	Intertek B&C
Keith Leonhard	Intertek B&C

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SECTION 6
TEST PROCEDURE

The test specimen is installed into the test apparatus and centered both vertically and horizontally with respect to the center of the radiant exposure panel. Prior to the initiation of the test, a water-cooled radiation barrier is placed between the radiant panel and test specimen to absorb the energy from the radiant burner once the calibrated exposure is achieved. Thirty seconds after the spark igniter, located 5/8 inch away from the exposed face of the specimen, is energized, the radiation shield is removed, and the test begins with the sample being subjected to the calibrated exposure. The igniter is cycled on for greater than 5 seconds and off for less than 2 seconds to create a piloted ignition source. The test is continued for 20 minutes, or until sustained flaming for a period of 5 seconds or more occurs within the 20-minute test duration.

SECTION 7
TEST ASSEMBLY DESCRIPTION

The overall dimensions of the test assembly are 4 feet wide by 8 feet high. Below is a detailed description of the components in the assembly:

Framing
SPF 2” x 4” wood studs’ space 16” on center were fastened with 3 ¼” long framing nails.

Exterior Sheathing
7/16” thick OSB was fastened to the wood framing using 2 3/8” nails every 8” around the perimeter and every 12” in the field.

Water-resistive Barrier
Benjamin Obdyke HydroGap® drainable house wrap was stapled to the exterior sheathing using T50 3/8” staples. A 4 ½” overlap was utilized.

Exterior Cladding
Millboard Inc. Shadow Line+ was horizontally installed and fastened every 24” on the tongue using 6d siding nails.

Note: The test specimen was conditioned to a constant weight at 21.1°C ± 5.6°C (70°F ± 10°F) and a relative humidity of 50 percent ± 10 percent.

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SECTION 8
TEST OBSERVATIONS

Calibration Information:

Calibration Date: 10/09/2024

Average Heat Flux of Four Quadrant Heat Flux Transducers: 12.4 kW/m²

The heat flux at the center of the calibration panel shall not exceed 15kW/m² nor be less than 12.5kW/m²: True; Low: 13.8kW/m², High: 14.8 kW/m²

Average Surface Temperature of Radiant Panel: 1571 °F

Test Date: 10/29/2024
Lab Temperature: 61 °F
Lab Relative Humidity: 44%

TIME (Min:Sec)	OBSERVATIONS
Pre-test (-10:00)	Ignition of radiant panel burner.
Pre-test (-01:00)	Data acquisition begins.
Pre-test (-00:30)	Spark igniter initiated
00:00	Radiation shield removed. Test begins.
00:45	Smoke emitting from test assembly
02:51	Bubbling of exposed surface
09:11	Charring of exposed surface
10:03	Transient flaming at the spark ignitor; not sustained
20:00	End of Test

SECTION 9
TEST RESULTS

TEST REQUIREMENTS	TEST RESULTS	PASS/FAIL
Sustained flaming (ignition) for a period of 5 seconds or more shall not occur within the 20-minute test period.	Sustained flaming **did not** occur during the 20-minute test period.	**PASS**

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SECTION 10(Continued)
PHOTOGRAPHS

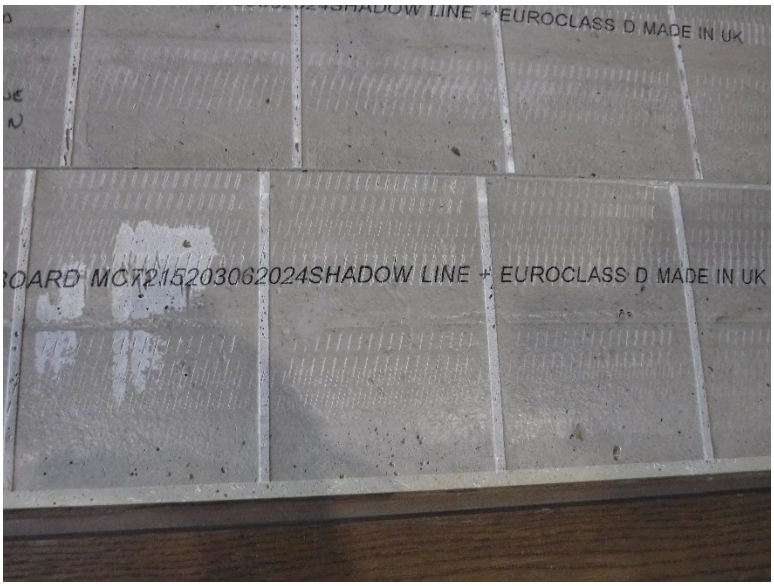

Photo No. 1
Stamped Product Information

Photo No. 2
Product Sampling Marks

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SECTION 10
PHOTOGRAPHS

Photo No. 3
Wall Framing Spaced 16” on Center

Photo No. 4
7/16” OSB

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SECTION 10 (Continued)

PHOTOGRAPHS

Photo No. 5
Addition of HydroGap®

Photo No. 6
4 ½" Overlap

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SECTION 10 (Continued)
PHOTOGRAPHS

Photo No. 5
Complete Assembly

Photo No. 6
Complete Assembly Pre-test

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SECTION 10(Continued)
PHOTOGRAPHS

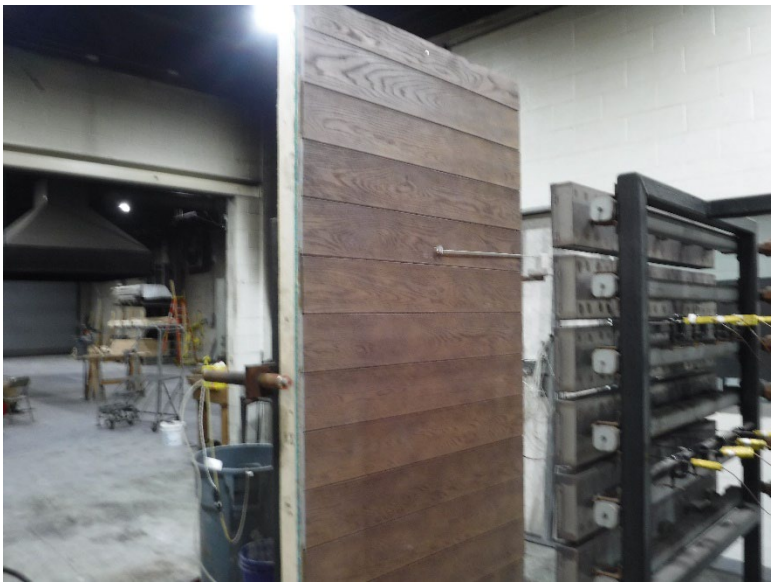

Photo No. 7
Initiation of Test

Photo No. 8
Smoke Emitting from Test Assembly

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SECTION 10(Continued)

PHOTOGRAPHS

Photo No. 9
Bubbling of Exposed Surface

Photo No. 10
Charring of Exposed Surface

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SECTION 10(Continued)

PHOTOGRAPHS

Photo No. 11
Post Test

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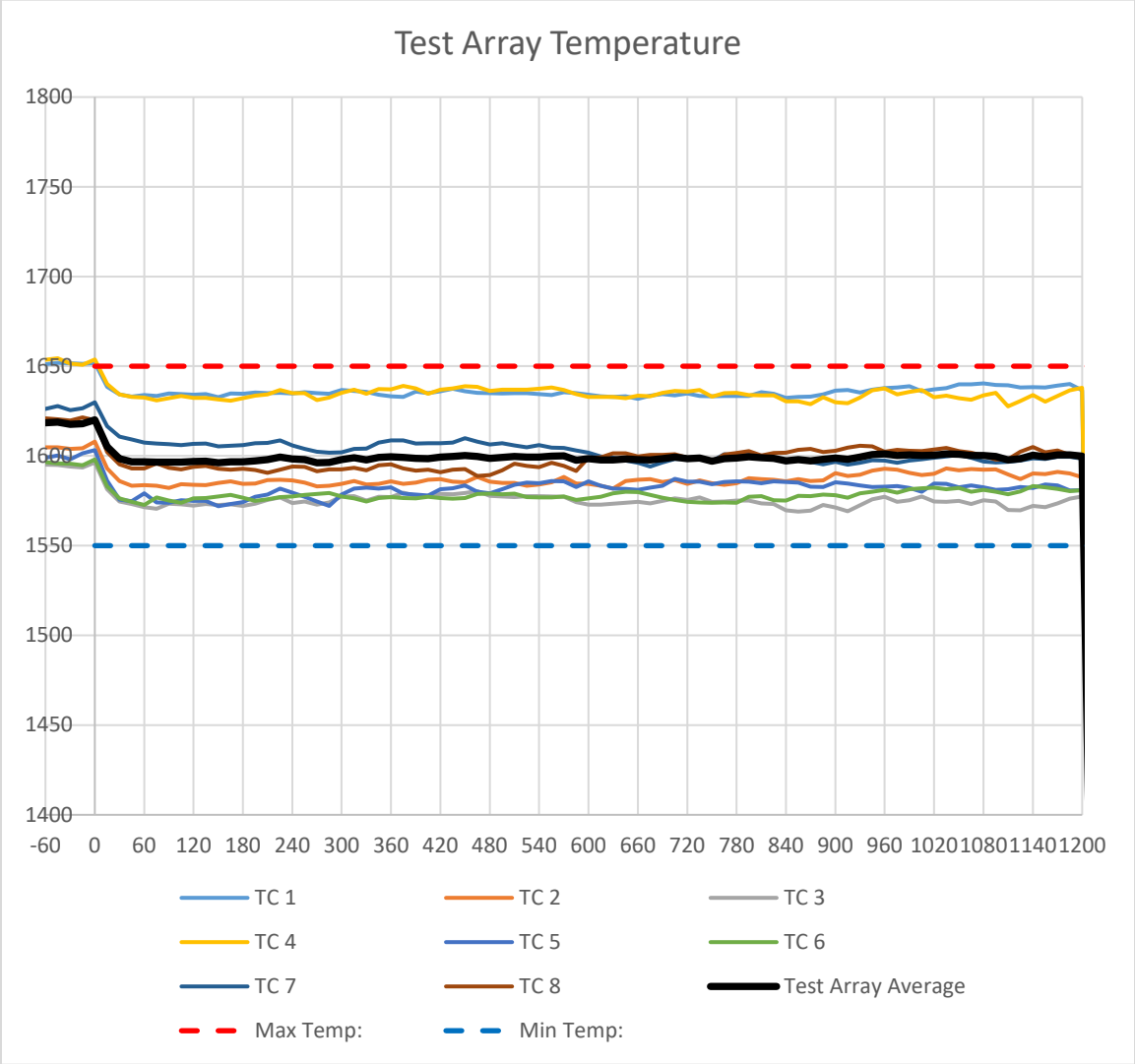
SECTION 11
GRAPHS



Graph No. 1
Burner Output Verification Data

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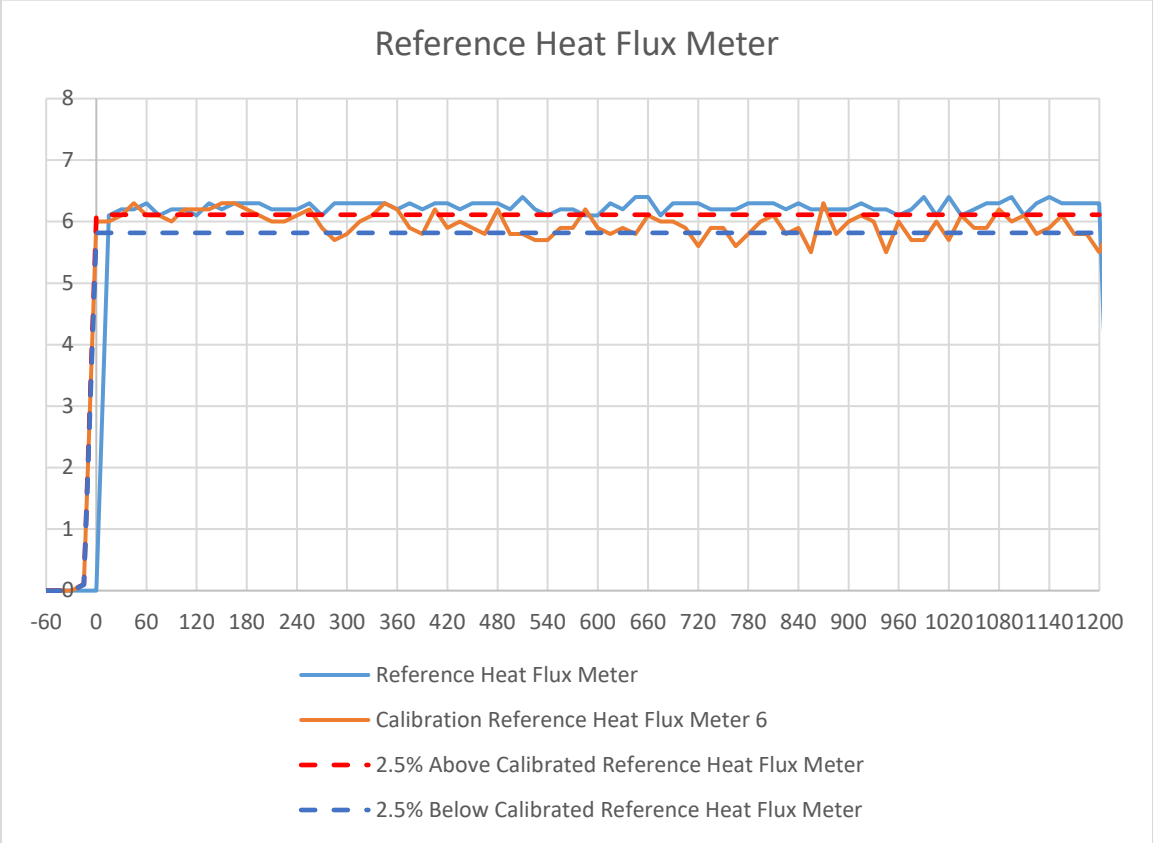
SECTION 11 (CONTINUED)

GRAPHS



Graph No. 2
Reference Heat Flux

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SECTION 12
REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	10/31/24	N/A	Original Report Issue