

CLIENT: **Moso North America Inc.**
PO Box 793
Worcester, PA 19490

Test Report Number :	QA-1487F-1	Date:	April 30, 2025
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SAMPLE ID: The client identified the following test material as:
Moso Bamboo Thermo Outdoor decking boards

SAMPLING DETAIL: Test Samples were submitted to the Laboratory directly by the client. No sampling or sample preparation were observed by QAI staff.

DATE OF RECEIPT: Samples were received at QAI facilities on: April 23, 2025

TESTING PERIOD: April 30, 2025

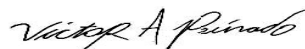
AUTHORIZATION: Testing was authorized by Ryan Adamson for proposal QAI-1132 signed April 15, 2025

TEST REQUESTED: Evaluate the clients Roof Covering system in accordance to CAN/ULC-S107-19 "Standard Test Methods for Fire Tests of Roof Coverings" which outlines testing to be conducted using the procedures and methods outlined in CAN/ULC-S107-19 "Standard Test Methods for Fire Tests of Roof Coverings".

TEST RESULTS: The Moso Bamboo Thermo Outdoor decking boards, when tested at a 1/4:12 test slope, has met the Spread of Flame Class A performance requirements when tested and evaluated to the requirements outlined in CAN/ULC-S107-19 "Standard Test Methods for Fire Tests of Roof Coverings".

Detailed test results are provided on the subsequent pages of this report.

Prepared By



Victor Peinado
Fire Lab Supervisor

**Signed for and on behalf of
QAI Laboratories, Inc.**



Jason Friedrich P.E.
Engineering Manager

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DETAILS OF THE TESTING

TEST SAMPLE DESCRIPTION

1.0 Description of Test Specimens

Table 1 outlines the Moso North America Inc. Roof system evaluated by QAI.Laboratories

COMPONENT	SUPPLIER	COMMENT
Framing Type / Species	Moso North America	Moisture Content: 8-12%
Douglas Fir No.1		
Sheathing Type / Grade		AC Exterior Grade Plywood
N/A	N/A	
Underlayment 1: Grade / Type:	N/A	
N/A		
Roof Covering Material 1 / Grade:	Moso North America	
Moso Bamboo Thermo Outdoor decking boards		

Table No. 1: Details of the Moso North America Inc. Roof Covering Test Specimens.

DETAILS OF THE TESTING

2.0 Test Set Up and Procedure:

Storage of Assembled Test Decks

All test deck assemblies were stored indoor at temperatures not lower than 60 °F (16 °C) nor higher than 90 °F (32 °C) for the period of time necessary to cure the assemblies and prior to testing. The test decks were stored in such a manner to assure that each deck was surrounded by free circulating air.

A photograph of the assembled test deck is provided in Appendix B of this report.

Roof System and Deck Assembly Construction Details

Lumber: Nominal 2" X 4" provided by Moso North America

Roof Covering: The Moso Bamboo Thermo Outdoor decking boards were installed following the manufacturing installation guide using four 2"x 4" studs spaced 16 oc. The decking material was then installed on the 2" x 4" studs (see picture in Appendix for installation details)

Test Procedure

Spread of Flame

Two test decks were constructed in accordance with Section 8 of CAN/ULC S107 and Section 6 of ASTM E108 with final measurements of 40-inch wide by 8-feet long and were individually mounted onto the test chamber compliant with Section 3 of CAN/ULC S108 and Section 5 of ASTM E108. The 10-minute Spread of Flame test was performed in accordance to Section 13 of CAN/ULC S107 and Section 9 of ASTM E108 on the roof deck assembly's exposed roofing surface with observations of flame-spread distance and other significant observations recorded on the individual test data sheets in the Appendix A of this report.

2.1 Test Requirements

At no time during or after the intermittent flame, spread of flame or burning brand tests shall:

- 1 Any portion of the roof covering material be blown or fall off the test deck in the form of flaming or glowing brands that continue to glow after reaching the floor, or
- 2 The roof deck be exposed, or
- 3 Portions of the roof deck fall away in the form of particles that continue to glow after reaching the chamber floor.
- 4 At no time during the Class A intermittent flame or burning brand tests shall there be sustained flaming of the underside of the test assembly deck.
- 5 At the conclusion of the spread of flame tests, the flaming shall not have spread beyond 8 feet for Class A.
- 6 There shall be no significant lateral spread of flame from the path directly exposed to the test flame during spread of flame tests.

**3.0 Test Results**

The following summarizes testing conducted by QAI during testing of the Moso North America Roofing underlayment when tested to CAN/ULC S107-19.

Client Name:	Moso North America Inc.	Criteria:	ASTM E 108	Framing Type / Species	Douglas Fir No.1
Job No.:	QA-1487F-1	Criteria Version:	20a	Sheathing Type / Grade	N/A
Test Method:	CAN/ULC S107-19			Underlayment 1: Grade / Type:	N/A
Version / Publication of Method:	20a			Roof Covering Material 1 / Grade:	Moso Bamboo Thermo Outdoor decking boards
System Type	Roof				
Test Slope	1/4:12				
Test Degree					
Burning Brand	No				
Intermittant Flame	No				
Spread of Flame	Yes				
Roofing Class	A				

Sample ID:

Moso Bamboo Thermo Outdoor decking boards

Test Conditions	Class A Requirement	Average Recorded
Wind Speed (ft/min)	1012 – 1100 ft/min	1050 (ft/min)
Flame Temperature (°F)	1400 ± 50 (°F)	1373 (°F)
Burning Brand Weight (grams)		

Conclusion:

The Moso Bamboo Thermo Outdoor decking boards, when tested at a 1/4:12 test slope, **has met** the Spread of Flame Class A performance requirements when tested and evaluated to the requirements outlined in CAN/ULC S107-19.

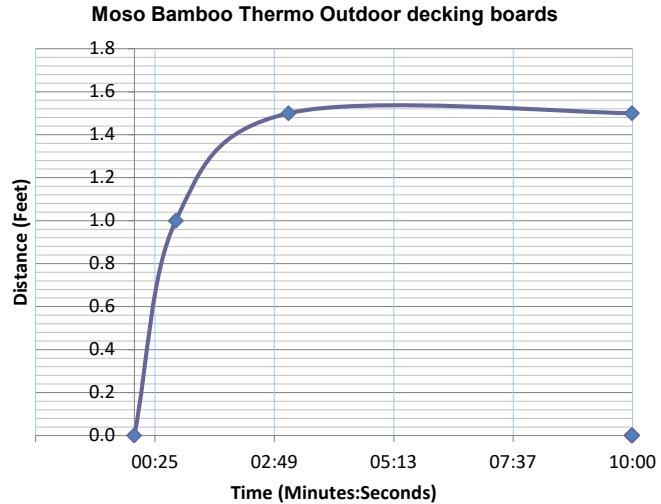
Spread of Flame Test							
Test Date	Test Assembly	Ignition Time (MM:SS)	Maximum Spread of Flame (ft)	Lateral Spread of Flame (ft)	Condition @ Start of Test		Result:
					Temp. (°F)	RH (%)	
2025-04-29	1	00:49	1.5	0	63	52	Pass
2025-04-29	2	00:55	1.5	0	64	52	Pass

Appendix A: Spread of Flame-Test Specimen #1

Client Name:	Moso North America Inc.	Criteria:	ASTM E 108	Framing Type / Species	Douglas Fir No.1
Job No.:	QA-1487F-1	Criteria Version:	20a	Sheathing Type / Grade	N/A
Test Method:	CAN/ULC S107-19			Underlayment 1: Grade / Type:	N/A
Publication of Method:	20a			Roof Covering Material 1 / Grade:	Moso Bamboo Thermo Outdoor decking boards
System Type	Roof				
Test Slope	1/4:12				
Test Degree	0				
Burning Brand	No				
Intermittant Flame	No			Test Temperature (°F)	63
Spread of Flame	Yes			Test Humidity (%)	52
Roofing Class	A			Test Date	4-29-2025

Sample Id: **Moso Bamboo Thermo Outdoor decking boards**

# of Feet	Time (mm : ss)	Half Foot	Time (mm : ss)
1	Did not Ignite	1.5	03:06
2		2.5	
3		3.5	
4		4.5	
5		5.5	
6		6.5	
7		7.5	
8			



Test Duration (Minutes:Seconds) 10:00
Time of Ignition (Minutes:Seconds) 00:49
Maximum Spread of Flame (ft) 1.5
Time at Maximum Spread of Flame (ft) 03:06

Flame Front Recession (ft) 0.0
Lateral Flame Spread (ft) 0
Flame Spread Distance at Test End (ft) 1.5
Test Result for Class A Pass

Asset Number	Description	Equipment Functional Range	Calibration Date	Calibration Due Date
RP0241	Stop Watch	N/A	2025-01-08	2026-01-08
RF0005	Anemometer	30 FPM to 5000 FPM +14/-	2025-01-08	2026-01-08
TU8124	Digital Thermometer	-328°F - 2498°F	2024-06-19	2025-06-19
RP0072	Calibrated Tape Measure	0-25 Feet	2025-02-27	2026-02-27
RP0038	Temperature and Humidity Data Logger	-4°F to 158°F +/-0.8°F / 60	2025-01-06	2026-01-06
RF0031	UL790 Test Chamber	AS PER UL790	2025-04-29	Per USE

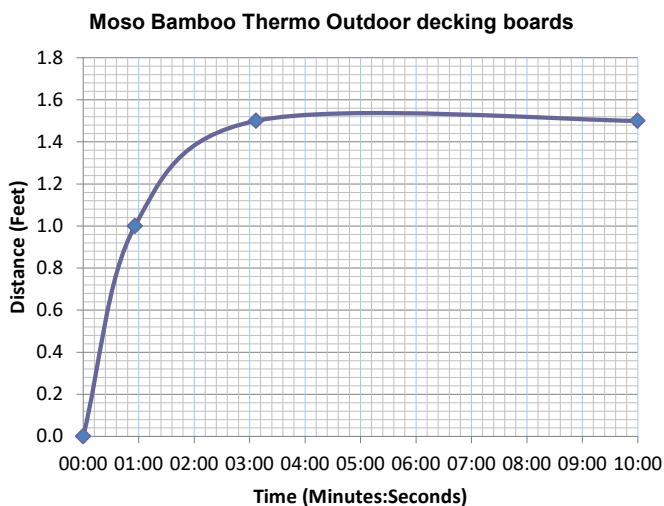
Appendix A: Spread of Flame-Test Specimen #2

Client Name:	Moso North America Inc.	Criteria:	ASTM E 108	Framing Type / Species	Douglas Fir No.1
Job No.:	QA-1487F-1	Criteria Version:	20a	Sheathing Type / Grade	N/A
Test Method:	CAN/ULC S107-19			Underlayment 1: Grade / Type:	N/A
Publication of Method:	20a			Roof Covering Material 1 / Grade:	Moso Bamboo Thermo Outdoor decking boards
System Type	Roof				
Test Slope	1/4:12				
Test Degree	0				
Burning Brand	No				
Intermittant Flame	No			Test Temperature (°F)	64
Spread of Flame	Yes			Test Humidity (%)	52
Roofing Class	A			Test Date	4-29-2025

Sample Id:

Moso Bamboo Thermo Outdoor decking boards

# of Feet	Time (mm : ss)	Half Foot	Time (mm : ss)
1	00:56	1.5	03:07
2		2.5	
3		3.5	
4		4.5	
5		5.5	
6		6.5	
7		7.5	
8			



Test Duration (Minutes:Seconds) **10:00**
Time of Ignition (Minutes:Seconds) **00:55**
Maximum Spread of Flame (ft) **1.5**
Time at Maximum Spread of Flame (ft) **03:07**

Flame Front Recession (ft) **0.0**
Lateral Flame Spread (ft) **0**
Flame Spread Distance at Test End (ft) **1.5**
Test Result for Class A **Pass**

Asset Number	Description	Equipment Functional Range	Calibration Date	Calibration Due Date
Asset Number	Description	Equipment Functional	Calibration Date	Calibration Due Date
RP0241	Stop Watch	N/A	2025-01-08	2026-01-08
RF0005	Anemometer	30 FPM to 5000 FPM +14/-	2025-01-08	2026-01-08
TU8124	Digital Thermometer	-328°F - 2498°F	2024-06-19	2025-06-19
RP0072	Calibrated Tape Measure	0-25 Feet	2025-02-27	2026-02-27
RP0038	Temperature and Humidity Data Logger	-4°F to 158°F +/-0.8°F / 60	2025-01-06	2026-01-06
RF0031	UL790 Test Chamber	AS PER UL790	2025-04-29	Per USE

Appendix B: Photographs



Photo #1

Moso Bamboo Thermo Outdoor decking boards
Spread of Flame Test #1



Photo #2

Moso Bamboo Thermo Outdoor decking boards
Spread of Flame Test #1

Appendix B: Photographs (Continued)



Photo #3

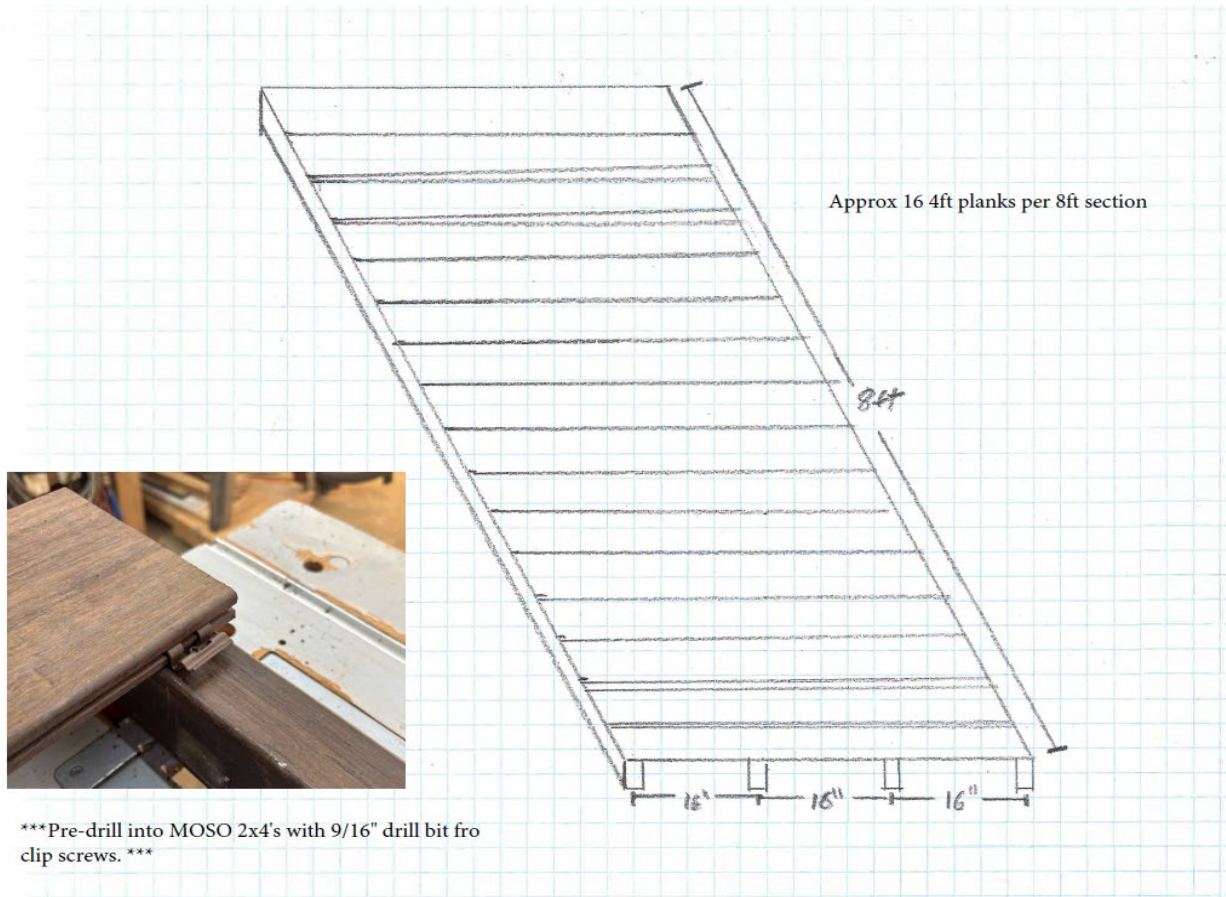
Moso Bamboo Thermo Outdoor decking boards



Photo #4

Moso Bamboo Thermo Outdoor decking boards
Spread of Flame Test #2

Appendix C: Diagram



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