

**CLIENT:** Arbor Wood Co  
1025 London Rd.  
Duluth, MN 55802

**TEST REPORT NO.:** TUL0304-3R1

**DATE:** September 12, 2023

**SUBJECT:** Evaluation of Exterior Pine Decking

**PRODUCT ID:** Pine Decking 3/4" x 5.5".

**SAMPLING:** Samples were submitted directly to the testing laboratory by the client. Samples were selected from the client facility located at 1025 London Rd. Duluth, MN 55802 by Jason Friedrich a QAI representative on 4/28/2023.

**DATE OF RECEIPT:** Samples were received at QAI on May 15, 2023 in good condition.

**TESTING DATE:** June 22, 2023 and July 21, 2023.

**AUTHORIZATION:** Proposal 23RT02131 approved on March 3, 2023 by Arbor Wood Co. staff Randy Rosandich.

**TEST PROCEDURE:** Testing was conducted to the following methods:

- Decking SFM Standard 12-7A-4.

**CONCLUSIONS:** Arbor Wood Co. Pine Decking evaluated to 12-7A-4 by QAI **complies** with the criteria of SFM standard 12-7A-4A 7.5.

Detailed test results are presented in the subsequent pages of this report.

**Prepared By:**

  
Michael Lowry  
Operations Manager

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

C. Anthony Peñaloza  
Sr. Engineer/Project Manager

**Sample Description:**

Arbor Wood Co. Pine decking products are for use in outdoor applications.

Selected pine decking boards, sized 5.25" x 3/4" were received by QAI. Combined with a pair of commercially sourced southern yellow pine 2x6 (actual size 1.5" x 5.5") joists, the decking was used to construct a deck 24" wide x 27" in length.

**Test Description:**

QAI Laboratories Inc. conducted testing of Arbor Wood Co. materials following method Decking SFM 12-7A-4. This testing was conducted June 22<sup>nd</sup>, and July 21<sup>st</sup>, 2023 by QAI Tulsa, OK facility.

For testing, QAI placed the received samples directly over the diffusion burner described below for evaluation.

Prior to testing, all panels were conditioned at 73°F ± 4°F temperature and 50% ± 5% relative humidity for a minimum of 30 days.

**Ignition Source:**

The ignition source described in Section 12-7A-4A.7.1 diffusion burner of 12" x 12" size located 27 inches below the test deck was used for evaluation.

**Test Requirements:**

Per Decking SFM 12-7a-4: Effective Peak Heat Release Rate ≤ 25 kW/ft<sup>2</sup> (269 kW/m<sup>2</sup>)

**Test Results:**

Environmental Conditions at Time of Test:

Relative Humidity: 55%  
 Temperature: 86°F  
 Average moisture Content of samples: 6.2, 6.5, and 6.6%

**Effective Net Heat Release Rate:**

Test Number	Effective Net Peak Heat Release Rate (kW/ft <sup>2</sup> )	Requirement (kW/ft <sup>2</sup> )	PASS/FAIL
1	4.4	25	PASS
2	21.1 *	25	PASS
3	24.7 *	25	PASS

\* The heat release data collected for the second and third test showed errors in the oxygen analysis resulting in heat release values that did not match visual observation. The heat release values presented here are the most conservative (highest) numerical estimates that can be justified.

**Observations During Test #1 6/22/2023:**

0:00 – Burner assembly ignited; 80 kW achieved and maintained.  
1:25 -- Ignition of the top of the sample.  
2:54 – Peak gross heat release rate.  
3:00 – Burner extinguished. Small flames from the left side 2x6 joist.  
5:20 – Flames continue to burn on top of the deck.  
10:00 – Small Flames on top of the deck.  
15:00 – 1” to 6” flames continue to burn on top of the deck. White smoke.  
30:00 – No change  
35:00 – Small candle sized flames continue to burn.  
43:00 – Test concluded.

**Observations During Test #2 7/21/2023:**

0:00 – Burner assembly ignited; 80 kW achieved and maintained.  
1:50 -- Ignition of the top of the sample.  
2:24 – Peak gross heat release rate.  
3:00 – Light flames coming from the underside. Burner extinguished. 4” flames on top of the deck.  
10:00 – Small Flames on top of the deck  
23:00 – All flames on the assembly self extinguished. Light smoke continues  
30:00 -- Test concluded

**Observations During Test #3 7/21/2023:**

0:00 – Burner assembly ignited; 80 kW achieved and maintained.  
1:00 -- White smoke.  
1:50 -- Ignition of the top of the sample.  
3:00 – Burner extinguished. Flames extending 6” from the top of deck.  
3:05 – Peak gross heat release rate.  
15:00 – Small Flames on the front of the deck  
20:00 – All flames on the assembly self extinguished. Light smoke continues  
33:00 -- Test concluded

**Conclusions:**

The Arbor Wood Co. Deck Surface assembly evaluated by QAI was found to have an effective peak heat release rate less than 25 kW/ft<sup>2</sup>, meeting the requirements of Decking SFM 12-7A-4.

**Photos:**



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**Test Two: Before**



**Test Two: Post Test**



**Test Three: Before**



**Test Three: Post Test**

**Revision:**

Rev1 – Added second and third tests.

**\*\*\*End of Report\*\*\***

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