Title: Thermal Resistance (R-Value) Test Results

Product: 1" Envirocoustic Wood Wool

Application: Ceiling or Wall

Testing Standard: ASTM C518-21

Test Date: 05/19/2022

Why this test: This test determines the thermal resistance, commonly known as the R-Value, of the product. The product is placed between two plates, one cold and one hot, which measure the heat flow to determine the thermal conductivity (k-Value) and thermal resistance (R-Value). This is repeated for 3 samples of the product, the average being the reported R-Value. The values determined by this test satisfy R-Value regulations for insulation materials (i.e. US Federal Trade Commission's "R-Value Rule" (10 CFR 460).

Test Result Summary: R-Value 2.32

Test Specimen ID	Sample Name	Avg. Heat Flux (Btu/hr·ft²)	Avg. Thermal Conductance (C) (Btu/hr·ft²·°F)	Avg. Thermal Resistance (R) (hr·ft²·°F/Btu)	Avg. Thermal Resistivity (r) (hr·ft²·°F/Btu-in)	Apparent Thermal Conductivity (k) (Btu-in/hr·ft²·°F)	Specimen Avg. Thickness (inches)	†Specimen Avg. Density (Lbs/Ft3)
1	Sample 1	21.63	0.432	2.31	2.35	0.425	0.983	21.63
2	Sample 2	21.95	0.438	2.28	2.33	0.429	0.978	21.90
3	Sample 3	21.21	0.424	2.36	2.39	0.418	0.985	22.85

Test ID: N6822.01-116-25

123 Columbia Court North Suite 201 Chaska, MN 55318 | TOLL FREE 800.448.0121 | PHONE 952.448.5300 | FAX 952.448.2613 | WEB SITE www.acousticalsurfaces.com

ASI
HEAT FLOW METER TEST REPORT

SCOPE OF WORK
CEMENTITIOUS WOOD FIBER ACOUSTIC PANEL - 1" THICK - ASTM C518

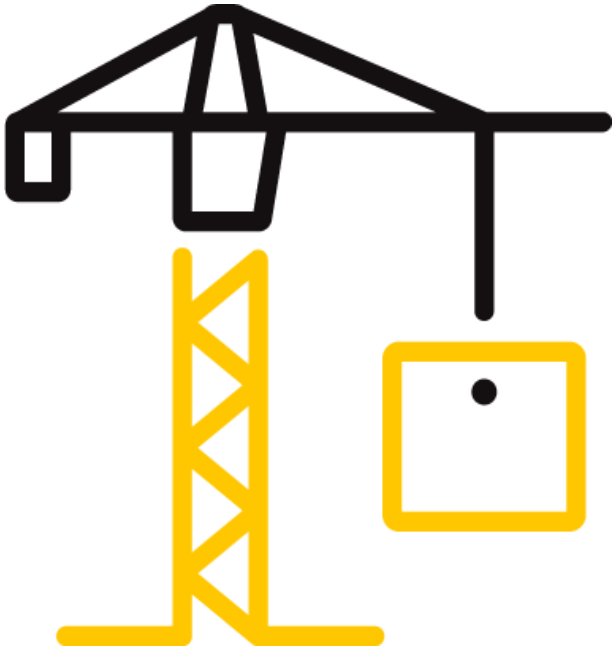
REPORT NUMBER
N6822.01-116-25 R0

TEST DATE
05/16/2022 to 05/17/2022

ISSUE DATE
05/23/22

PAGES
9

DOCUMENT CONTROL NUMBER
RT-R-AMER-Test-7906 (01/17/22)



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TEST REPORT FOR ASI
Report No.: N6822.01-116-25 R0
Date: 05/23/22

REPORT ISSUED TO

ASI
123 Columbia Court North
Chaska, Minnesota 55318

SECTION 1

SUMMARY

SERIES/MODEL: Cementitious Wood Fiber Acoustic Panel - 1" Thick

Architectural Testing, Inc. (an Intertek Company), dba Intertek Building & Construction (B&C), was contracted by ASI to perform heat flow meter testing in accordance with ASTM C518-21 on their, Acoustic Panel. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at the Intertek B&C test facility in York, Pennsylvania.

Intertek B&C is an accredited testing laboratory and all testing was conducted in full compliance with ASTM approved procedures and specifications.

Intertek B&C 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, or other pertinent project documentation, will be retained for the entire test record retention period. This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY:	Benjamin W. Green	**REVIEWED BY:**	Eric S. Leitner
TITLE:	Project Lead	**TITLE:**	Manager - Thermal Testing & Simulations
SIGNATURE:	Digitally Signed by: Benjamin W. Green	**SIGNATURE:**	Digitally Signed by: Eric S. Leitner
DATE:	05/23/22	**DATE:**	05/23/22

BWG:bwg

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SECTION 2
TEST METHODS

The product were evaluated in accordance with the following:

ASTM C518-21, *Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus*

SECTION 3
TEST SPECIMEN DESCRIPTION

SERIES/MODEL	Cementitious Wood Fiber Acoustic Panel - 1" Thick
PRODUCT TYPE	Acoustic Panel
SPECIMEN TEST SIZE	12" x 12"

**This product is not a compressible sample.*

SPECIMEN CONSTRUCTION	The test specimens were provided by the client as three panels measuring approximately 1" x 12" x 12". The panels were tested as provided. See Appendix B: Photographs.

SECTION 4
TEST CONDITIONS

COLD PLATE TEMPERATURE	50°F nominal
WARM PLATE TEMPERATURE	100°F nominal
MEAN SPECIMEN TEMPERATURE	75°F nominal
AVERAGE TEMPERATURE GRADIENT	50°F/inch nominal
HEAT FLOW ORIENTATION	Vertical Heat Flow, The specimen was prepared and installed into the test apparatus horizontally so that the measured heat flow was from the hot plate to the cold plate, as intended for use.
SPECIMEN CONFIGURATION	Single horizontal specimen
METERING AREA	4" x 4" heat flux transducer on warm side plate

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SECTION 5
EQUIPMENT

DESCRIPTION	SERIAL #	ASSET #	CALIBRATION DATE
Dial Calipers (0-12")	52-008-012-0	INT01848	01/18/23
Adams Scale (CBK 70A)	17960300	65197	12/15/22
Digital Indicators (0-1")	17960305	65196	01/14/23
Temp/Humidity Transmitter	12961265	63736	02/24/23
LC2 - LaserComp Fox304	13091619-F304	65203	*

**Device calibrated prior to use.*

SECTION 6
CALIBRATION INFORMATION

Calibration Material	NIST Standard Reference Material 1450d, 1" Thickness Fibrous Glass Board, Serial Number 357, dated January 20, 2012, no expiration.	
Material Thermal Conductance	**0.228**	(C) (Btu/hr·ft²·°F)

SECTION 7
TEST RESULTS (IP Units)

Test Specimen ID	Sample Name	Avg. Heat Flux (Btu/hr·ft²)	Avg. Thermal Conductance (C) (Btu/hr·ft²·°F)	Avg. Thermal Resistance (R) (hr·ft²·°F/Btu)	Avg. Thermal Resistivity (r) (hr·ft²·°F/Btu-in)	Apparent Thermal Conductivity (k) (Btu-in/hr·ft²·°F)	Specimen Avg. Thickness (inches)	†Specimen Avg. Density (Lbs/Ft3)
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SECTION 7 (continued)

TEST RESULTS (SI Units)

Test Specimen ID	Sample Name	Avg. Heat Flux (W/m^2)	Avg. Thermal Conductance (C) ($W/m^2 \cdot K$)	Avg. Thermal Resistance (Rsi) ($m^2 \cdot K/W$)	Avg. Thermal Resistivity (r) ($m \cdot K/W$)	Apparent Thermal Conductivity (k) ($W/m \cdot K$)	Specimen Avg. Thickness (mm)	†Specimen Avg. Density (kg/m^3)
1	Sample 1	68.23	2.453	0.41	16.33	0.061	24.97	346.54
2	Sample 2	69.24	2.489	0.40	16.17	0.062	24.84	350.84
3	Sample 3	66.92	2.408	0.42	16.60	0.060	25.02	366.09

†The density of the sample was determined by dividing the average weight of the sample by its volume. The weight was measured using a calibrated scale and the volume was determined by measuring the length, width, and height of the sample.

ANSI/NCSL Z540-2-1997 Type B uncertainty for this test was: 4%

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SECTION 8
PICTURES

Cementitious Wood Fiber Acoustic Panel - 1" Thick, (Sample 1)

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SECTION 8 (continued)
PICTURES

Cementitious Wood Fiber Acoustic Panel - 1" Thick, (Sample 2)

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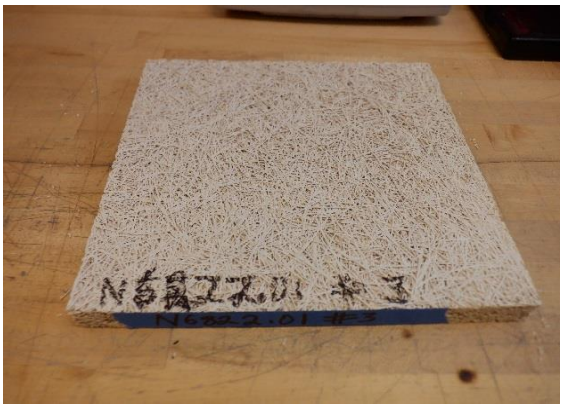
SECTION 8 (continued)
PICTURES

Cementitious Wood Fiber Acoustic Panel - 1" Thick, (Sample 3)



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SECTION 9
REVISION LOG

REVISION #	DATE	PAGES	REVISION
.01 R0	05/23/22	N/A	Original Report Issued to Customer.