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# ARCHITECTURAL METAL SOLUTIONS, LLC DBA LUMABUILT

# ACOUSTICAL PERFORMANCE TEST REPORT

**SCOPE OF WORK**
ASTM C423 SOUND ABSORPTION TESTING ON ALUMINUM PERFORATED MOSAIC PLANKS WITH AND WITHOUT OWENS CORNING® FIBERGLAS™ INSULATION, TYPE E MOUNT

**REPORT NUMBER**
U2280.01-303-11-R0

**TEST DATE**
07/18/26

**ISSUE DATE**
09/28/26

**PAGES**
18

**DOCUMENT CONTROL NUMBER**
RT-R-AMER-Test-2755 (08/20/25)
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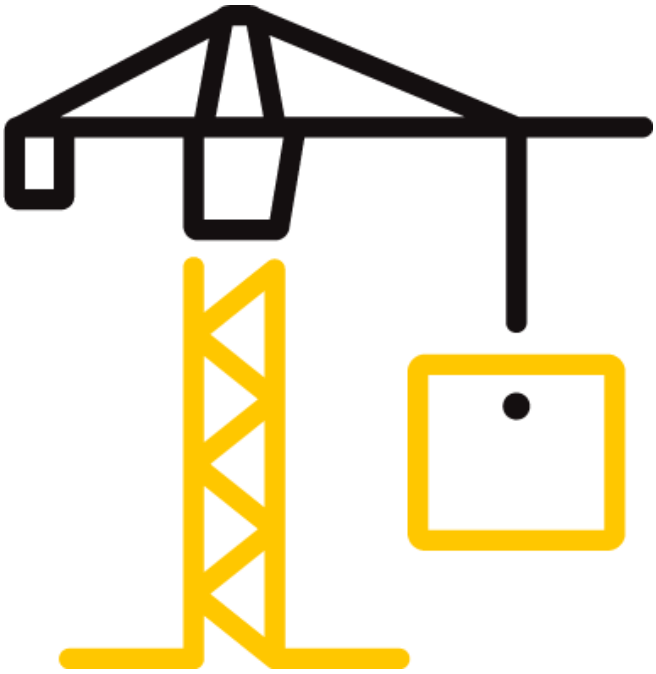

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# TEST REPORT FOR ARCHITECTURAL METAL SOLUTIONS, LLC DBA LUMABUILT

Report No.: U2280.01-303-11-R0
Date: 09/28/26

## REPORT ISSUED TO

**ARCHITECTURAL METAL SOLUTIONS, LLC DBA LUMABUILT**
2529 W. Jackson St.
Phoenix, AZ 85009

## SECTION 1

**SCOPE**

Architectural Testing, Inc. (an Intertek company) dba Intertek Building & Construction (B&C) was contracted by Architectural Metal Solutions, LLC dba Lumabuilt to perform a sound absorption test. Results obtained are tested values and were secured by using the designated test methods. The complete test data is included herein. The client provided the test specimen. All measurements were conducted in the HT test chambers at Intertek B&C located in Lake Forest, California.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. 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, 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** | Yahya Paya | **REVIEWED BY** | Todd D. Kister |
| **TITLE** | Acoustical Lab Manager<br>Acoustical Testing | **TITLE** | Senior Regional Manager<br>Acoustical Testing |
| **SIGNATURE** | Digitally Signed by: Yahya Paya | **SIGNATURE** | Digitally Signed by: Todd D. Kister |
| **DATE** | 09/28/26 | **DATE** | 09/28/26 |

YP:lcr

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## SECTION 2

**SUMMARY OF TEST RESULTS**

**U2280.01A**

| SAMPLE TYPE | Aluminum Perforated Mosaic Planks with Owens Corning® Fiberglas™ Insulation | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MOUNTING TYPE | E400 | | | | | | | |
| DATA FILE NO. | 1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES | | | | | | NRC | SAA |
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | | |
| U2280.01A | 0.64 | 0.97 | 0.71 | 0.86 | 0.86 | 0.77 | 0.85 | 0.86 |

**U2280.01B**

| SAMPLE TYPE | Aluminum Perforated Mosaic Planks | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| MOUNTING TYPE | E400 | | | | | | | |
| DATA FILE NO. | 1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES | | | | | | NRC | SAA |
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | | |
| U2280.01B | 0.23 | 0.25 | 0.12 | 0.09 | 0.11 | 0.20 | 0.15 | 0.15 |

## SECTION 3

**TEST METHODS**

The specimens were evaluated in accordance with the following:

**ASTM C423-23e1**, *Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method*

**ASTM E795-23**, *Standard Practices for Mounting Test Specimens During Sound Absorption Tests*

## SECTION 4

**SPECIMEN MOUNTING**

For the Type E-400 mounting, the specimen was placed on the Type E test assembly so that the absorptive face of specimen was suspended 400 mm above the floor of the reverberation room. The perimeter of the specimen was sealed to the test assembly with duct tape. The perimeter of the test assembly was sealed to the floor with duct tape.

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## SECTION 5
## EQUIPMENT

The equipment listed below meets the requirements of the test methods stated in Section 3 of this report.

### EQUIPMENT

| INSTRUMENT | MANUFACTURER | MODEL | DESCRIPTION | ASSET # | CAL DATE |
|---|---|---|---|---|---|
| Data Acquisition Card | National Instruments | PXIe-4464 | Data Acquisition Card | INT00837 | 09/25 |
| Data Acquisition Card | National Instruments | PXIe-4464 | Data Acquisition Card | INT00625 | 07/25 |
| Data Acquisition Card | National Instruments | PXIe-4464 | Data Acquisition Card | INT00396 | 10/25 |
| Receive Room Microphone | PBC Piezotronics | 378C20 | Microphone and Preamplifier | INT00235 | 10/25 |
| Receive Room Microphone | PCB Piezotronics | 378C20 | Microphone and Preamplifier | INT00234 | 10/25 |
| Receive Room Microphone | PCB Piezotronics | 378C20 | Microphone and Preamplifier | INT00236 | 10/25 |
| Receive Room Microphone | PCB Piezotronics | 378C20 | Microphone and Preamplifier | INT00237 | 10/25 |
| Receive Room Microphone | PCB Piezotronics | 378C20 | Microphone and Preamplifier | INT00238 | 10/25 |
| Receive Room Environmental Indicator | Comet | 378C20 | Receive Room | INT00229 | 05/26 |
| Microphone Calibrator | PCB Piezotronics | 378C20 | Acoustical Calibrator | INT01542 | 05/26 |

**- Note: The calibration frequency for this equipment is every two years per the manufacturer's recommendation.*

**TEST CHAMBER**

| | VOLUME | DESCRIPTION |
|---|---|---|
| RECEIVE ROOM | 231 $m^3$ | Rotating vane and stationary diffusers<br>Temperature and humidity controlled<br>Isolation pads under the floor |

*N/A-Not Applicable*

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Date: 09/28/26

## SECTION 6
**LIST OF OFFICIAL OBSERVERS**

| NAME | COMPANY |
|---|---|
| Michael Richie | Intertek B&C |
| Jose Alatorre | Intertek B&C |
| Yahya Paya | Intertek B&C |

## SECTION 7
**TEST PROCEDURE**

The sensitivity of the microphones was checked before measurements were conducted. Empty room sound absorption measurements were conducted before the specimen was installed. Full room sound absorption measurements were conducted after the specimen was installed.

For the empty and full room measurements, ten decay measurements were conducted at each of the five microphone positions. Data was obtained at 1/3 octave band frequencies ranging from 80 to 5000 hertz. The air temperature and relative humidity conditions were monitored and recorded during the measurements.

At the time of the issuance of this report, the disposition of the specimen had not yet been determined.

## SECTION 8
**TEST CALCULATIONS**

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the area of the sample in $m^2$. The Sound Absorption Coefficient is dimensionless.

The Noise Reduction Coefficient (NRC) rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000 and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.

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## SECTION 9

**TEST SPECIMEN DESCRIPTION**

**U2280.01A**

| | |
|---|---|
| **SAMPLE TYPE** | Aluminum Perforated Mosaic Planks with Owens Corning® Fiberglas™ Insulation |
| **MOUNTING TYPE** | E400 |

Sixteen planks, each measuring 0.16 m by 2.74 m (6-5/8" by 108"), planks were arranged to produce the 2.44 m by 2.74 m (96" by 108") test specimen. Eight trim pieces were installed around the perimeter of the specimen to secure the planks together.

Owens Corning® Fiberglas™ Insulation 0.02 m (1") thick, were arranged to produce a 2.44m by 2.74 m (96" by 108") specimen. The total weight of the boards was 7.87 kg (17.36 lbs).

The total weight of the specimen was 44.63 kg (98.4 lbs).

**U2280.01B**

| | |
|---|---|
| **SAMPLE TYPE** | Aluminum Perforated Mosaic Planks |
| **MOUNTING TYPE** | E400 |

Sixteen planks, each measuring 0.16 m by 2.74 m (6-5/8" by 108"), planks were arranged to produce the 2.44 m by 2.74 m (96" by 108") test specimen. Eight trim pieces were installed around the perimeter of the specimen to secure the planks together.

The total weight of the specimen was 36.76 kg (81.04 lbs).

| DESCRIPTION | THICKNESS | DENSITY | AREA WEIGHT |
|---|---|---|---|
| U2280.01A | 31.75 mm<br>1.25" | 213.81 kg/$m^3$<br>13.35 lbs/$ft^3$ | 6.67 kg/$m^2$<br>1.37 lbs/$ft^2$ |
| U2280.01B | 6.35 mm<br>0.25" | 790.68 kg/$m^3$<br>49.36 lbs/$ft^3$ | 5.02 kg/$m^2$<br>1.03 lbs/$ft^2$ |

** - Stated per Client/Manufacturer*

Photographs are included in Section 11.

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# TEST REPORT FOR ARCHITECTURAL METAL SOLUTIONS, LLC DBA LUMABUILT

Report No.: U2280.01-303-11-R0
Date: 09/28/26

## SECTION 10

### TEST RESULTS
### ASTM C423
### SOUND ABSORPTION TEST

NVLAP TESTING
Lab Code 600258-0

| | | |
|---|---|---|
| **TEST DATE** | 09/18/26 | |
| **DATA FILE NO.** | U2280.01A | |
| **CLIENT** | Architectural Metal Solutions, LLC dba Lumabuilt | |
| **DESCRIPTION** | Aluminum Perforated Mosaic Planks with Owens Corning® Fiberglas™ Insulation | |
| **TECHNICIAN** | Michael Richie | |
| **SPECIMEN AREA** | 6.69 m² | |
| **MOUNTING TYPE** | E400 | |
| | **EMPTY** | **FULL** |
| **TEMP °C** | 24.7 | 24.5 |
| **RH %** | 52 | 51 |
| **B.P. (mb)** | 993 | 993 |

| **FREQ** (Hz) | **EMPTY ROOM ABSORPTION** ($m^2$) | **FULL ROOM ABSORPTION** ($m^2$) | **ABSORPTION COEFFICIENT** |
|---|---|---|---|
| 80 | 4.48 | 6.26 | 0.27 |
| 100 | 5.51 | 8.44 | 0.44 |
| 125 | 5.19 | 9.45 | 0.64 |
| 160 | 4.36 | 9.58 | 0.78 |
| 200 | 4.96 | 11.05 | 0.91 |
| 250 | 6.13 | 12.59 | 0.97 |
| 315 | 6.33 | 12.24 | 0.88 |
| 400 | 5.57 | 10.43 | 0.73 |
| 500 | 4.70 | 9.47 | 0.71 |
| 630 | 4.90 | 10.38 | 0.82 |
| 800 | 4.95 | 11.08 | 0.92 |
| 1000 | 4.82 | 10.61 | 0.86 |
| 1250 | 4.92 | 10.80 | 0.88 |
| 1600 | 5.10 | 11.06 | 0.89 |
| 2000 | 5.68 | 11.42 | 0.86 |
| 2500 | 5.84 | 11.93 | 0.91 |
| 3150 | 5.98 | 11.62 | 0.84 |
| 4000 | 6.34 | 11.52 | 0.77 |
| 5000 | 6.47 | 11.48 | 0.75 |

| | | |
|---|---|---|
| **NRC RATING** | 0.85 | *(Noise Reduction Coefficient)* |
| **SAA RATING** | 0.86 | *(Sound Absorption Average)* |

*Notes:*

*1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.*

*2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.*

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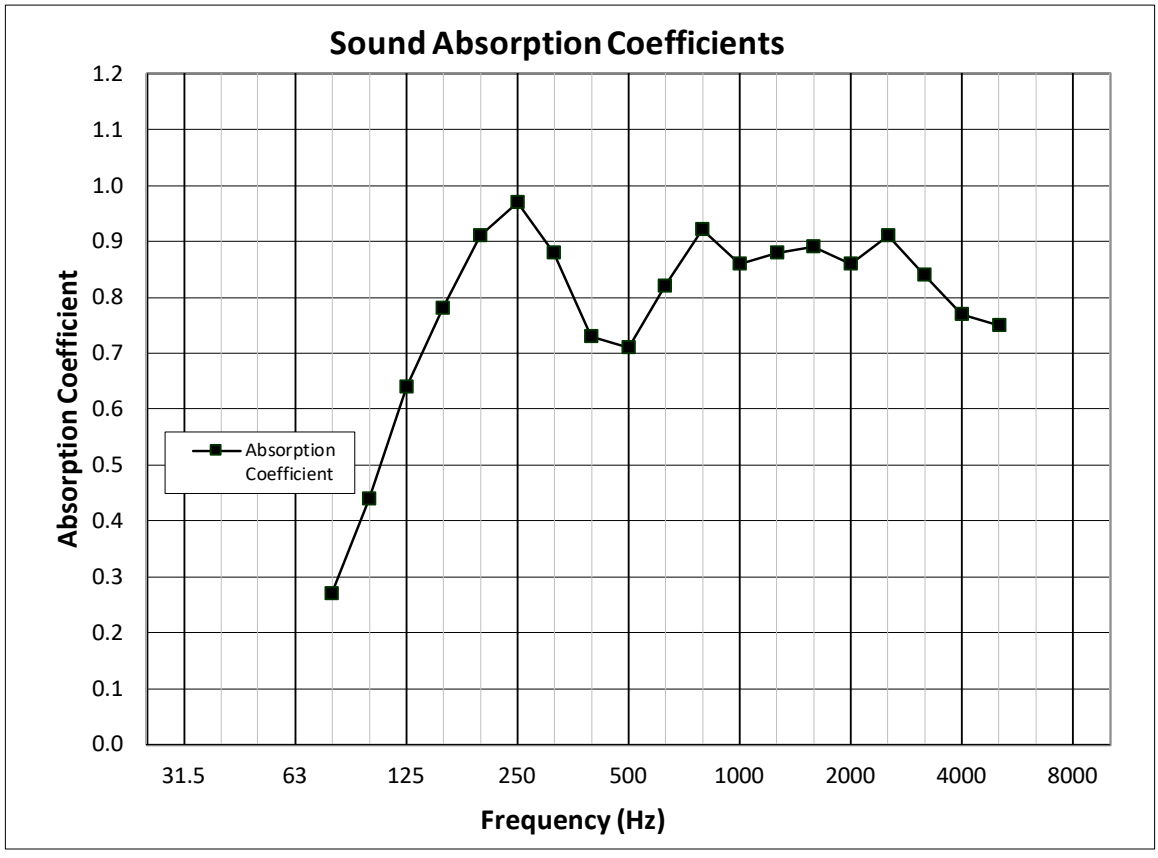
## ASTM C423
## SOUND ABSORPTION TEST

NVLAP TESTING
Lab Code 600258-0

| | | |
|---|---|---|
| **TEST DATE** | 09/18/26 | |
| **DATA FILE NO.** | U2280.01A | |
| **CLIENT** | Architectural Metal Solutions, LLC dba Lumabuilt | |
| **DESCRIPTION** | Aluminum Perforated Mosaic Planks with Owens Corning® Fiberglas™ Insulation | |
| **TECHNICIAN** | Michael Richie | |
| **SPECIMEN AREA** | 6.69 m² | |
| **MOUNTING TYPE** | E400 | |
| | **EMPTY** | **FULL** |
| **TEMP °C** | 24.7 | 24.5 |
| **RH %** | 52 | 51 |
| **B.P. (mb)** | 993 | 993 |



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Date: 09/28/26

## ASTM C423
## SOUND ABSORPTION TEST

NVLAP TESTING
Lab Code 600258-0

| | | |
|---|---|---|
| **TEST DATE** | 09/18/26 | |
| **DATA FILE NO.** | U2280.01B | |
| **CLIENT** | Architectural Metal Solutions, LLC dba Lumabuilt | |
| **DESCRIPTION** | Aluminum Perforated Mosaic Planks | |
| **TECHNICIAN** | Michael Richie | |
| **SPECIMEN AREA** | 6.69 m² | |
| **MOUNTING TYPE** | E400 | |
| | **EMPTY** | **FULL** |
| **TEMP °C** | 24.7 | 24.6 |
| **RH %** | 52 | 51 |
| **B.P. (mb)** | 993 | 992 |

| **FREQ** (Hz) | **EMPTY ROOM ABSORPTION** ($m^2$) | **FULL ROOM ABSORPTION** ($m^2$) | **ABSORPTION COEFFICIENT** |
|---|---|---|---|
| 80 | 4.48 | 5.28 | 0.12 |
| 100 | 5.51 | 6.24 | 0.11 |
| 125 | 5.19 | 6.71 | 0.23 |
| 160 | 4.36 | 5.70 | 0.20 |
| 200 | 4.96 | 6.69 | 0.26 |
| 250 | 6.13 | 7.81 | 0.25 |
| 315 | 6.33 | 7.56 | 0.18 |
| 400 | 5.57 | 6.24 | 0.10 |
| 500 | 4.70 | 5.48 | 0.12 |
| 630 | 4.90 | 5.66 | 0.11 |
| 800 | 4.95 | 5.60 | 0.10 |
| 1000 | 4.82 | 5.45 | 0.09 |
| 1250 | 4.92 | 5.58 | 0.10 |
| 1600 | 5.10 | 5.85 | 0.11 |
| 2000 | 5.68 | 6.42 | 0.11 |
| 2500 | 5.84 | 7.55 | 0.25 |
| 3150 | 5.98 | 7.53 | 0.23 |
| 4000 | 6.34 | 7.66 | 0.20 |
| 5000 | 6.47 | 7.90 | 0.22 |

| | | |
|---|---|---|
| **NRC RATING** | 0.15 | *(Noise Reduction Coefficient)* |
| **SAA RATING** | 0.15 | *(Sound Absorption Average)* |

*Notes:*

*1) The NRC rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000, and 2000 hertz. The average is rounded to the nearest multiple of 0.05.*

*2) The SAA rating is the arithmetic average of the sound absorption coefficients at the frequencies ranging from 200 to 2500 hertz. The average is rounded to the nearest multiple of 0.01.*

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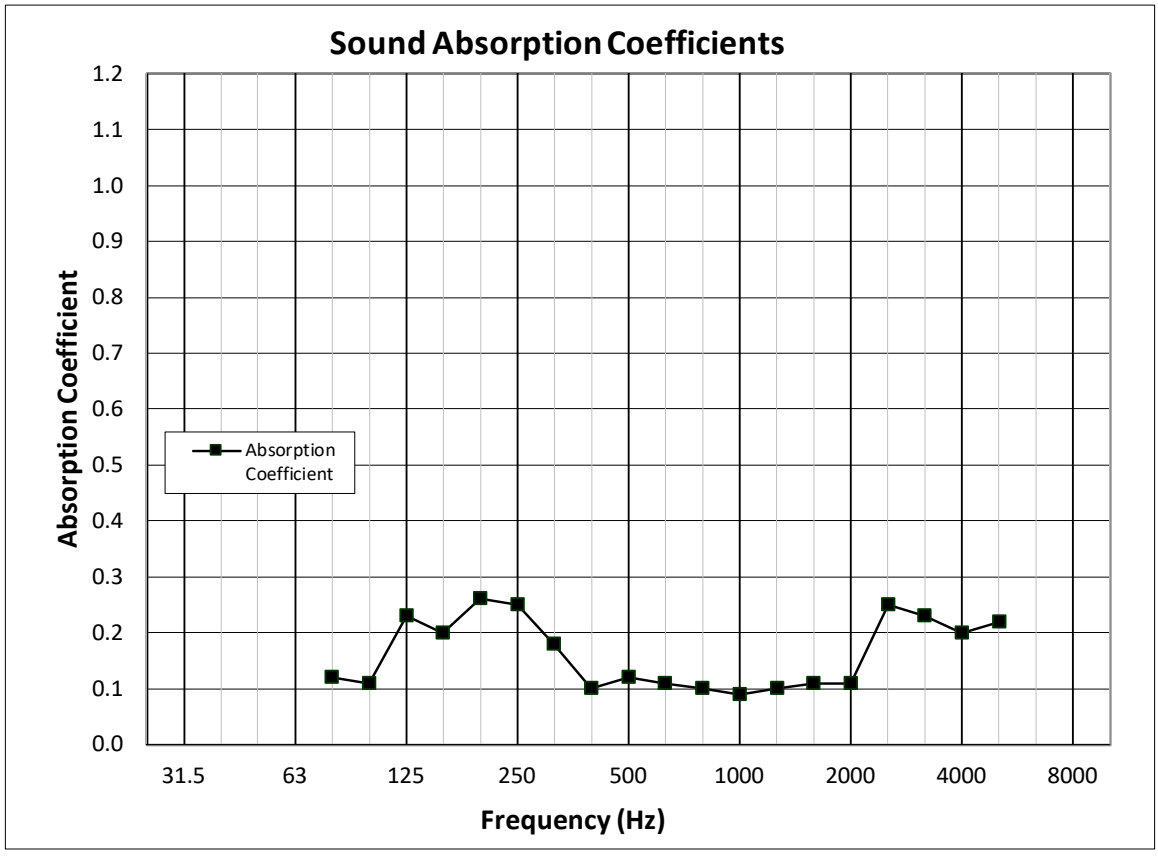
## ASTM C423
## SOUND ABSORPTION TEST

NVLAP TESTING
Lab Code 600258-0

| | | |
|---|---|---|
| **TEST DATE** | 09/18/26 | |
| **DATA FILE NO.** | U2280.01B | |
| **CLIENT** | Architectural Metal Solutions, LLC dba Lumabuilt | |
| **DESCRIPTION** | Aluminum Perforated Mosaic Planks | |
| **TECHNICIAN** | Michael Richie | |
| **SPECIMEN AREA** | 6.69 m² | |
| **MOUNTING TYPE** | E400 | |
| | **EMPTY** | **FULL** |
| **TEMP °C** | 24.7 | 24.6 |
| **RH %** | 52 | 51 |
| **B.P. (mb)** | 993 | 992 |



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## SECTION 11
## PHOTOGRAPHS

**Photo No. 1**
**U2280.01A View of Installed Sample**

**Photo No. 2**
**U2280.01A View of Installed Sample**

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**Photo No. 3**
**U2280.01B View of Installed Sample**

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**TEST REPORT FOR ARCHITECTURAL METAL SOLUTIONS, LLC DBA LUMABUILT**
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## SECTION 12
## REVISION LOG

| REVISION # | DATE | PAGES | REVISION |
|---|---|---|---|
| 0 | 09/28/26 | N/A | Original Report Issue |