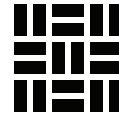


3000 NET

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ROLLEASE ACMEDA ACOUSTICAL PERFORMANCE TEST REPORT

SCOPE OF WORK

ASTM C423 SOUND ABSORPTION TESTING ON 3000 NET, ROLLER SHADE FABRIC

REPORT NUMBER

I7373.01-113-11 R0

TEST DATE

08/15/18

ISSUE DATE

09/04/18

RECORD RETENTION END DATE

08/15/22

PAGES

14

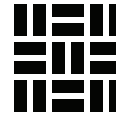
DOCUMENT CONTROL NUMBER

ATI 00270 (07/24/17)

RT-R-AMER-Test-2755

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TEST REPORT FOR ROLLESE ACMEDA

Report No.: I7373.01-113-11 R0
Date: 09/04/18

REPORT ISSUED TO
ROLLESE ACMEDA
200 Harvard Avenue
Stamford, Connecticut 06902

SECTION 1 SCOPE

Intertek Building & Construction (B&C) was contracted by Rollese Acmeda to perform a sound absorption test. Results obtained are tested values and were secured by using the designated test method(s). 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 York, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory.

For INTERTEK B&C:

COMPLETED BY: Jear N. Mutunda
Technician II
TITLE: Acoustical testing
SIGNATURE: 
Digitally signed by: Jear Mutunda
DATE: 09/04/18

REVIEWED BY: Kurt A. Golden
Project Lead
TITLE: Acoustical Testing
SIGNATURE: 
Digitally signed by: Kurt A. Golden
DATE: 09/04/18

JNM:jmcs

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Page 2 of 14

Version: 07/24/17

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TEST REPORT FOR ROLLEASE ACMEDA
Report No.: I7373.01-113-11 R0
Date: 09/04/18

SECTION 2
SUMMARY OF TEST RESULTS

| SERIES/MODEL | 3000 NET 1% | | | | | | | |
|----------------------|---|------|------|------|------|------|------|------|
| SAMPLE TYPE | Roller shade fabric | | | | | | | |
| MOUNTING TYPE | G | | | | | | | |
| DATA FILE NO. | 1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES | | | | | | NRC | SAA |
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | | |
| I7373.01A | 0.04 | 0.19 | 0.52 | 0.80 | 0.66 | 0.56 | 0.55 | 0.55 |

| SERIES/MODEL | 3000 NET 3% | | | | | | | |
|----------------------|---|------|------|------|------|------|------|------|
| SAMPLE TYPE | Roller shade fabric | | | | | | | |
| MOUNTING TYPE | G | | | | | | | |
| DATA FILE NO. | 1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES | | | | | | NRC | SAA |
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | | |
| I7373.01B | 0.03 | 0.05 | 0.12 | 0.27 | 0.17 | 0.19 | 0.15 | 0.16 |

| SERIES/MODEL | 3000 NET 5% | | | | | | | |
|----------------------|---|------|------|------|------|------|------|------|
| SAMPLE TYPE | Roller shade fabric | | | | | | | |
| MOUNTING TYPE | G | | | | | | | |
| DATA FILE NO. | 1/3 OCTAVE SOUND ABSORPTION COEFFICIENTS AT THE OCTAVE BAND FREQUENCIES | | | | | | NRC | SAA |
| | 125 | 250 | 500 | 1000 | 2000 | 4000 | | |
| I7373.01C | 0.02 | 0.02 | 0.07 | 0.17 | 0.11 | 0.08 | 0.10 | 0.10 |

SECTION 3
TEST METHODS

The specimens were evaluated in accordance with the following:

ASTM C423-17, Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

ASTM E795-16, Standard Practices for Mounting Test Specimens During Sound Absorption Tests

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SECTION 4
SPECIMEN MOUNTING

For the Type G mounting, the test specimen was fabric hung from a solid beam parallel to the test surface. The specimen was hung 75 mm (3") from the test surface.

SECTION 5
EQUIPMENT

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

| INSTRUMENT | MANUFACTURER | MODEL | DESCRIPTION | ASSET # | DATE OF CALIBRATION |
|--------------------------------------|----------------------|----------|--------------------------------------|---------|---------------------|
| Data Acquisition Card | National Instruments | PXI-4462 | Data Acquisition Card | 65125 | 05/18 |
| Data Acquisition Card | National Instruments | PXI-4462 | Data Acquisition Card | 65126 | 05/18 |
| Data Acquisition Card | National Instruments | PXI-4462 | Data Acquisition Card | 63763-3 | 04/18 |
| Microphone Calibrator | Norsonic | 1251 | Acoustical Calibrator | Y002919 | 04/18 |
| Receive Room Microphone | PCB Piezotronics | 378B20 | Microphone and Preamplifier | 64907 | 12/17 |
| Receive Room Microphone | PCB Piezotronics | 378B20 | Microphone and Preamplifier | 64908 | 12/17 |
| Receive Room Microphone | PCB Piezotronics | 378B20 | Microphone and Preamplifier | 64909 | 12/17 |
| Receive Room Microphone | PCB Piezotronics | 378B20 | Microphone and Preamplifier | 64910 | 12/17 |
| Receive Room Microphone | PCB Piezotronics | 378B20 | Microphone and Preamplifier | 64911 | 01/18 |
| Receive Room Environmental Indicator | Comet | T7510 | Temperature and Humidity Transmitter | 64915 | 03/18 |

Test Chamber:

| | VOLUME | DESCRIPTION |
|--------------|--------------------|---|
| RECEIVE ROOM | 234 m ³ | Rotating vane and stationary diffusers Temperature and humidity controlled Isolation pads under the floor |

N/A-Not Applicable

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SECTION 6 LIST OF OFFICIAL OBSERVERS

| NAME | COMPANY |
|-----------------|--------------|
| Jear N. Mutunda | Intertek B&C |
| Kurt A. Golden | 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.

Intertek B&C will store samples of test specimens for four years.

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 m². The Sound Absorption Coefficient is dimensionless.

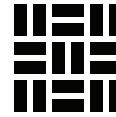
The Noise Reduction Coefficient (NRC) rating is the arithmetic average of the sound absorption coefficients at 250, 500, 1000 and 2000 hertz. The average is rounded to the nearest multiple of 0.05.

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.

The Sound Absorption Coefficient is the full room absorption minus the empty room absorption divided by the number of units being tested. The Sound Absorption Coefficient is dimensionless.

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SECTION 9 TEST SPECIMEN DESCRIPTION

The fabric was arranged to produce a 2.44 m by 2.74 m (96" by 108") test specimen. The total weight of the specimen was 3.59 kg (7.92 lbs).

Photographs are included in Section 11.

The client did not supply a report drawing of the test specimen.

| DESCRIPTION | AVERAGE WEIGHT | AVERAGE THICKNESS | TOTAL WEIGHT |
|---|--------------------------|-------------------|--------------|
| 3000 NET 1% - 75% PVC, 25% polyester screen fabric | 0.54 kg/m ² | 0.64 mm | 3.59 Kg |
| | 0.11 lbs/ft ² | 0.03" | 7.92 lbs |
| 3000 NET 3% - 75% PVC, 25% polyester screen fabric | 0.46 kg/m ² | 0.56 mm | 3.10 Kg |
| | 0.10 lbs/ft ² | 0.02" | 6.84 lbs |
| 3000 NET 5% - 75% PVC, 25% polyester screen fabric | 0.44 kg/m ² | 0.51 mm | 2.94 Kg |
| | 0.09 lbs/ft ² | 0.02" | 6.48 lbs |

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SECTION 10
TEST RESULTS

I7373.01A DATA

| | |
|----------------------|---------------------|
| SPECIMEN AREA | 6.69 m ² |
| MOUNTING TYPE | B |

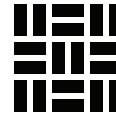
| | EMPTY | FULL |
|------------------|-------|------|
| TEMP °C | 21.3 | 21.9 |
| RH % | 51 | 51 |
| B.P. (mb) | 985 | 985 |

| FREQ (Hz) | EMPTY ROOM ABSORPTION (m ²) | UNCERTAINTY | FULL ROOM ABSORPTION (m ²) | UNCERTAINTY | ABSORPTION COEFFICIENT | RELATIVE UNCERTAINTY |
|--------------|---|-------------|--|-------------|---------------------------|-------------------------|
| 63 | 3.48 | 0.707 | 3.57 | 0.898 | 0.01 | 0.171 |
| 80 | 3.86 | 1.373 | 4.07 | 0.864 | 0.03 | 0.242 |
| 100 | 4.61 | 0.617 | 4.72 | 0.765 | 0.02 | 0.147 |
| 125 | 4.62 | 0.433 | 4.91 | 0.332 | 0.04 | 0.082 |
| 160 | 4.34 | 0.107 | 4.70 | 0.134 | 0.05 | 0.026 |
| 200 | 4.33 | 0.148 | 5.05 | 0.124 | 0.11 | 0.029 |
| 250 | 4.91 | 0.089 | 6.18 | 0.073 | 0.19 | 0.017 |
| 315 | 5.18 | 0.045 | 7.21 | 0.071 | 0.30 | 0.013 |
| 400 | 5.30 | 0.042 | 8.02 | 0.066 | 0.41 | 0.012 |
| 500 | 5.22 | 0.055 | 8.67 | 0.249 | 0.52 | 0.038 |
| 630 | 4.91 | 0.036 | 9.27 | 0.026 | 0.65 | 0.007 |
| 800 | 5.10 | 0.025 | 10.10 | 0.021 | 0.75 | 0.005 |
| 1000 | 5.07 | 0.011 | 10.43 | 0.013 | 0.80 | 0.003 |
| 1250 | 5.39 | 0.022 | 10.78 | 0.017 | 0.81 | 0.004 |
| 1600 | 5.45 | 0.014 | 10.40 | 0.010 | 0.74 | 0.003 |
| 2000 | 5.36 | 0.016 | 9.76 | 0.017 | 0.66 | 0.004 |
| 2500 | 5.57 | 0.012 | 9.84 | 0.173 | 0.64 | 0.026 |
| 3150 | 6.18 | 0.011 | 10.17 | 0.004 | 0.60 | 0.002 |
| 4000 | 6.60 | 0.007 | 10.32 | 0.006 | 0.56 | 0.001 |
| 5000 | 7.15 | 0.008 | 10.46 | 0.010 | 0.49 | 0.002 |
| 6300 | 7.31 | 0.003 | 10.38 | 0.002 | 0.46 | 0.001 |
| 8000 | 8.41 | 0.006 | 10.69 | 0.005 | 0.34 | 0.001 |
| 10000 | 8.68 | 0.005 | 10.24 | 0.001 | 0.23 | 0.001 |

| | | |
|-------------------|------|-------------------------------|
| NRC RATING | 0.55 | (Noise Reduction Coefficient) |
| SAA RATING | 0.55 | (Sound Absorption Average) |

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.

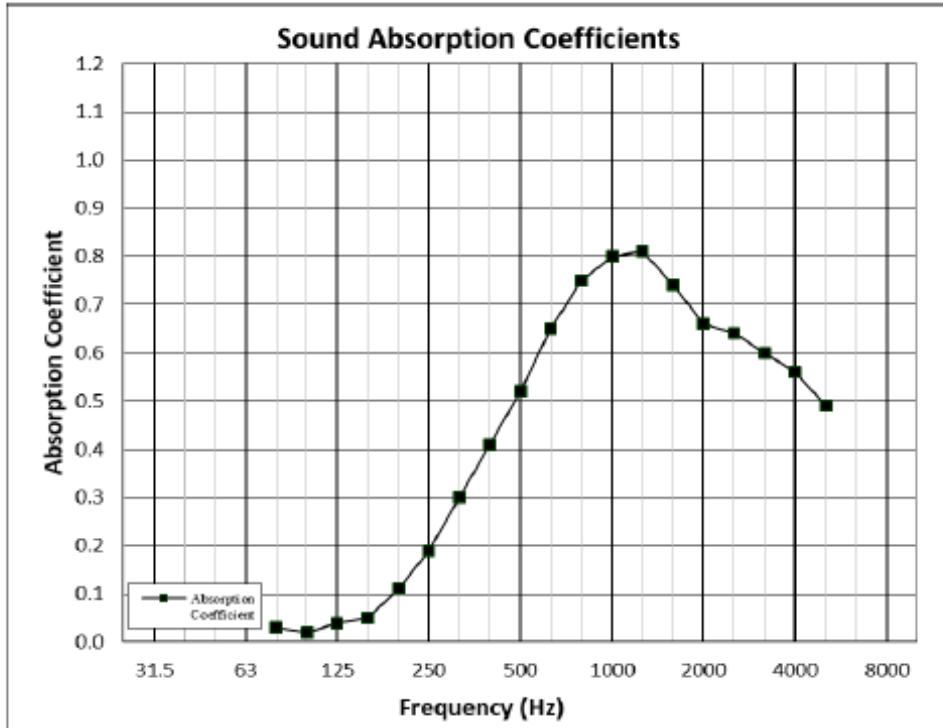
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I7373.01B DATA

| | |
|----------------------|---------------------|
| SPECIMEN AREA | 6.69 m ² |
| MOUNTING TYPE | G |

| | EMPTY | FULL |
|------------------|-------|------|
| TEMP °C | 21.3 | 22.3 |
| RH % | 51 | 51 |
| B.P. (mb) | 985 | 986 |

| FREQ (Hz) | EMPTY ROOM ABSORPTION (m ²) | UNCERTAINTY | FULL ROOM ABSORPTION (m ²) | UNCERTAINTY | ABSORPTION COEFFICIENT | RELATIVE UNCERTAINTY |
|--------------|---|-------------|--|-------------|---------------------------|-------------------------|
| 63 | 3.48 | 0.707 | 3.63 | 1.049 | 0.02 | 0.189 |
| 80 | 3.86 | 1.373 | 4.13 | 0.798 | 0.04 | 0.237 |
| 100 | 4.61 | 0.617 | 4.74 | 0.935 | 0.02 | 0.167 |
| 125 | 4.62 | 0.433 | 4.84 | 0.364 | 0.03 | 0.085 |
| 160 | 4.34 | 0.107 | 4.48 | 0.105 | 0.02 | 0.023 |
| 200 | 4.33 | 0.148 | 4.46 | 0.165 | 0.02 | 0.033 |
| 250 | 4.91 | 0.089 | 5.22 | 0.104 | 0.05 | 0.020 |
| 315 | 5.18 | 0.045 | 5.62 | 0.069 | 0.07 | 0.012 |
| 400 | 5.30 | 0.042 | 5.86 | 0.031 | 0.09 | 0.008 |
| 500 | 5.22 | 0.055 | 6.01 | 0.156 | 0.12 | 0.025 |
| 630 | 4.91 | 0.036 | 6.09 | 0.024 | 0.18 | 0.007 |
| 800 | 5.10 | 0.025 | 6.62 | 0.018 | 0.23 | 0.005 |
| 1000 | 5.07 | 0.011 | 6.85 | 0.027 | 0.27 | 0.004 |
| 1250 | 5.39 | 0.022 | 7.25 | 0.022 | 0.28 | 0.005 |
| 1600 | 5.45 | 0.014 | 7.01 | 0.013 | 0.23 | 0.003 |
| 2000 | 5.36 | 0.016 | 6.49 | 0.003 | 0.17 | 0.002 |
| 2500 | 5.57 | 0.012 | 7.01 | 0.319 | 0.22 | 0.048 |
| 3150 | 6.18 | 0.011 | 7.54 | 0.010 | 0.20 | 0.002 |
| 4000 | 6.60 | 0.007 | 7.86 | 0.004 | 0.19 | 0.001 |
| 5000 | 7.15 | 0.008 | 8.27 | 0.006 | 0.17 | 0.001 |
| 6300 | 7.31 | 0.003 | 8.33 | 0.003 | 0.15 | 0.001 |
| 8000 | 8.41 | 0.006 | 9.03 | 0.005 | 0.09 | 0.001 |
| 10000 | 8.68 | 0.005 | 8.94 | 0.005 | 0.04 | 0.001 |

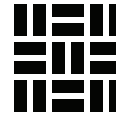
| | | |
|-------------------|------|-------------------------------|
| NRC RATING | 0.15 | (Noise Reduction Coefficient) |
| SAA RATING | 0.16 | (Sound Absorption Average) |

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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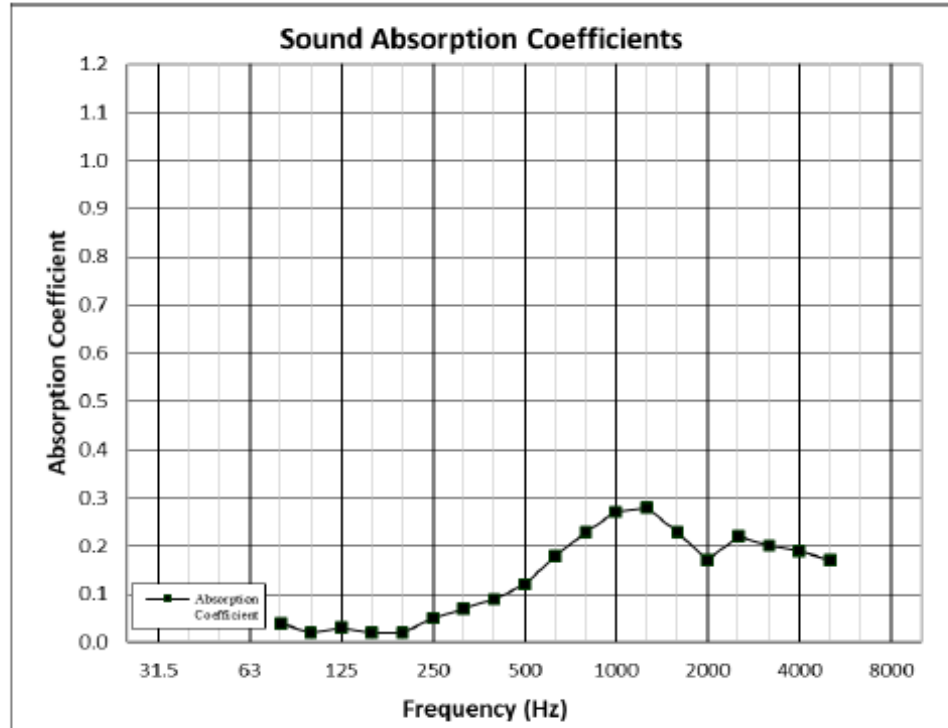
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I7373.01B GRAPH



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I7373.01C DATA

| | |
|---------------|---------------------|
| SPECIMEN AREA | 6.69 m ² |
| MOUNTING TYPE | G |

| | EMPTY | FULL |
|-----------|-------|------|
| TEMP °C | 21.3 | 22.7 |
| RH % | 51 | 53 |
| B.P. (mb) | 985 | 986 |

| FREQ (Hz) | EMPTY ROOM ABSORPTION (m ²) | UNCERTAINTY | FULL ROOM ABSORPTION (m ²) | UNCERTAINTY | ABSORPTION COEFFICIENT | RELATIVE UNCERTAINTY |
|--------------|---|-------------|--|-------------|---------------------------|-------------------------|
| 63 | 3.48 | 0.707 | 3.56 | 1.126 | 0.01 | 0.199 |
| 80 | 3.86 | 1.373 | 4.06 | 0.926 | 0.03 | 0.248 |
| 100 | 4.61 | 0.617 | 4.89 | 0.572 | 0.04 | 0.126 |
| 125 | 4.62 | 0.433 | 4.74 | 0.445 | 0.02 | 0.093 |
| 160 | 4.34 | 0.107 | 4.44 | 0.187 | 0.01 | 0.032 |
| 200 | 4.33 | 0.148 | 4.43 | 0.203 | 0.02 | 0.038 |
| 250 | 4.91 | 0.089 | 5.07 | 0.086 | 0.02 | 0.018 |
| 315 | 5.18 | 0.045 | 5.50 | 0.044 | 0.05 | 0.009 |
| 400 | 5.30 | 0.042 | 5.66 | 0.026 | 0.05 | 0.007 |
| 500 | 5.22 | 0.055 | 5.71 | 0.118 | 0.07 | 0.019 |
| 630 | 4.91 | 0.036 | 5.68 | 0.027 | 0.12 | 0.007 |
| 800 | 5.10 | 0.025 | 6.08 | 0.032 | 0.15 | 0.006 |
| 1000 | 5.07 | 0.011 | 6.23 | 0.016 | 0.17 | 0.003 |
| 1250 | 5.39 | 0.022 | 6.62 | 0.012 | 0.18 | 0.004 |
| 1600 | 5.45 | 0.014 | 6.52 | 0.016 | 0.16 | 0.003 |
| 2000 | 5.36 | 0.016 | 6.11 | 0.018 | 0.11 | 0.004 |
| 2500 | 5.57 | 0.012 | 6.51 | 0.323 | 0.14 | 0.048 |
| 3150 | 6.18 | 0.011 | 6.95 | 0.011 | 0.11 | 0.002 |
| 4000 | 6.60 | 0.007 | 7.17 | 0.011 | 0.08 | 0.002 |
| 5000 | 7.15 | 0.008 | 7.37 | 0.008 | 0.03 | 0.002 |
| 6300 | 7.31 | 0.003 | 7.27 | 0.004 | 0.00 | 0.001 |
| 8000 | 8.41 | 0.006 | 7.58 | 0.005 | 0.00 | 0.001 |
| 10000 | 8.68 | 0.005 | 6.92 | 0.003 | 0.00 | 0.001 |

| | | |
|------------|------|-------------------------------|
| NRC RATING | 0.10 | (Noise Reduction Coefficient) |
| SAA RATING | 0.10 | (Sound Absorption Average) |

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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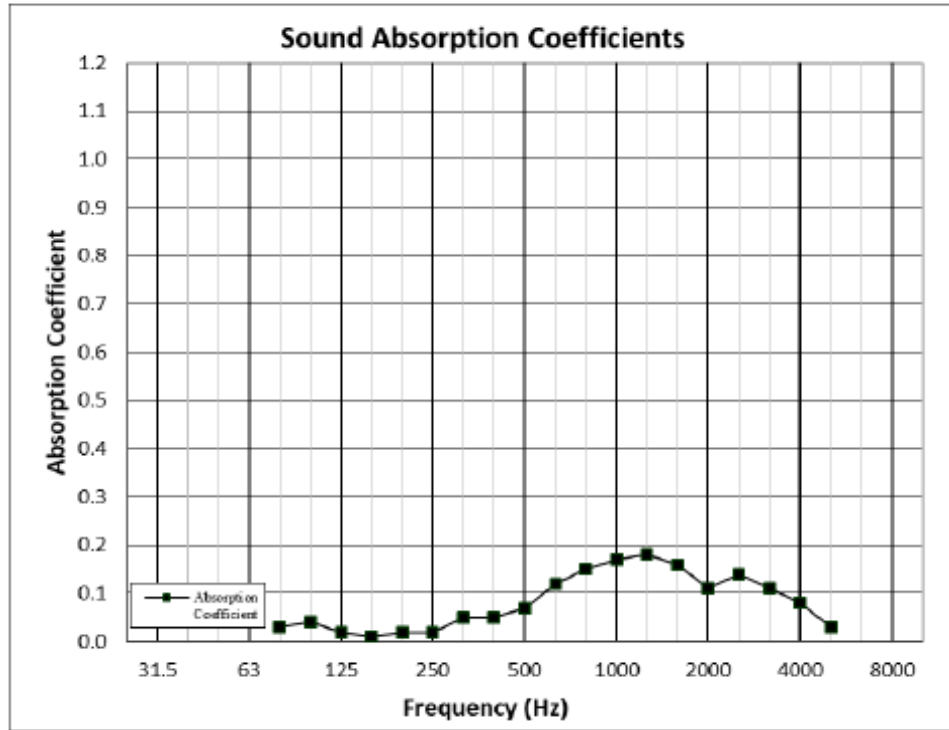


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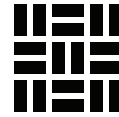
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SECTION 11 PHOTOGRAPHS



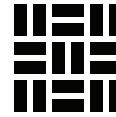
Photo No. 1
View of Installed Specimen



Photo No. 2
Side View of Installed Specimen

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SECTION 12
REVISION LOG

| REVISION # | DATE | PAGES | REVISION |
|------------|----------|-------|-----------------------|
| 0 | 09/04/18 | N/A | Original Report Issue |