

REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 103762610

Date: January 3, 2019

REPORT NO. 103762610CRT-002

SOUND ABSORPTION TEST ON ONE FRP SOUND WALL WITH SLOTS

RENDERED TO

**FIBERGRATE COMPOSITE STRUCTURES
900 FM 205
STEPHENVILLE, TX 76401-4688**

INTRODUCTION

This report gives the results of a Sound Absorption test and the determination of the Noise Reduction Coefficient on one FRP Sound Wall with slots. The test specimen was selected and supplied by the client and received at the laboratories on January 2, 2019. The sample appeared to be in a new, unused condition.

AUTHORIZATION

Signed Intertek Quotation No. Qu-00919120

TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM C423-2017, "Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method".

GENERAL

This test method describes the measurement of sound absorption by analyzing the decay rate of sound in a reverberation room. The difference of the decay with and without the specimen in the room is utilized to determine the sound absorption of the specimen under test. Intertek Testing Services Acoustical Facilities utilizes a 16,640 cu. ft. (470 cubic meter) reverberation room.

GENERAL - Cont'd

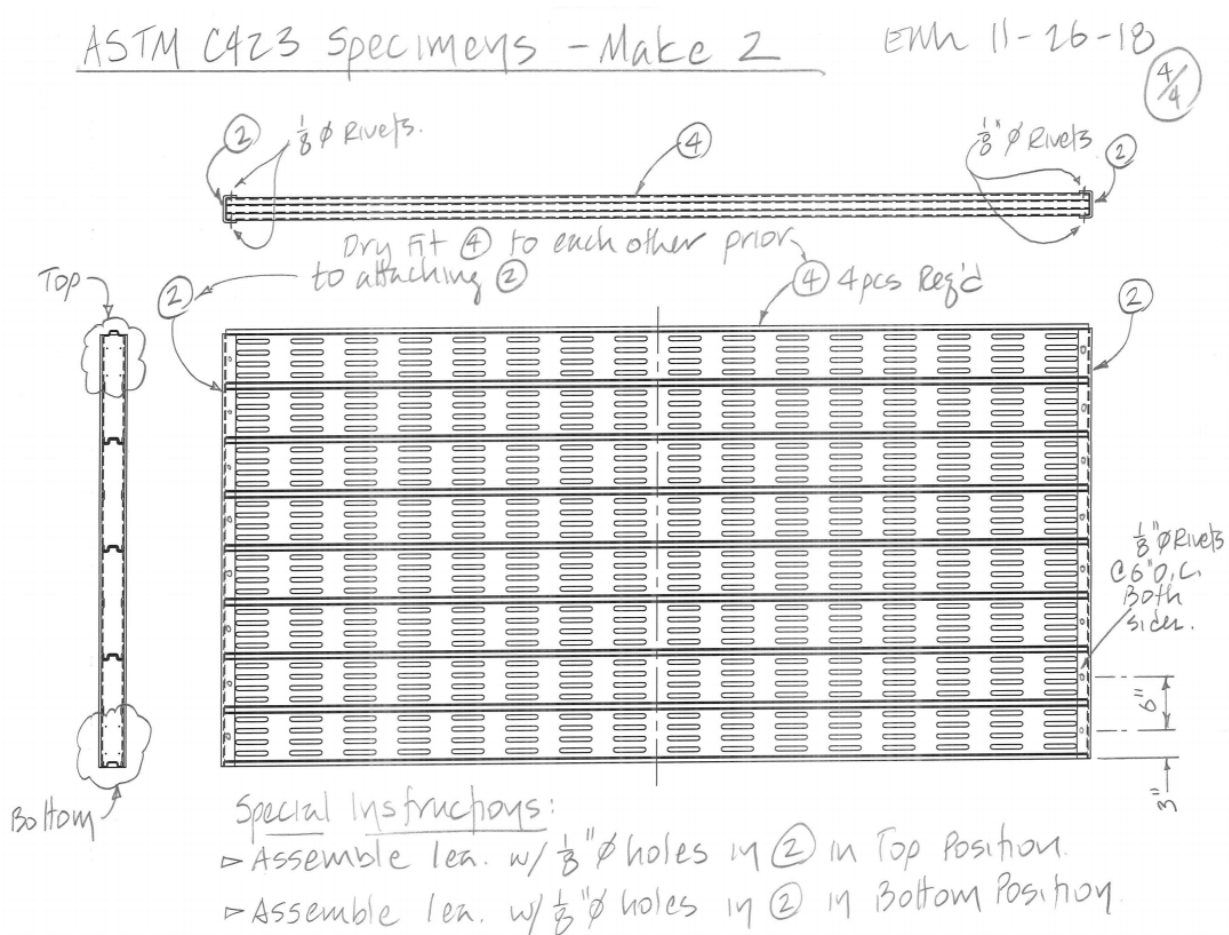
The sound absorption coefficient is ideally defined as the fraction of the randomly incident sound power absorbed by the material. The greater the coefficient, the greater the sound absorption.

The Noise Reduction Coefficient (NRC) is a single number rating obtained by taking the arithmetic average of the absorption coefficients at 250, 500, 1000, and 2000 Hz rounded to the nearest multiple of 0.05.

The Sound Absorption Average (SAA) is a single number rating obtained by taking the arithmetic average of the one-third octave bands from 200 through 2500 Hz rounded to the nearest 0.01.

DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of a 97 inch wide by 96 inch long test area covered with a FRP Sound Wall laid on the concrete floor of our 16,640 cu. ft. reverberation room. The sample weighed 253 lbs.



RESULTS OF TEST

FRP SOUND WALL WITH SLOTS

<u>One Third Octave Band Center Frequency, Hz</u>	<u>Absorption Coefficients Sabins/m²</u>	<u>Repeatability, R</u>	<u>Reproducibility, r</u>
80	0.00	0.14	0.14
100	0.03	0.15	0.27
125	<u>0.45</u>	0.11	0.22
160	0.01	0.11	0.23
200	0.71	0.09	0.17
250	<u>1.12</u>	0.07	0.15
315	0.88	0.09	0.22
400	1.28	0.14	0.16
500	<u>1.26</u>	0.09	0.14
630	1.20	0.06	0.14
800	1.10	0.07	0.14
1000	<u>0.88</u>	0.06	0.12
1250	0.82	0.05	0.13
1600	0.76	0.05	0.14
2000	<u>0.67</u>	0.05	0.13
2500	0.52	0.06	0.14
3150	0.48	0.08	0.15
4000	<u>0.48</u>	0.11	0.16
5000	0.37	0.15	0.21
<u>Sound Absorption Average (SAA)</u>	0.93	0.08	0.03

Absorption Coefficients – Sabins/m.²
One-Third Octave Band Center Frequency, Hz

<u>IDENTIFICATION</u>	<u>125</u>	<u>250</u>	<u>500</u>	<u>1000</u>	<u>2000</u>	<u>4000</u>	<u>NRC</u>
FRP SOUND WALL WITH SLOTS	0.45	1.12	1.26	0.88	0.67	0.48	1.00

MOUNTING: Type “A” per ASTM Designation E795-16, “Standard Practices for Mounting Test Specimens During Sound Absorption Tests”.

REMARKS

1. Aging Period: None
2. Ambient Temperature: 69°F
3. Relative Humidity: 40%

CONCLUSION

The test method employed for this test has no pass-fail criteria, therefore, the evaluation of the test results is left to the discretion of the client.

Date of Test: January 3, 2019

Report Approved by:



Brian Cyr
Engineer
Acoustical Testing

Report Reviewed By:



James R. Kline
Engineer/Quality Supervisor
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Attachments: None