intertek
Total Quality. Assured.

REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Order No. 103762610 Date: January 18, 2019

REPORT NO. 103762610CRT-001a

**SOUND TRANSMISSION LOSS TEST
AND CLASSIFICATION ON
FRP SOUND WALL PANELS**

RENDERED TO

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

INTRODUCTION

This report gives the results of a Sound Transmission Loss test and the determination of the Sound Transmission Class on FRP Sound Wall Panels. The test sample was selected and supplied by the client and received at the laboratories on January 2, 2019. The sample appeared to be in new, unused condition upon arrival.

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 E90-09 (2016), "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions", and classified in accordance with the American Society for Testing and Materials designation ASTM E413-2016, "Classification for Rating Sound Insulation" and ASTM Standard E1332-16 entitled, "Standard Classification for Rating Outdoor-Indoor Sound Attenuation".

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.

EQUIPMENT

Equipment	Calibration Date	Due Date	S/N	Model	Brand	Asset
Microphone Calibrator	3/15/2018	3/15/2019	2130586	4231	Brüel and Kjær	A227
Pulse Analyzer	3/15/2018	3/15/2019	2519258	7539	Brüel and Kjær	E446
Microphone/Pre - DF	10/11/2018	10/11/2019	2381161	4942	Brüel and Kjær	E450
Microphone/Pre - DF	3/9/2018	3/9/2019	2660222	4942	Brüel and Kjær	E451

GENERAL

The sound-insulating property of a partition element is expressed in terms of the sound transmission loss. The procedure for determining this quantity is to mount (and perimeter seal) the test specimen as a partition between two reverberation rooms. Sound is introduced in one of the rooms (the source room) and measurements are made of the noise reduction between source room (10,000 cu .ft.) and receiving room (16,640 cu. ft.). The rooms are so arranged and constructed that the only significant sound transmission between them is through the test specimen.

The test opening is constructed such that it is approximately one inch larger in size than the test specimen. The specimen is placed in the test opening an a half-inch bead of "DUX-SEAL", a dense, non-hardening, clay-like material, to isolate it from the supporting base. The space between the test specimen and the wall opening is sealed on both sides employing the same sealing material.

The purpose of the Sound Transmission Class (STC) is to provide a single figure rating that can be used for comparing the sound-insulating properties of partition elements used for general building design purposes. The higher the rating (STC) the greater the sound insulating properties of the partition.

The purpose of the Outdoor-Indoor Transmission Class (OITC) is to provide a single number rating that can be used for comparing building façade designs, including walls, doors, windows and combinations thereof. This rating is designed to correlate with subjective impressions of the ability of building elements to reduce the overall loudness of ground and air transportation noise. It is intended to be used as a rank ordering device.

DESCRIPTION OF TEST SPECIMEN

The test specimen consisted of a 97 inch wide by 96 inch high fiberglass panel assembly consisting of eight 12 inch wide by 96 inch high panels. The hollow panels were 2 ½ inch thick and weighed 229 pounds. During testing, the seams between the panels did not have any sealant.

PICTURE OF TEST SAMPLE

RESULTS OF TEST

FRP SOUND WALL PANELS

1/3 Octave Band Center Frequency Hz	Sound Transmission Loss in dB
80	12
100	11
125	10
160	10
200	18
250	22
315	24
400	26
500	28
630	31
800	32
1000	34
1250	36
1600	39
2000	41
2500	42
3150	40
4000	39
5000	35
STC – Sound Transmission Class	31
OITC - Outdoor-Indoor Transmission Class	20

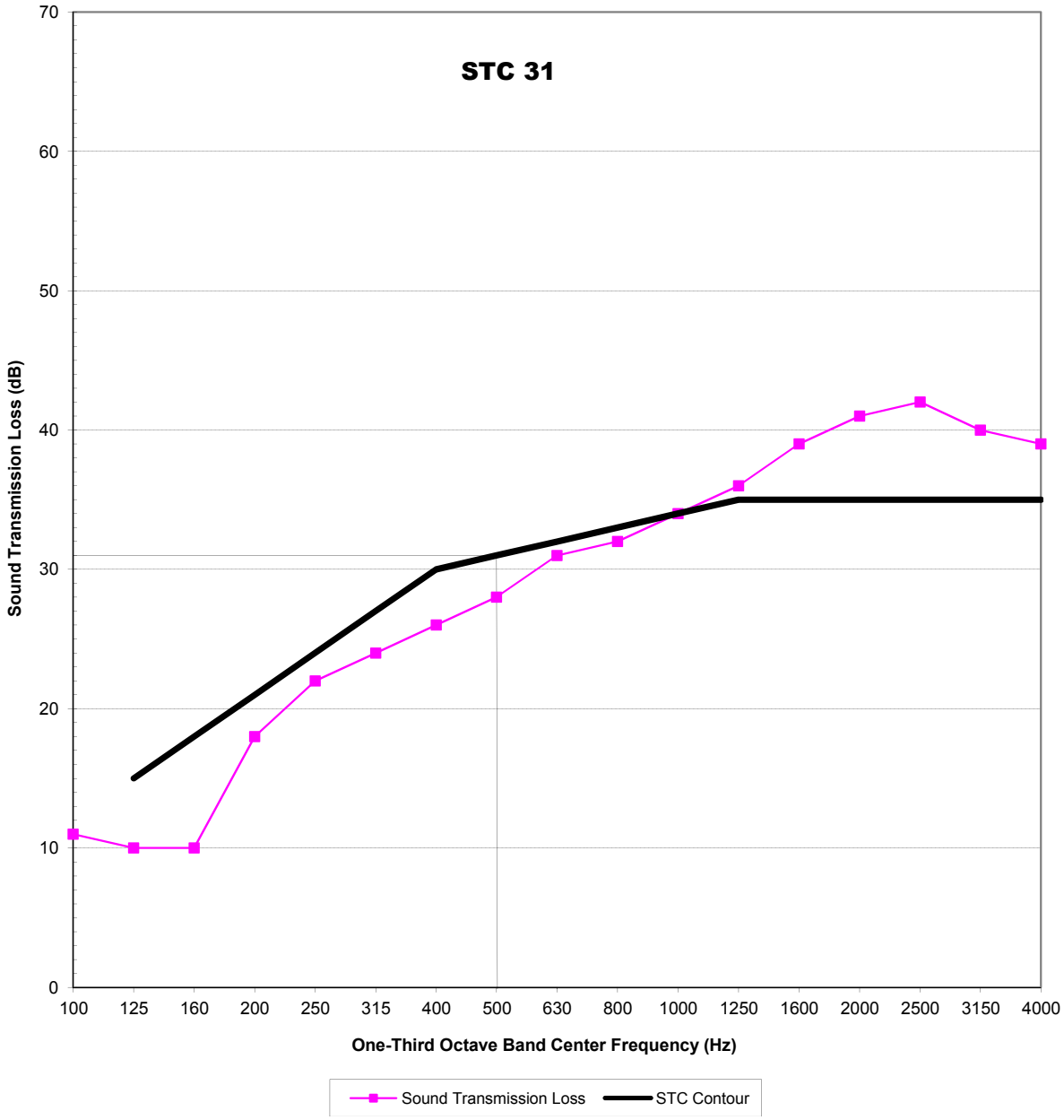
PRECISION

For any pair of rooms and microphone system, the 95% confidence interval ΔTL, for transmission loss must be less than the following.

Range of One-Third Octave Bands	Transmission Loss Uncertainty, dB	
	Required	Actual
125 and 160	3	<1.5
200 and 250	2	<1.5
315 - 4000	1	<1

FRP SOUND WALL PANELS

Sound Transmission Loss



FIBERGRATE COMPOSITE STRUCTURES

REMARKS

1. Ambient Temperature: 69°F
2. Relative Humidity: 31%

CONCLUSION

Date of Test: January 18, 2019

Report Approved by:

Brian Cyr
Engineer
Acoustical Testing

Report Reviewed By:

James R. Kline
Engineer/Quality Supervisor
Acoustical Testing

Attachments: None