



REPORT

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FOR THE SCOPE OF
ACCREDITATION UNDER NVLAP LAB
CODE 100402-0.

Order No. 100667931

Date: May 23, 2012

REPORT NO. 100667931CRT-001a

**SOUND TRANSMISSION LOSS TEST
AND CLASSIFICATION OF AN 8 INCH THICK
CONCRETE FILLED FOX BLOCK INSULATING CONCRETE FORM
WITH 2 LAYERS 5/8 INCH GYPSUM BOARD ON HAT CHANNELS AND
FIBERGLASS ONE SIDE AND 1/2 INCH GYPSUM BOARD ON THE OTHER**

RENDERED TO

**AIRLITE PLASTICS CO.
6110 ABBOTT DRIVE
OMAHA, NE 68108**

INTRODUCTION

This report gives the results of a Sound Transmission Loss test and the determination of the Sound Transmission Class on an 8 inch thick concrete filled Fox Block Insulating Concrete Form. The test sample was constructed and poured by the client at Intertek on October 22, 2010. The test was witnessed by Robert Sculthorpe.

AUTHORIZATION

Signed Intertek Quote No. 500356309.

TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM E90-09, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements", and classified in accordance with the American Society for Testing and Materials designation ASTM E413-10, "Classification for Rating Sound Insulation" and ASTM Standard E1332-10a entitled, "Standard Classification for Rating Outdoor-Indoor Sound Attenuation".

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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 (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 an 8 inch thick concrete filled Fox Block Insulating Concrete Form. The walls of the forms were 2 ½ inch thick expanded polystyrene panels. Plastic webbing bridged and supported the forms with #4 re-bar in the center of the wall, spaced 16 inches on center both vertically and horizontally. The 3000 psi concrete mix information is displayed in the table below.

Test – The wall was tested with two layers of 5/8 inch thick Type X gypsum board installed on ¾ inch high hat channels with fiberglass between the channels on the source side and ½ inch thick gypsum board direct attached on the receiving room side.

MIX ID NUMBER: ICF3001FP					
	Weights / Cubic Yard	Saturated Dry Surface			Saturated Dry Surface
LeFarge Cement Co. Type I/II	430	2.19	Air	6% (+/- 1%)	1.62
Polkville Sand	1590	9.69	MB-VR (BASF Master Builders)	5 oz.	
Polkville Crushed Gravel, 3/4 Inch, Size #67	1520	9.02	Polyheed 997 (Master Builders)	6 oz.	
Type F Flyash	80	0.56	Water/Slump Ratio lbs/lb		0.52
Water (32 gallons)	267	4.28	Slump, In.		5" - 6"
			Concrete Unit Weight, PCF		140.9

RESULTS OF TESTS

**8 INCH THICK INSULATED CONCRETE FORM
WITH 2 LAYERS 5/8 INCH GYPSUM BOARD ON HAT CHANNELS AND
FIBERGLASS ONE SIDE AND 1/2 INCH GYPSUM BOARD ON THE OTHER**

1/3 Octave Band Center Frequency <u>Hz</u>	<u>Sound Transmission Loss in dB</u>
80	29
100	33
125	37
160	37
200	40
250	42
315	45
400	49
500	53
630	57
800	60
1000	63
1250	64
1600	66
2000	67
2500	68
3150	69
4000	70
5000	71
Sound Transmission Class	55
Outdoor-Indoor Transmission Class	43

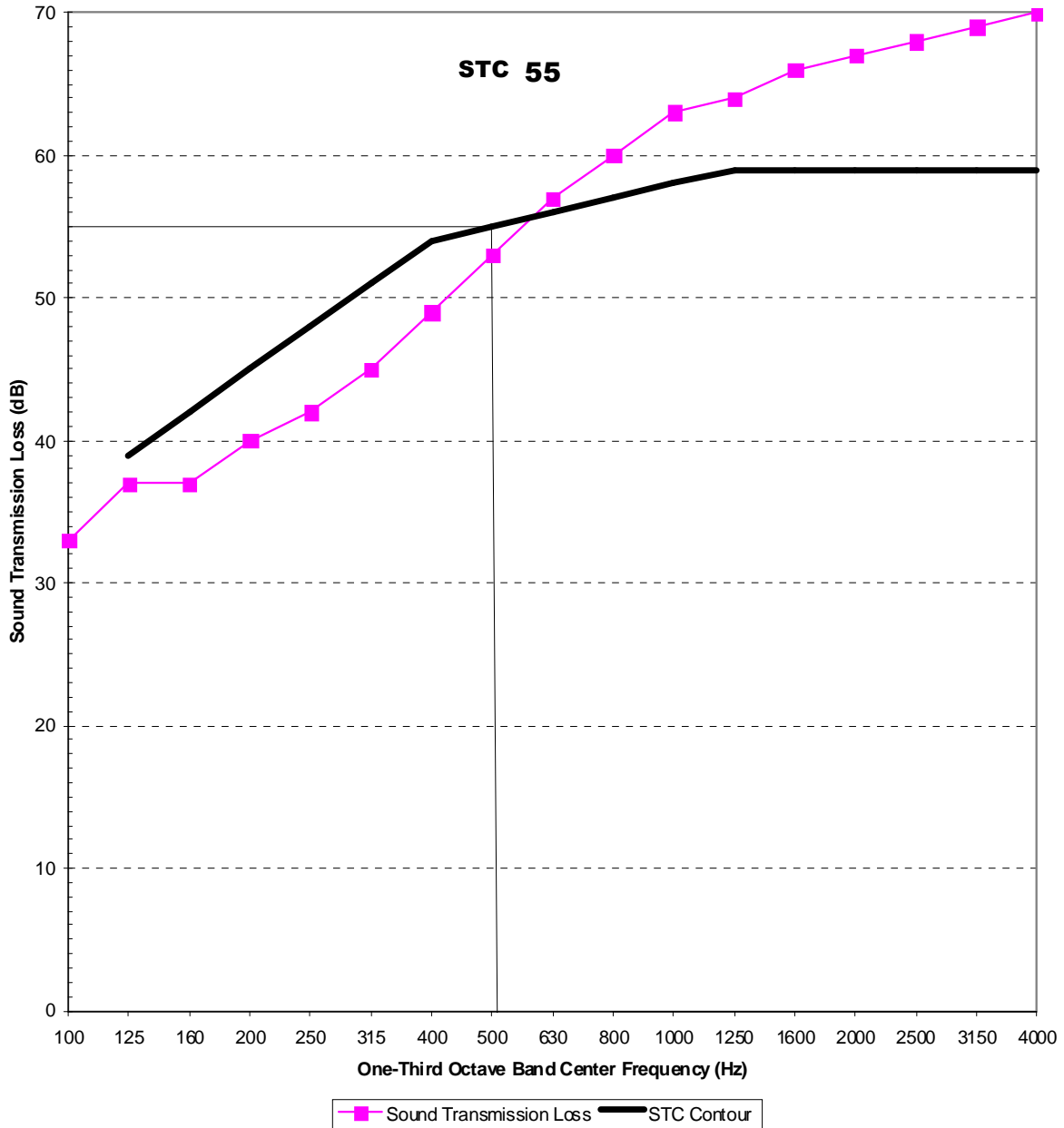
PRECISION

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

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

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Sound Transmission Loss



AIRLITE PLASTICS CO.

REMARKS

1. Curing Period: approximately 1.5 years
2. Ambient Temperature: 71°F
3. Relative Humidity: 53%

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.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test: May 7, 2012

Report Approved by:



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Report Reviewed By:



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