



REPORT

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

Order No. 100236508

Date: December 13, 2010

REPORT NO. 100236508CRT-001b

**SOUND TRANSMISSION LOSS TEST
AND CLASSIFICATION OF A 6 INCH THICK
CONCRETE FILLED FOX BLOCK INSULATING
CONCRETE FORM WITH 1/2 INCH GYPSUM BOARD DIRECT
ATTACHED TO BOTH SIDES**

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 a 6 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. 500240010.

TEST METHOD

The specimen was tested in accordance with the American Society for Testing and Materials designation ASTM E90-2004, "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 E413-2004, "Classification for Rating Sound Insulation" and ASTM Standard E1332-90 (Re-Approved 2003) entitled, "Standard Classification for Determination of Outdoor-Indoor Transmission Class".

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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 a 6 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 had ½ inch gypsum board direct attached on both the source and receiving room sides.

MIX ID NUMBER: ICF3001FP					
	Weights / Cubic Yard	Saturated Dry Surface			Saturated Dry Surface
LeFarge Cement Co. Type III	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

6 INCH THICK INSULATED CONCRETE FORM WITH 1/2 INCH GYPSUM BOARD ON BOTH SIDES

1/3 Octave Band Center Frequency <u>Hz</u>	<u>Sound Transmission Loss in dB</u>
80	30
100	32
125	37
160	38
200	38
250	42
315	39
400	42
500	43
630	46
800	50
1000	57
1250	63
1600	66
2000	66
2500	65
3150	66
4000	69
5000	71
Sound Transmission Class	50
Outdoor-Indoor Transmission Class	42

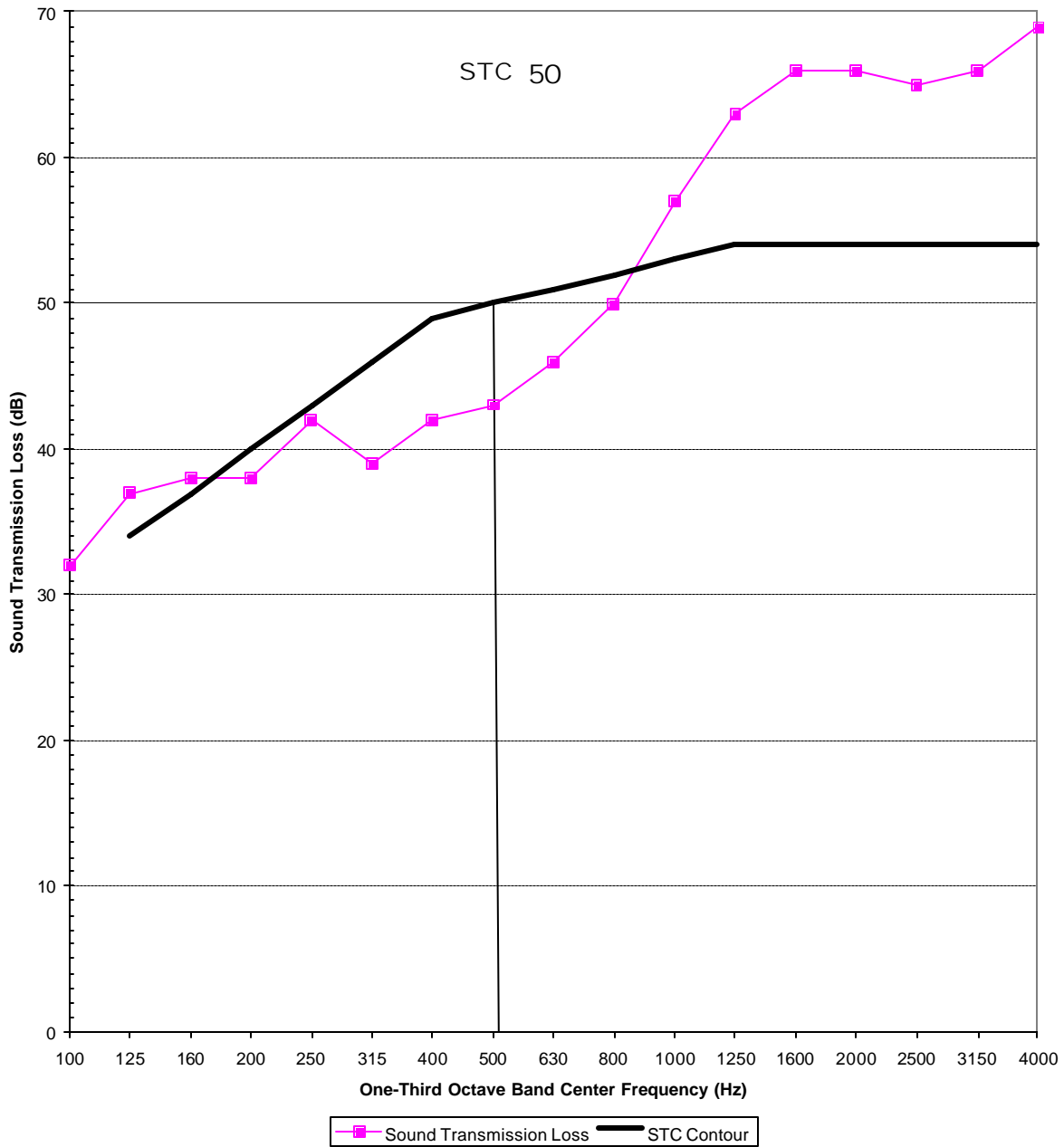
PRECISION

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

<u>Range of One-Third Octave Bands</u>	<u>Transmission Loss 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

**6 INCH THICK INSULATED CONCRETE FORM
WITH 1/2 INCH GYPSUM BOARD ON BOTH SIDES**

Sound Transmission Loss



AIRLITE PLASTICS CO.

REMARKS

1. Curing Period: 49 days
2. Ambient Temperature: 69°F
3. Relative Humidity: 28%

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.

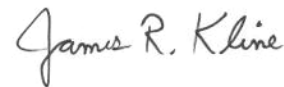
Date of Test: December 9, 2010

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