

TEST REPORT

For

Arcoplast, Inc.
1873 Williamstown Drive
St. Peters, Missouri 63376
Ghislain Beauregard / 636-978-7781

Sound Transmission Loss Test

ASTM E 90 – 09 / E 413 – 10 / E 1332-10a

On

Wall Partition

Side 1: A Single Layer 1/2 Inch (12 mm) Arcoplast[®] Engineered Polymer Panels
Side 2: A Single Layer 1/2 Inch (12 mm) Arcoplast[®] Engineered Polymer Panels
On 3-5/8 Inch Metal Studs Spaced 16 Inches o.c., with 3 inches of Mineral Wood Insulation

Report Number: NGC 2017097

Assignment Number: G-1400

Test Date: 07/06/2017

Report Approval Date: 07/18/2017

Submitted by: _____

Anthony J. Rivers
Test Technician

Reviewed by: _____

Robert J. Menchetti
Director

The results reported above apply to specific samples submitted for measurement. No responsibility is assumed for performance of any other specimen. The laboratory's accreditation or any of its test reports in no way constitute or imply product certification, approval, or endorsement by NVLAP, NIST or any agency of the Federal Government. This report may not be reproduced except in full, without written approval of the laboratory.



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Revision Summary:

Date	SUMMARY
Approval Date: 07/18/2017	Original issue date: 07/18/2017 Original NGCTS report #: NGC 2017097

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Report Number:	NGC 2017097	Page 3 of 5
Test Method:	This test method conforms explicitly with the American Society for Testing and Materials Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements - Designation: E 90 - 09 / E 413 - 10 and explicitly to the American Society for Testing and Materials Standard Test Method for Standard Classification for Rating Outdoor-Indoor Sound Attenuation - Designation E 1332-10a.	
Specimen Description:	The test specimen was a partition assembly constructed within the 3657.6 mm x 2743.2 mm (12 ft. x 9 ft.) test opening. The test specimen was described by the client as, 3-5/8 in. Metal studs, spaced 406.4 mm (16 in.) on center, a layer of Acroplast [®] 1/2 in. (12 mm) Engineered Polymer Panels on Side 1, and a layer of Acroplast [®] 1/2 in. (12 mm) Engineered Polymer Panels on Side 2, with 3 inches of Mineral Wool insulation in the stud cavity. Standard direction of sound from Source Room (Room 1) to Receiving Room (Room 2). The wall system was constructed in the test opening and was observed to consist of. All measured weights and dimensions are averaged: From Room 1 to Room 2.	
	<ul style="list-style-type: none">- A layer of 12.70 mm (1/2 in.) Acroplast[®] Engineered Polymer Panels. Observed thickness was 12.70 mm (0.50 in.) and observed sample weight was 22.36 kg/m² (4.58 PSF). The three 1219.2mm by 2743.2mm (4 ft. by 9 ft) panels were mounted vertically to the stud framework using Arcoplast[®] extruded aluminum splines which accepted the panel's slot existing at the panel's joint edges. Splines were screw attached to doubled up studs using a 15.9mm (0.625 in.) Pancake screws. In addition, 12 inch strips of double-sided 1 in. wide 3M 4959 tape were placed at the 1/3 points of each receiving side stud and the panels adhered to them. Spline weight was 0.10 kg/m² (0.02 PSF), mounted vertically and screwed- 92.1 mm (3-5/8 in.) Metal track on the top and bottom. A bead of acoustical caulk was placed between the plates and the test opening. The measured thickness was 0.51 mm (0.020 in.). The measured weight of the top and bottom plate: 0.50 kg/m² (0.10 PSF).- 92.1 mm (3-5/8 in.) Metal studs. The studs were mounted vertically 406.4 mm (16 in.) o.c., and doubled up at the vertical panel joints. The measured thickness was 0.51 mm (0.020 in.). The measured weight of the studs: 1.97 kg/m² (0.40 PSF).- 1 Layer of 76.2mm (3 inch) Mineral Wool Batts was friction fit into the stud cavities. The sample weight was 2.64 kg/m² (0.54 PSF).- A layer of 12.70 mm (1/2 in.) Acroplast[®] Engineered Polymer Panels. Observed thickness was 12.70 mm (0.50 in.) and observed sample weight was 22.36 kg/m² (4.58 PSF). The three 1219.2mm by 2743.2mm (4 ft. by 9 ft) panels were mounted vertically to the stud framework using Arcoplast[®] extruded aluminum splines which accepted the panel's slot existing at the panel's joint edges. Splines were screw attached to doubled up studs using a 15.9mm (0.625 in.) Pancake screws. In addition, 12 inch strips of double-sided 1 in. wide 3M 4959 tape were placed at the 1/3 points of each receiving side stud and the panels adhered to them. Spline weight was 0.10 kg/m² (0.02 PSF), mounted vertically and screwed	
	Total weight of the wall system was: 49.99 kg/m ² (10.24 PSF) The perimeter of the test assembly was sealed with acoustical caulk and exposed wallboard joints were taped.	
Specimen size:	3657.6 mm x 2743.2 mm (12 ft. x 9 ft.)	
Conditioning:	Panels were tested as received. Specimens were conditioned at 70° F, 55 % R.H. for 24 hrs. minimum	
Test Results:	The results of the tests are given on pages 4 and 5 of the report.	

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Sound Transmission Loss Test Data							
Test: ASTM E 90 - 09 / ASTM E 413 - 10 / ASTM E 1332 - 10a							
Test Report: NGC 2017097						Date: 7/6/2017	
Specimen Size [m ²]: 10.1						Page 4 of 5	
Source room				Receiving room			
Volume [m ³]: 90.44				Volume [m ³]: 98.61			
Rm Temp [°C]: 20				Rm Temp [°C]: 20			
Humidity [%]: 70				Humidity [%]: 70			
Sound Transmission Class STC [dB]:				59			
Sum of Unfavorable Deviations [dB]: 22							
Max. Unfavorable Deviation [dB]: 7				at 2000 Hz			
Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
100	37	105.6	72.1	16.8	3.5		0.0
125	42	104.7	66.7	14.8	4.0	1	1.1
160	44	103.9	64.7	11.8	4.8	2	1.2
200	48	103.1	60.3	11.4	5.2	1	0.8
250	50	102.1	57.3	12.0	5.2	2	0.7
315	56	101.1	50.4	11.2	5.3		0.5
400	60	101.0	45.8	11.7	4.8		0.4
500	63	102.9	45.6	11.1	5.7		0.3
630	61	103.6	47.4	11.2	4.8		0.2
800	61	104.0	48.2	12.0	5.2		0.1
1000	60	102.6	46.9	13.2	4.3	2	0.1
1250	61	100.8	44.4	14.6	4.6	2	0.1
1600	61	98.1	40.3	17.3	3.2	2	0.0
2000	56	97.0	43.3	21.2	2.3	7	0.0
2500	60	97.4	39.4	24.0	2.0	3	0.0
3150	63	96.9	35.8	25.9	1.9		0.0
4000	65	95.6	31.4	29.2	0.8		0.0
5000	67	93.6	27.4	32.7	0.8		0.0

STL = Sound Transmission Loss, dB
 L1 = Source Room Level, dB
 L2 = Receiving Room Level, dB
 d = Decay Time, dB/second
 Δ STL = Uncertainty for 95% Confidence Level

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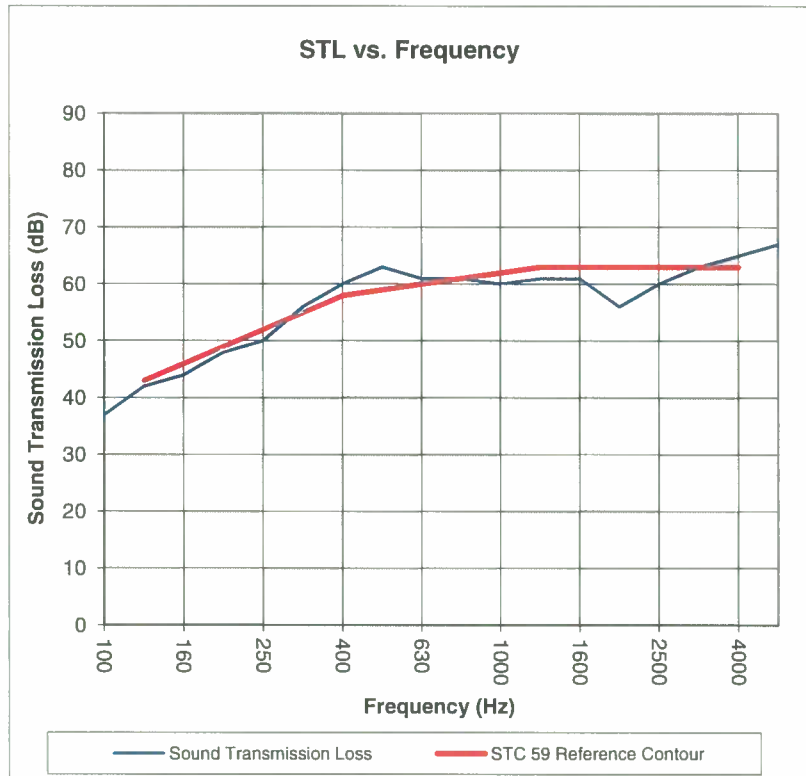
Sound Transmission Loss Test Data

Per: ASTM E 90 - 09 / ASTM E 413 - 10 / ASTM E 1332 - 10a

Test Report: NGC 2017097
 Test Date: 7/6/2017
 Specimen Size [m²]: 10.1

Sound Transmission Class STC = 59 dB

Frequency [Hz]	STL [dB]	ΔSTL
100	37	1.2
125	42	0.8
160	44	0.7
200	48	0.5
250	50	0.4
315	56	0.3
400	60	0.2
500	63	0.1
630	61	0.1
800	61	0.1
1000	60	0.0
1250	61	0.0
1600	61	0.0
2000	56	0.0
2500	60	0.0
3150	63	0.0
4000	65	0.0
5000	67	0.0



* Due to high insulating value of specimen, background levels limit results at these frequencies.

STL = Sound Transmission Loss, dB
 Δ STL = Uncertainty for 95% Confidence Level

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