NGC Testing Services

Acoustical Testing Laboratory

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TEST REPORT

for

ICYNENE INC.
6747 Campobello Road
Mississauga, Ontario
Canada L5N 2L7
Andrew Cha / 905-363-4040

Sound Transmission Loss Test
ASTM E 90 - 02
On

½" Double layer Gypsum Wall Assembly with Metal Studs and Icynene Foam Insulation (Standard Sound Direction)

Report Number: NGC 2004012

Assignment Number: G-194

Specimen Receipt Date: NA

Test Date: 10/15/2004

Report Date: 11/03/2004

Submitted by: _____
Craig G. Cooper
Test Engineer

Reviewed by: _____
Robert J. Menchetti
Director

Report Number: NGC 2004012

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 - 02.

Specimen Description: The test specimen was a partition assembly constructed in the 14' W by 9' H test opening with 3-5/8" 25 ga. metal studs, Icynene foam insulation in cavities, 2 layers of ½"gypsum wallboard both sides, designated as: ½" Gypsum Wall Assembly, metal studs and Icynene Foam Insulation.

Standard direction of sound from Source Room (Room 1) to Receiving Room (Room 2).

The wall system was constructed in the test opening and consisted of:
From Room 1 to Room 2.
- two layers of ½" Type C gypsum wallboard. (4.4 PSF)
  mounted vertically with staggered seams between layers and attached to studs 24" o.c. with 1" drywall screws inside layer and 12" o.c. with 1-1/2" drywall screws on the outside layer.
- 3-5/8" 25 ga. metal studs 24" o.c. (0.19 PSF)
- 3-5/8" metal channel top and bottom. (0.08 PSF)
- one layer of 2" nominal Icynene spray in place foam insulation. (0.14 PSF)
- two layers of ½" Type C gypsum wallboard. (4.4 PSF)
  mounted vertically with staggered seams between layers and attached to studs 24" o.c. with 1" drywall screws inside layer and 12" o.c. with 1-1/2" drywall screws on the outside layer.

Total weight of the wall system was 1160 lbs. (9.28 PSF average)

The perimeter of the wall system was sealed with acoustical caulk.

Test sample was applied under direction of client and tested as received.

Cure time for foam insulation was 24 hours minimum.

Test Results: The results of the tests are given on pages 3 and 4.

Sound Transmission Loss Test Data

Per: ASTM E 90 - 02 / ASTM E 413 - 87

No. of test report: NGC2004012
Test Date: 10/15/2004
Size: 11.6 m²
Temperature [°C]: 19.7

Sound Transmission Class STC = 48 dB
Sum of unfavorable deviations: 31.0 dB
Max. unfavorable deviation: 6.0 dB at 125 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	T [s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
100	18	100.7	85.1	2.65	2.9	-.-	0.346
125	26	101.3	79.1	3.12	3.6	6.0	0.640
160	31	97.5	71.6	4.13	4.8	4.0	0.332
200	36	99.4	69.4	4.89	5.5	2.0	0.316
250	35	99.9	70.2	5.10	5.7	6.0	0.200
315	41	101.0	66.0	5.27	5.8	3.0	0.224
400	45	102.6	62.6	4.86	5.5	2.0	0.141
500	46	101.1	60.1	4.71	5.3	2.0	0.224
630	49	100.3	56.8	4.65	5.3	-.-	0.100
800	50	100.5	55.1	4.31	5.0	-.-	0.141
1000	50	99.3	53.5	4.05	4.7	1.0	0.100
1250	52	98.1	50.3	3.69	4.3	-.-	0.100
1600	53	97.4	48.3	3.26	3.8	-.-	0.100
2000	52	96.8	47.4	2.72	3.0	-.-	0.100
2500	48	98.1	52.9	2.42	2.5	4.0	0.100
3150	51	98.6	49.5	2.29	2.2	1.0	0.141
4000	56	98.8	45.1	2.11	1.9	-.-	0.173
5000	58	97.5	40.4	1.89	1.4	-.-	0.200

STL = Sound Transmission Loss, dB
L1 = Source Room Level, dB
L2 = Receiving Room Level, dB
T = Reverberation Time, seconds
Δ STL = Uncertainty for 95% Confidence Level

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125	26	0.640
160	31	0.332
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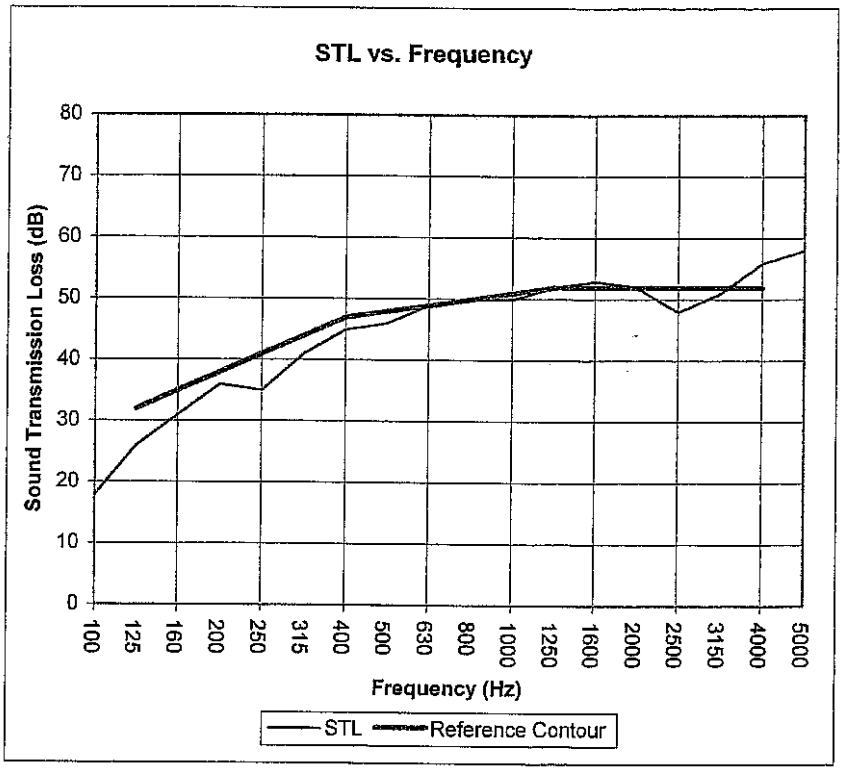
250	35	0.200
315	41	0.224
400	45	0.141
500	46	0.224
630	49	0.100
800	50	0.141
1000	50	0.100
1250	52	0.100
1600	53	0.100
2000	52	0.100
2500	48	0.100
3150	51	0.141
4000	56	0.173
5000	58	0.200



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