



# Acoustical Testing Laboratory



Accredited by the National Voluntary  
Laboratory Accreditation Program  
for the specific scope of accreditation  
under Lab Code 200291

## TEST REPORT

For

Everkem Diversified Products, Incorporated  
5180 Indiana Avenue  
Winston - Salem, NC 27106  
Jason Lynch / 800-638-3160

### Sound Transmission Loss Test

ASTM E 90 - 09 / E 413 - 10

On

**Vertically Mounted -**

**Double Layer of 5/8 Inch Type X Gypsum Wallboard - Side 1**

**Double Layer of 5/8 Inch Type X Gypsum Wallboard - Side 2**

**On 3-5/8 Inch (24 Inch o.c.) Metal Studs and Fiber Glass Batt Insulation**

**SoundSeal 90 Acoustical Sound Sealant on Top and Bottom Track and Wall Perimeter**

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Report Number: NGC 2012002

Assignment Number: G-758

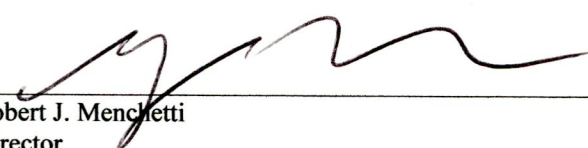
Test Date: 01/04/2012

Report Date: 03/28/2012

Submitted by: \_\_\_\_\_

  
Andrew E. Heuer  
Test and Quality Engineer

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.

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**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.

**Specimen Description:** The test specimen was a partition assembly constructed within the 12 ft. Wide by 9 ft. High (3657.6mm W by 2743.2mm H) test opening. The test specimen was described by client as, 3-5/8 inch metal stud framing 24 inches on center. Double Layer of horizontally mounted – 5/8 inch Type X gypsum board – on both sides. Fiberglass batt insulation was friction fit into the cavities formed by the framing members. Top and bottom tracks caulked. Wall perimeter was caulked.

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):

- 2 layers of 15.9mm (5/8 in.) Type X gypsum wallboard. Sample weight was 22.5 kg/m<sup>2</sup> (4.6 PSF) mounted horizontally and attached directly to the steel framing members. Base layer screw spacing was 304.8mm (12 in.) o.c., using 25.4mm (1.0 in.) fine thread bugle head screws. The face layer screw spacing was 304.8mm (12 in.) o.c., using 41.3mm (1-5/8 in.) fine thread bugle head screws.
- 92.1mm (3-5/8 in.) wide by 31.8mm (1-1/4 in.) deep 25 ga., metal studs mounted vertically 609.6mm (24 in.) o.c. between the top and bottom tracks. Sample weight was 1.12 kg/m<sup>2</sup> (0.23 PSF).
- 92.1mm (3-5/8 in.) 25 ga. metal track top and bottom. Sample weight was 0.39 kg/m<sup>2</sup> (0.08 PSF). A bead of SoundSeal 90 Acoustical Sound Sealant caulk was placed between metal track and test frame opening.
- 1 layer of 88.9mm (3-1/2 in.) un-faced fiberglass insulation was friction fit into stud cavities on each side of partition. The sample weight was found to be 0.78 kg/m<sup>2</sup> (0.16 PSF).
- 2 layers of 15.9mm (5/8 in.) Type X gypsum wallboard. Sample weight was 22.5 kg/m<sup>2</sup> (4.6 PSF) mounted horizontally and attached directly to the steel framing members. Base layer screw spacing was 304.8mm (12 in.) o.c., using 25.4mm (1.0 in.) fine thread bugle head screws. The face layer screw spacing was 304.8mm (12 in.) o.c., using 41.3mm (1-5/8 in.) fine thread bugle head screws.

Total weight of the wall system was 47.2 kg/m<sup>2</sup> (9.67 PSF)

The perimeter of the wall system was sealed with SoundSeal 90 Acoustical Sound Sealant caulk. The exposed board joints were taped.

**Specimen size:** 3657.6mm x 2743.2mm (12 ft x 9 ft.)

**Conditioning:** Boards were tested as received.

**Test Results:** The results of the tests are given on pages 3 and 4.  
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## Sound Transmission Loss Test Data

Test: ASTM E 90 - 09 / ASTM E 413 - 10

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Test Report: NGC2012002

Date: 1/4/2012

Specimen Size [m<sup>2</sup>]: 10.1

### Source room

Volume [m<sup>3</sup>]: 91.15

Rm Temp [°C]: 16.5

Humidity [%]: 57

### Receiving room

Volume [m<sup>3</sup>]: 98.61

Rm Temp [°C]: 17

Humidity [%]: 57

**Sound Transmission Class STC [dB]: 52**

Sum of Unfavorable Deviations [dB]: 15

Max. Unfavorable Deviation [dB]: 8 at 2500 Hz

Frequency [Hz]	STL [dB]	L1 [dB]	L2 [dB]	d [dB/s]	Corr. [dB]	u.Dev. [dB]	ΔSTL
100	34	107.8	77.4	17.7	3.6		0.0
125	39	105.9	69.6	15.7	2.7		1.4
160	42	104.3	68.0	11.0	5.7		3.0
200	42	104.4	67.1	11.6	4.7		1.2
250	46	102.4	61.4	12.1	5.0		1.0
315	49	103.4	59.0	11.8	4.6		0.5
400	54	101.9	52.7	12.5	4.8		0.2
500	58	104.8	51.7	11.6	4.9		0.3
630	59	105.0	51.4	11.5	5.4		0.1
800	62	103.1	46.5	12.2	5.4		0.1
1000	63	104.2	45.8	13.4	4.6		0.1
1250	63	101.9	42.8	15.0	3.9		0.0
1600	61	98.6	40.9	17.8	3.3		0.0
2000	51	98.5	49.7	21.3	2.2	5	0.0
2500	48	98.4	51.7	24.6	1.3	8	0.0
3150	54	97.1	45.0	26.7	1.9	2	0.0
4000	59	96.0	38.2	31.1	1.2		0.0
5000	62	95.2	33.0	36.7	-0.2		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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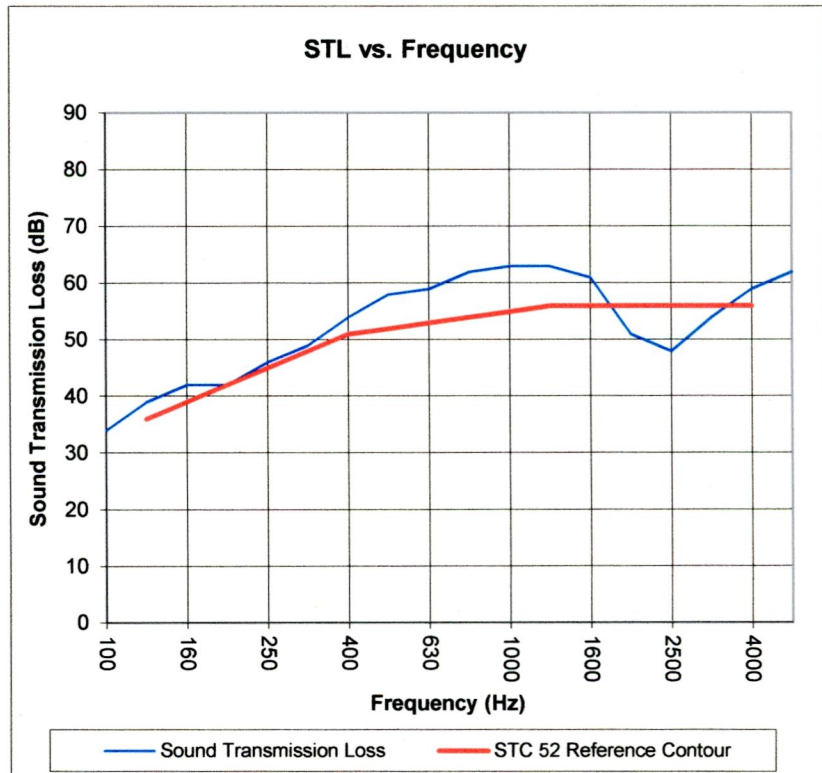
## Sound Transmission Loss Test Data

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

Test Report: NGC2012002  
 Test Date: 1/4/2012  
 Specimen Size [m<sup>2</sup>]: 10.1

**Sound Transmission Class STC = 52 dB**

Frequency [Hz]	STL [dB]	ΔSTL
100	34	3.0
125	39	1.2
160	42	1.0
200	42	0.5
250	46	0.2
315	49	0.3
400	54	0.1
500	58	0.1
630	59	0.1
800	62	0.0
1000	63	0.0
1250	63	0.0
1600	61	0.0
2000	51	0.0
2500	48	0.0
3150	54	0.0
4000	59	0.0
5000	62	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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