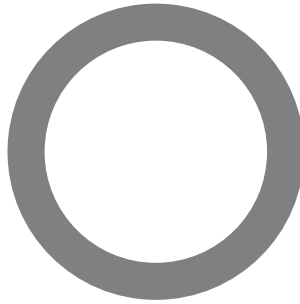


# ASTM E 90: Laboratory Measurement of Airborne Sound Transmission of Building Partitions and Elements

**Orfield** Laboratories Inc



**Design Research Testing**

Acoustics / Vibration / Vision / Lighting / Architecture / Market Research

**TEST**

Client: **Supress Products, L.L.C**  
Report Date: **November 22, 2006**  
Test Date: **September 27, 2006**  
Test Number: **OL 06-0925**

**ACCREDITATION**



For the scope of accreditation under NVLAP code 200248-0

**RESULT SUMMARY**

**STC=52**

**CLIENT ADDRESS**

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Signatures are required on this document for an official laboratory test report.  
Copies of this document without signatures are for reference only.

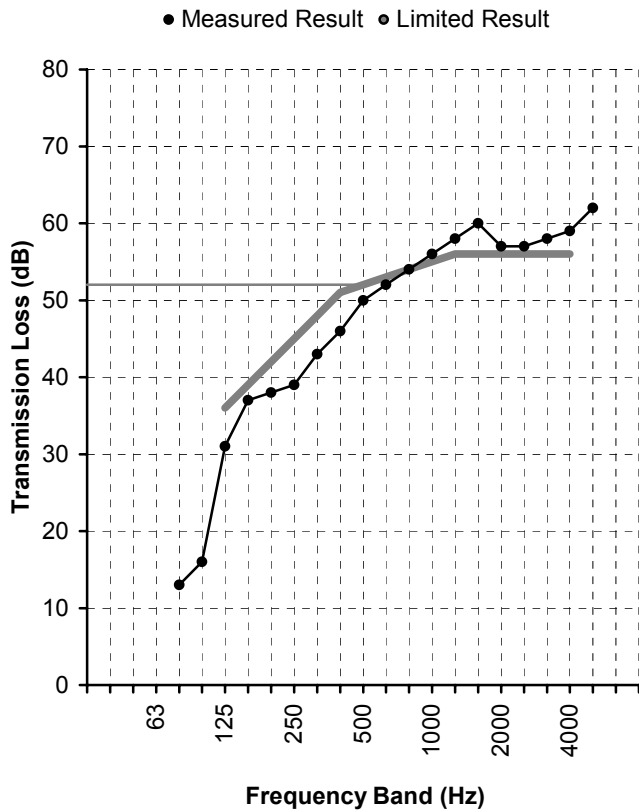




**Client** Supress Products, L.L.C  
**Project No.** OL 06-0925  
**Specimen** Interior Wall Assembly

**Method** ASTM Standard E90  
**Test Date** September 26, 2006

**Single Number Rating**  
STC=52



Freq. (Hz)	TL (dB)	Def. (dB)
80	13	
100	16	
125	31	5
160	37	2
200	38	4
250	39	6
315	43	5
400	46	5
500	50	2
630	52	1
800	54	-
1000	56	-
1250	58	-
1600	60	-
2000	57	-
2500	57	-
3150	58	-
4000	59	-
5000	62	
<b>Total Deficiencies</b>		<b>30</b>

**Wall Assembly Description**

(listed in order from source room side to receiver room side)  
 0.625" Supress Sound Engineered Drywall; 2" Screws @ 12" O.C.  
 2x4 wood studs @ 24" O.C.  
 3.5" R13 glass fiber batt  
 0.625" gypsum drywall; 1.625" Screws @ 12" O.C.

**Notes:**

Seam treatment: 1/8" rope caulk  
 Perimeter treatment: 7/8" heavy putty





## SPECIMEN DESCRIPTION

The specimen under test was one interior wall assembly. The elements in the assembly are described below the results table and chart. Additional information regarding the specimen may be found in the appendices.

Test results pertain to this specimen only.

## INSTALLATION AND DISPOSITION

Independent contractors fabricated the wall assembly in the specimen opening. Qualified representatives of Orfield Laboratories observed the installation and visually inspected the specimen prior to testing.

## TEST METHODS

The methods followed these published standards:

ASTM E90\*: *Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements*

ASTM E413: *Classification for Rating Sound Insulation*

*\* Orfield Laboratories, Inc. has been accredited by the U.S. Department of Commerce, National Institute of Standards and Technology (NIST) under their National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. This report shall not be used to claim product endorsement by NVLAP or any agency of the U.S. Government.*

## CONFIDENTIALITY

The client has full control over this information and any release of information will be only to the client. The specific testing results are deemed to be confidential exclusively for the client's use. Reproduction of this report, except in full, is prohibited.

**APPENDIX A: MEASUREMENT SETUP****ENVIRONMENT**

Temperature	70°F [21.1°C]
Relative Humidity	55%
Source Room Volume	3284.1 ft <sup>3</sup> [93.0 m <sup>3</sup> ]
Receiving Room Volume	8281.2 ft <sup>3</sup> [234.5 m <sup>3</sup> ]
Specimen Area	64.5 ft <sup>2</sup> [5.99 m <sup>2</sup> ]

**INSTRUMENTATION**

Description	Brand	Model	S/N
Microphone	Brüel & Kjær	Type 4134	1478843
Preamplifier	Brüel & Kjær	Type 2639	1202479
Microphone	Brüel & Kjær	Type 4134	558007
Preamplifier	Brüel & Kjær	Type 2639	1312237
Analyzer	Brüel & Kjær	Type 2133	1389369



**APPENDIX B: CALCULATION RESULTS**

Freq. Band (Hz)	Specimen T.L. (dB)	95% Conf. (dB)	STC Defic. (dB)	<i>R<sub>w</sub></i> Defic. (dB)
25				
31.5	<b>21.0</b>			
40	<b>16.2</b>			
50	<b>17.9</b>			
63	<b>13.8</b>			
80	<b>12.9</b>	±1.63		
100	<b>15.5</b>	±1.15		
125	<b>31.0</b>	±0.95	5	5.0
160	<b>36.8</b>	±1.27	2	2.2
200	<b>37.9</b>	±1.24	4	4.1
250	<b>39.2</b>	±0.65	6	5.8
315	<b>42.6</b>	±0.65	5	5.4
400	<b>46.3</b>	±0.62	5	4.7
500	<b>50.3</b>	±0.40	2	1.7
630	<b>51.9</b>	±0.50	1	1.1
800	<b>53.7</b>	±0.40	-	0.3
1000	<b>55.8</b>	±0.25	-	-
1250	<b>58.4</b>	±0.25	-	-
1600	<b>60.2</b>	±0.32	-	-
2000	<b>57.0</b>	±0.44	-	-
2500	<b>56.7</b>	±0.35	-	-
3150	<b>58.3</b>	±0.31	-	-
4000	<b>59.2</b>	±0.49	-	-
5000	<b>61.8</b>	±0.35	-	-
6300	<b>63.8</b>			
8000	<b>65.1</b>			
10000	<b>61.8</b>			
Total deficiencies below STC contour (dB)			<b>30</b>	
STC contour [ASTM E413]			<b>52</b>	
Average deficiencies below <i>R<sub>w</sub></i> contour (dB)				1.9
<i>R<sub>w</sub></i> contour [ISO 717/1]				<b>52</b>

Note: 95% Confidence from room qualification data. Data available upon request.  
 Extended frequency results below 80Hz and above 5000Hz for reference only.





**APPENDIX C: SPECIMEN ASSEMBLY DESCRIPTION**

The following table shows the elements in the wall assembly, with the source-room-side element first and the receiving-room-side element last.

Overall Mass = 384.0 lb [174.2 kg]  
 Overall Surface Density = 5.95 PSF [29.07 kg/m<sup>2</sup>]

Element	Mass		Surf. Dens.	
	lb	[kg]	PSF	[kg/m <sup>2</sup> ]
0.625" Supress Sound Engineered Drywall; 2" Screws @ 12" O.C.	164.0	[74.4]	2.54	[12.41]
2x4 wood studs @ 24" O.C.	63.0	[28.6]	0.98	[4.77]
3.5" R13 glass fiber batt	16.0	[7.3]	0.25	[1.21]
0.625" gypsum drywall; 1.625" Screws @ 12" O.C.	141.0	[64.0]	2.19	[10.67]

The Supress Sound Engineered Drywall was manufactured by the client and delivered to the laboratory. Materials were installed according to manufacturers' instructions. The seam was sealed with 1/8" rope caulk. The outside perimeter of the specimen was sealed with 7/8" wide strips of Mortite brand putty tape on the source side and the receiver side of the partition.