Airborne Sound Transmission Loss Measurements Performed on One Wall Assembly for Acoustiblok Inc.

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Client: Acoustiblok

Specimen: Wall assembly with Acoustiblok 16

Specimen ID: B3431-3W

Construction Dates: August 2-8th, 2005

Test Specimen:

The wall had two rows of steel studs; on each exterior face was a layer of Acoustiblok 16 covered with a layer of gypsum board. The 38 x 89 mm steel studs were spaced at 610 mm on center with an air space of 64 mm between the two rows of studs. The 152 mm thick, R21.5 glass fibre batts, were installed in the cavities of the two rows of steel studs. The Acoustiblok 16 was attached vertically to the steel studs with Bostich 25 mm diameter caps and 25 mm staples spaced at 610 mm on center. The Acoustiblok 16 on each side comprised two pieces of 2.4 m long by 1.4 m wide by 2.5 mm thick and one piece 2.4 m long by 1.0 m wide by 2.5 mm thick. The joints of the Acoustiblok 16 were overlapped by 25 mm, caulked with Acoustiblok sound sealant and covered with a metal tape. The type X, 16 mm thick gypsum boards were installed horizontally with 41 mm long, type S drywall screws spaced at 610 mm on center along the edges and in the field. All the gypsum board joints were caulked with Acoustiblok sound sealant and covered with a metal tape.

Specimen Properties

Element	Actual Thickness (mm)	Surface weight (kg/m²)	Mass (kg)
Gypsum Board		10.75	95.9
Acoustiblok		4.99	44.5
Steel Studs		1.45	12.9
Glass Fibre Batts		1.59	14.2
Air		-	-
Glass Fibre Batts		1.58	14.1
Steel Studs		1.45	12.9
Acoustiblok		4.99	44.5
Gypsum Board		10.75	95.9
Total	279		334.9

Test Specimen Installation:

During the measurements, the test specimen was mounted in the IRC acoustical wall test opening which measures approximately 3.66 m x 2.44 m.

The perimeter of the specimen was sealed on both sides with caulking and then covered with a metal tape.

The area used for the calculation of the airborne sound transmission loss was 8.92 m².

The results reported above apply only to the specific sample submitted for measurement. No responsibility is assumed for performance of any other specimen.

Airborne sound transmission loss measurements were conducted in accordance with the requirements of ASTM E90-04, "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements".

Client: Acoustiblok

Specimen ID: B3431-3W

Test ID: TLA-05-038

Tested: 09-Aug-05

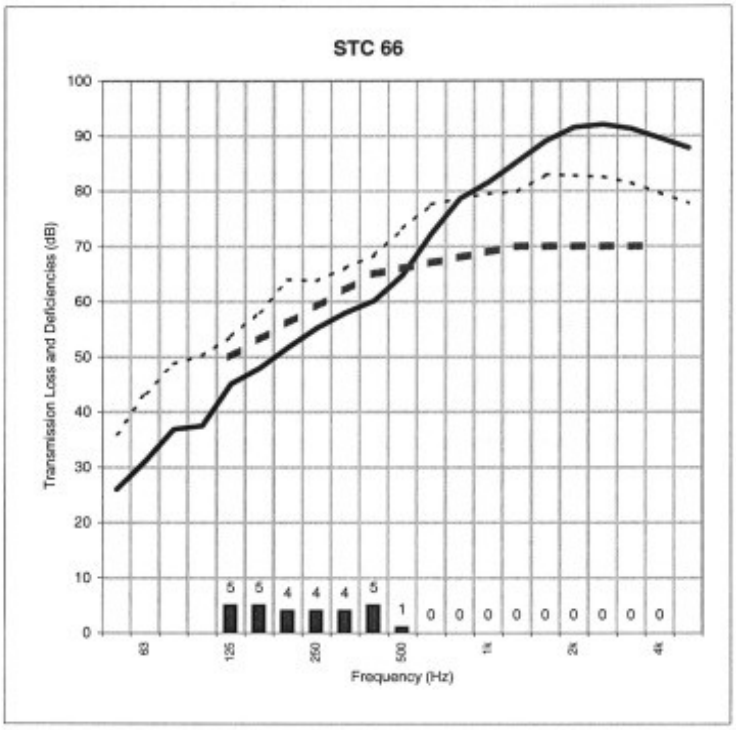
Small Room Volume: 138 m^3

Large Room Volume: 250 m^3

Measured Temperature and Relative Humidity During

	Temperature, °C		Humidtity %	
Room	Min	Max	Min	Max
Small	22.0	22.1	67.0	67.6
Large	22.6	22.7	62.1	62.3

Frequency (Hz)	Airborne Sound Transmission Loss (dB)	95% Confidence Limits
50	26 c	
63	31	
80	37	± 3.5
100	37	± 3.5
125	45	± 2.1
160	48	± 1.2
200	52	± 1.3
250	55	± 0.8
315	58	± 0.7
400	60	± 0.7
500	65	± 0.5
630	72	± 0.8
800	79	± 0.5
1000	82 c	± 0.5
1250	85 c	± 0.4
1600	89 *	± 0.3
2000	92 *	± 0.3
2500	92 *	± 0.4
3150	91 *	± 0.3
4000	90 *	± 0.4
5000	88 *	± 0.5
Sound Transmission Class (STC) = 66		



In the graph:
Solid line is the measured sound transmission loss for this specimen. Dashed line is the STC contour fitted to the measured values according to ASTM E413-04. The dotted line is 10 dB below the flanking limit established for this facility. For any frequency where measured transmission loss is above the dotted line, the reported value is potentially limited by vibration transmission via laboratory surfaces, and the true value may be higher than that measured.

Bars at bottom of graph show deficiencies. At each frequency the difference between the shifted reference contour value and the measured data is calculated. Only deficiencies, that is, where the measured data are less than the reference contour, are counted in the fitting procedure for the STC, defined in ASTM E413.

In the table:
Values marked "c" indicate that the measured background level was between 5 dB and 10 dB below the combined receiving room level and background level. The reported values have been corrected according to the procedure outlined in ASTM E90-04.

Values marked "*" indicate that the measured background level was less than 5 dB below the combined receiving room level and background level. The reported values provide an estimate of the lower limit of airborne sound transmission loss.

The results reported above apply only to the specific sample submitted for measurement. No responsibility is assumed for performance of any other specimen.