

FIELD SOUND TRANSMISSION CLASS TEST REPORT

Test Label:	AAB - Test #10
Test Date:	May 8, 1997
Test Standard:	In full accordance with ASTM E336-90 and ASTM E413-87

Description of Test Environment

Source and receiver rooms were constructed on grade, on either side of a two-storey high, 11-1/2" thick exterior wall comprising a Blue Maxx Wallsystem (described below). The floor of each room consisted of plywood sheets directly on grade. Each room consisted of 3 walls and a ceiling, located within approximately 1/4" of the demising Blue Maxx wall, but not connected to it aside from minimal lateral tie-backs. The gap between the walls of the room and the demising wall was fully caulked with non-hardening acoustical caulking. Each room contained a single insulated core metal door, tightly fitted and weatherstripped.

The source room, located on the exterior side, was constructed of 2 sheets of 5/8" Type X gypsum board fixed to nominal 2"x4" wood stud framing, with batt insulation between the studs, and exterior grade plywood to form the exterior shell. The source room was 14'10" wide by 12'0" deep by 9'0" high, and thus had a volume of 1602 ft³. The receiver room construction was nominally the same as that of the source room with the plywood cladding omitted, as this room was located interior to the building. The receiver room was 14'10" wide by 13'0" deep by 8'10" high, and thus had a volume of 1702 ft³. Room volumes were reduced slightly when different cladding treatments were applied to the demising wall, but were still well in excess of the requirement of Annex A1 for measurements down to 125 Hz. The demising partition common to both rooms was 14'10" wide by 8'10" high, which is also well in excess of the requirements of Annex A1. During these tests, both rooms were essentially empty aside from the test equipment and one person performing the measurements.

Description of Test Specimen

In this test, one layer of 1/2" gypsum board was screwed directly to the webs of the Blue Maxx wall in both the source and receiver rooms. All screw holes and joints between the gypsum board sheets were filled with latex caulking and covered with foil tape to simulate dry joint setting compound, and the edges sealed with acoustical caulking.

The Blue Maxx Wallsystem consists of 11-1/2" wide interlocking elements comprised of nominal 2-5/8" thick expanded polystyrene (EPS) outer leaves, formed around polypropylene webs on 8" centres. These webs hold the leaves nominally 6-1/4" apart and provide structural stiffness for the element, as well as supporting steel reinforcing rods. The elements are configured on site into the shape of the required wall, after which concrete is poured into the void between the EPS leaves. In this case, normal weight (150 pcf) concrete was used, and cured for more than 30 days prior to testing.

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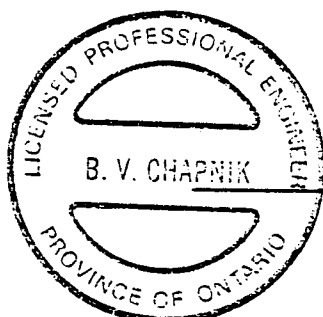
Description of Test

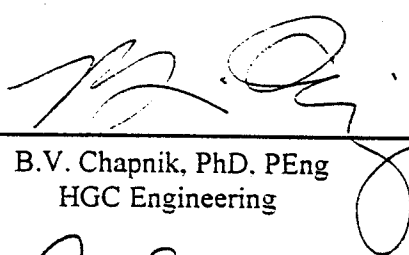
The test was performed in accordance with ASTM E336-90, "Standard Test Method for Measurement of Airborne Sound Insulation in Buildings". Six microphone positions in each room were chosen for the measurements, and receiving room absorption measured at all six locations using the Decay Rate Method. All requirements of Annex A1 are satisfied by these tests, and minimum field transmission loss (FTL) values are presented, as well as the corresponding minimum field sound transmission class (FSTC)¹, calculated using ASTM E413-87, "Classification for Rating Sound Insulation".

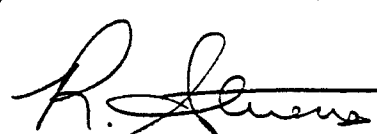
Test results, including measured receiver room reverberation times, calculated FTL and FSTC values, and a 95% measurement uncertainty range on the FTL values are summarized in the attached report. Measurement uncertainties were within the precision requirements of the standard. This partition had a sound insulation rating of FSTC-50, limited by its response in the middle frequency range.

Certification

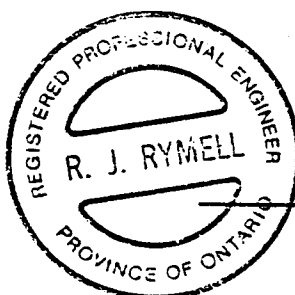
Tests and calculations
performed by:

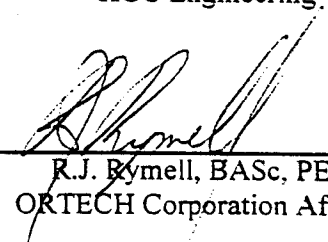



B.V. Chapnik, PhD, PEng
HGC Engineering


R.D. Stevens, BAsC, PEng
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Tests witnessed by:




R.J. Rymell, BAsC, PEng
ORTECH Corporation Affiliate

¹ The flanking transmission test described in Annex A2 was not performed as flanking was audibly not of concern; the measured FTL values are thus considered to be minimum FTL values, and the corresponding measured FSTC is thus considered a minimum value of FSTC.

Field Sound Transmission Class Test Report

AAB-Test #10

8 May 1997

Conducted by: R.D. Stevens, PEng
B.V. Chapnik, PEng

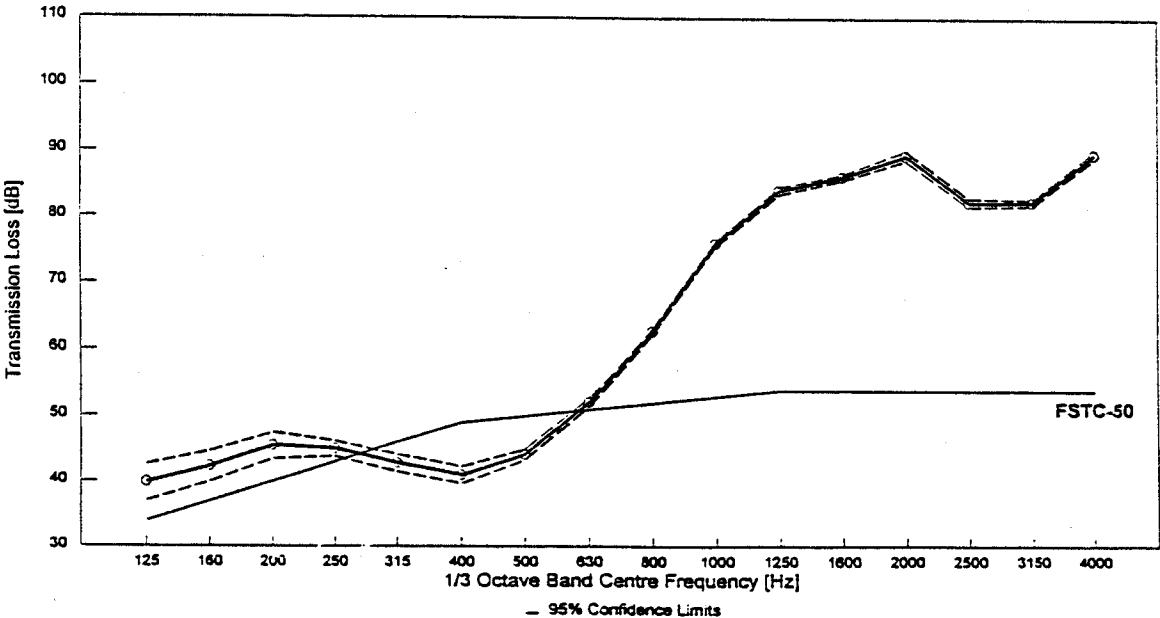
Item	1/3 Octave Band Centre Frequency [Hz]															
	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000
Average Source Room sound pressure level [dB]	107.0	108.4	108.1	108.9	111.4	108.4	108.5	111.5	110.4	109.9	109.7	110.2	109.8	108.2	106.0	105.2
Average Receiver Room sound pressure level [dB]	68.6	66.5	63.7	65.5	70.4	68.8	65.7	61.2	49.6	36.0	27.7	26.0	21.9	27.1	24.9	16.7
Noise Reduction [dB]	38.5	42.0	44.4	43.4	41.1	39.6	42.8	50.4	60.8	73.9	82.0	84.2	87.9	81.1	81.1	88.5
Receiver Room reverberation time [s]	0.9	0.7	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8
Area / Absorption correction factor [dB]	1.4	0.3	1.1	1.5	1.7	1.4	1.4	1.7	2.0	2.1	2.1	2.0	1.5	1.5	1.4	1.2
Transmission Loss [dB]	39.9	42.3	45.4	45.0	42.8	41.0	44.2	52.1	62.8	76.0	84.1	86.2	89.5	82.4	82.4	89.7
95% Confidence Interval (+/- dB)	2.8	2.3	2.0	1.1	1.3	1.3	0.8	0.7	0.5	0.4	0.6	0.5	0.7	0.7	0.5	0.6
Nearest STC Curve	34	37	40	43	46	49	50	51	52	53	54	54	54	54	54	54
Delta	3 3 6															

*** Measured Field STC 50 ***
Maximum delta 8
Sum of deltas 17

Notes:

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