

RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE
GENEVA, ILLINOIS 60134

OF
IIT RESEARCH INSTITUTE

312/232-0104
FOUNDED 1918 BY
WALLACE CLEMENT SABINE

REPORT

FOR: Overly Manufacturing Company

Sound Transmission Loss
Test RAL™-TL87-239

ON: Passthru Unit Mounted In Seven
Layer Drywall Panel Assembly

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CONDUCTED: 3 August 1987

TEST METHOD

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in explicit conformity with the American Society for Testing and Materials Designations E90-85 and E413-73 (Reapproved 1980), as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by the U.S. Department of Commerce, National Bureau of Standards under the National Voluntary Laboratory Accreditation Program (NVLAP) for this test procedure. A description of the measuring technique is available separately. The serial number of the measuring microphone was 871403.

DESCRIPTION OF THE SPECIMEN

The test specimen was designated by the manufacturer as a Passthru unit mounted in a seven layer drywall panel assembly. The overall dimensions of the Passthru unit as measured were 45.6 cm (17.94 in.) wide by 45.4 cm (17.88 in.) high and 50.8 cm (20 in.) deep. It was mounted in a drywall panel assembly that measured 1.22 m (48 in.) wide by 2.44 m (96 in.) high and 12.1 (4.75 in.) thick. The drywall panel assembly was placed directly in the laboratory's 1.22 m (4 ft) by 2.44 m (8 ft) test opening and was sealed on the periphery (both sides) with a dense mastic. The Passthru unit was mounted in a 45.7 cm (18 in.) by 45.7 cm (18 in.) opening cut out of the drywall panel assembly and centered at 61.0 cm (24 in.) on the horizontal axis and 1.07 m (42 in.) on the vertical axis. The description of the specimen was as follows: An Overly Model PTDACF Passthru unit was mounted in a prefabricated drywall panel assembly. The Passthru unit as described by the manufacturer consisted of a rectangular metal body with interior and exterior mechanical interlocking pass through doors. Only one door could be placed in an open position at a time. The doors and body of the unit were acoustically treated. At the request of the manufacturer the details of the construction were purposely withheld from this report in order that the manufacturer may control full proprietary rights regarding its product. A manufacturer's detailed drawing is maintained on file. The drywall panel assembly consisted of a metal frame assembly constructed of 25 gauge, 41.3 mm (1.625 in.) USG steel studs and runners. There were two end studs and two intermediate studs. Each of the intermediate studs was placed 30.5 cm (12 in.) from an end stud to provide a 61.0 cm (24 in.) space in the middle portion of the panel. A 45.7 cm (18 in.) by 45.7 cm (18 in.) box frame assembly was fabricated out of two nominal 61.0 cm (24 in.) long studs mounted horizontally to the two intermediate studs and spaced 45.7 cm (18 in.) apart, followed by two nominal 45.7 cm (18 in.) long studs mounted vertically to the horizontal studs. The box frame vertical studs were spaced 45.7 cm (18 in.) apart and 7.6 cm (3 in.) from the nearest intermediate stud. The metal box frame assembly was centered at 61.0 cm (24 in.) on the horizontal axis and 1.07 m (42 in.) on the vertical axis. The panel cavities were lined with 3.8 cm (1.5 in.) thick USG SAFB THERMAFIBER

THE RESULTS REPORTED ABOVE APPLY ONLY TO THE SPECIFIC SAMPLE SUBMITTED FOR MEASUREMENT. NO RESPONSIBILITY IS ASSUMED FOR PERFORMANCE OF ANY OTHER SPECIMEN.



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DESCRIPTION OF THE SPECIMEN (con't)

insulation. The receiving side of the panel had three layers of 12.7 mm (0.5 in.) thick FIRECODE "C" drywall screw attached to the steel runners and studs, and the source side had four layers of the same type of drywall attached to the opposite side of the same runners and studs. The drywall layers were staggered to cover inner seams and joints, and the exterior drywall joints were covered with joint compound. The seven layers of drywall covering the 45.7 cm (18 in.) by 45.7 cm (18 in.) box frame area were removed and the Passthru unit installed. The client's purpose for this test was to compare the sound transmission qualities of the panel before a section was cut out and the Passthru unit installed as reported in test report number RAL™-TL87-238 to the sound transmission qualities of the panel with the Passthru unit installed as reported on the following pages of this test report. The weights of the components of the panel were as follows: steel studs, 4.5 kg (10 lbs); steel runners, 1.4 kg (3 lbs); insulation, 6.4 kg (14 lbs); drywall, 188.5 kg (415.5 lbs); joint compound and hardware, 2.3 kg (5 lbs); Passthru unit, 80.1 kg (176.5 lbs). The weight of the entire specimen as measured was 283 kg (624 lbs) an average of 95.3 kg/m² (19.5 lbs/ft²). The transmission area used in the calculations was 2.97 m² (32 ft²). The source and receiving room temperatures at the time of the test were 22°C (72±2°F) and 62±2% relative humidity.

TEST RESULTS

Sound transmission loss values are tabulated at the eighteen standard frequencies. An explanation of the sound transmission class rating, a graphic presentation of the data, and additional information appear on the following pages. The precision of the TL test data are within the limits set by the ASTM Standard E90-85.

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TEST RESULTS (con't)

<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>	<u>FREQ.</u>	<u>T.L.</u>	<u>C.L.</u>	<u>DEF.</u>
100	30	0.50	0	800	59	0.27	0
125	32	0.47	4	1000	58	0.28	0
160	31	0.42	8	1250	53	0.26	3
200	35	0.40	7	1600	58	0.25	0
250	45	0.35	0	2000	61	0.18	0
315	50	0.36	0	2500	58	0.17	0
400	51	0.33	0	3150	59	0.12	0
500	56	0.32	0	4000	62	0.10	0
630	58	0.31	0	5000	64	0.08	0

STC = 52

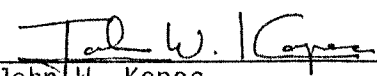
ABBREVIATION INDEX

FREQ. = FREQUENCY, HERTZ, (cps)
T.L. = TRANSMISSION LOSS, dB
C.L. = UNCERTAINTY IN dB, FOR A 95% CONFIDENCE LIMIT
DEF. = DEFICIENCIES, dB<STC CONTOUR
STC = SOUND TRANSMISSION CLASS

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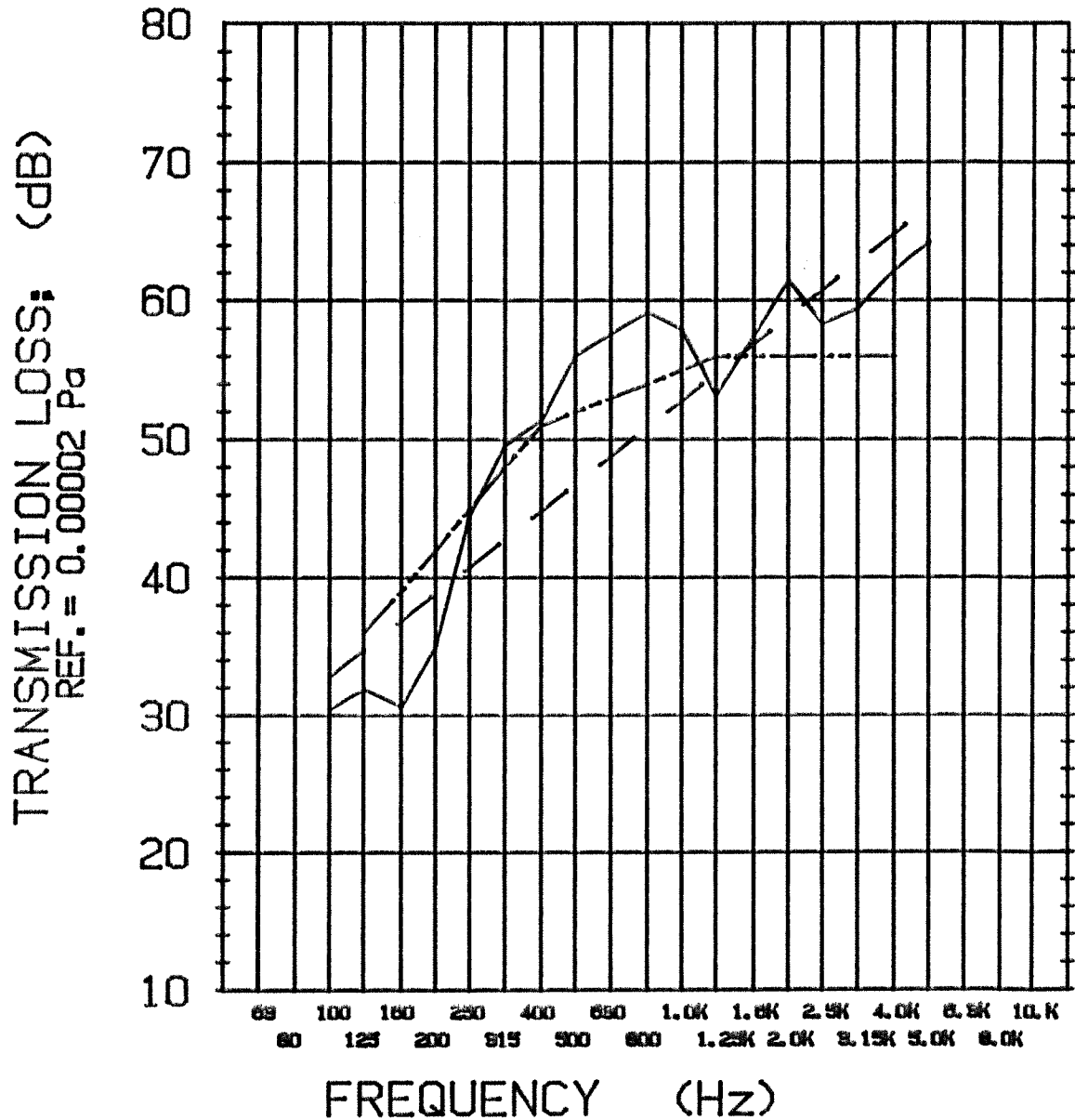
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TRANSMISSION LOSS REPORT

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- TRANSMISSION LOSS
- SOUND TRANSMISSION CLASS CONTOUR
- - - - MASS LAW CONTOUR

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