

# RIVERBANK ACOUSTICAL LABORATORIES

1512 BATAVIA AVENUE  
GENEVA, ILLINOIS 60134

OF  
IIT RESEARCH INSTITUTE

312/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE

## REPORT

FOR: Panelfold, Inc.

Sound Transmission Loss  
Test RAL-TL83-106

ON: Panelfold  
Operable Wall

Page 1 of 3

CONDUCTED: 4 May 1983

### 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 E90-81 and E413-73, as well as other pertinent standards. Riverbank Acoustical Laboratories has been accredited by 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 951371.

### DESCRIPTION OF THE SPECIMEN

The test specimen was a fully operable Panelfold Operable Wall comprised of four panels arranged in a flat configuration with interlocking vertical stiles and supported by an overhead track. The nominally 102 mm (4 in) thick panels were constructed of 12.7 mm (0.5 in) thick particleboard faces laminated to wood frames with interior sound retarding material. The clearance between the top of the panels and the soffit was closed by a flexible vinyl sweep seal installed on each side of each panel. The clearance between the bottom of the panels and the floor was closed by a mechanical seal in each panel. An expanding jamb provided final closure. The specimen was installed by the manufacturer directly into the laboratory's 2.74 m (9 ft) by 4.27 m (14 ft) wood-lined steel frame. Each panel was nominally 0.97 m (38 in) wide by 2.57 m (101 in) high including seals. Each panel weighed an average of 92 kg (202 lbs), or 36.9 kg/m<sup>2</sup> (7.6 lbs/ft<sup>2</sup>), including trolley. The entire specimen (jambs, track, panels, etc.) weighed 575 kg (1,268 lbs). The transmission area used in the calculations was 11.7 m<sup>2</sup> (126 ft<sup>2</sup>). A full internal inspection was performed on the test specimen by Riverbank personnel. A detailed itemized description is on file and has been intentionally withheld from this report in order that the manufacturer may control full proprietary rights regarding its product. The operable wall was opened and closed at least the standard prescribed amount of times, and the test was conducted with no further adjustments.

### RESULTS OF MEASUREMENTS

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



ACCREDITED BY DEPARTMENT OF COMMERCE, NATIONAL VOLUNTARY LABORATORY  
ACCREDITATION PROGRAM FOR SELECTED TEST METHODS FOR ACOUSTICS.

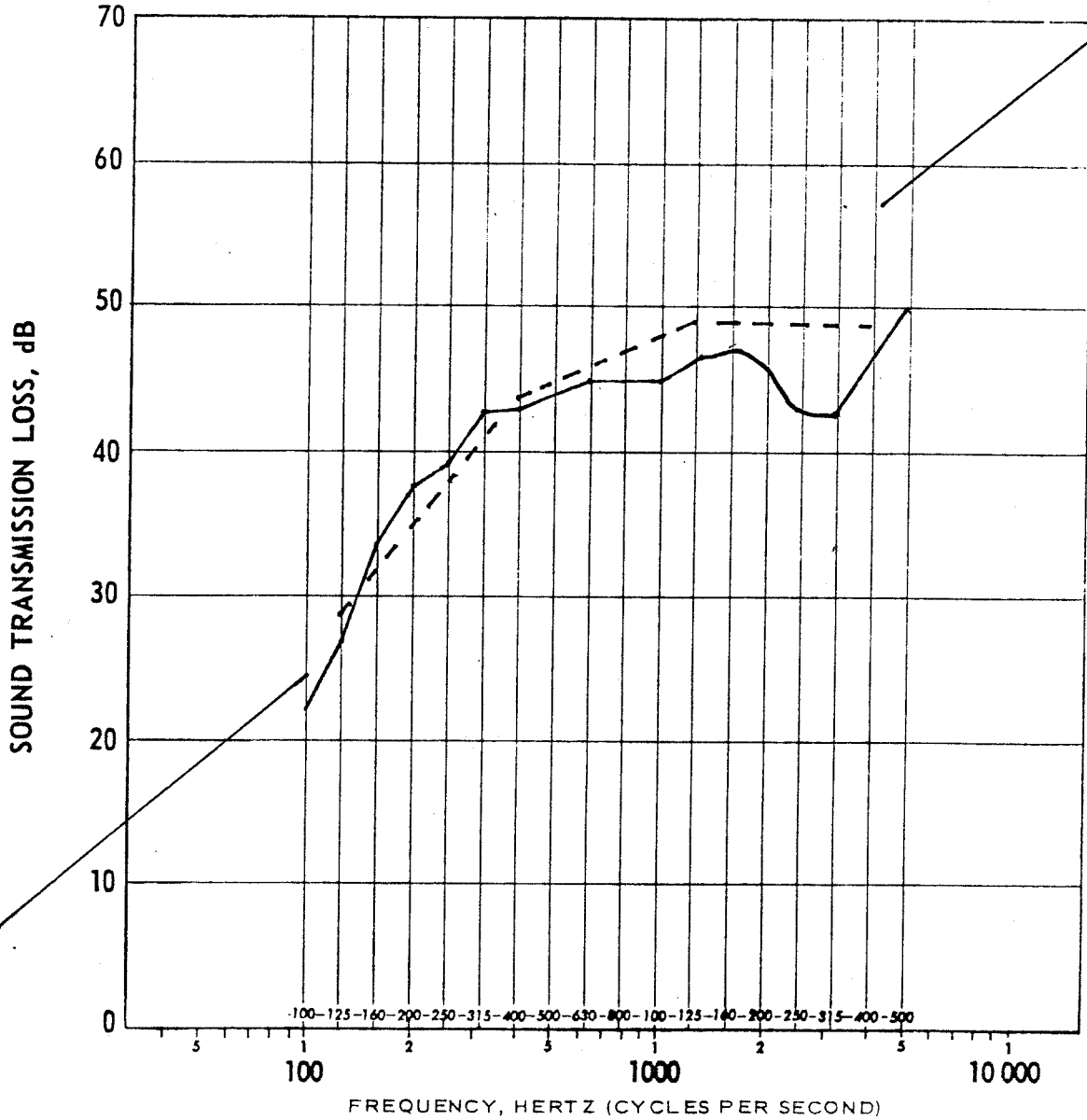
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THE SOUND TRANSMISSION LOSS OF THE TESTED SPECIMEN IS SHOWN BY THE CURVED LINE IN THE ABOVE GRAPH. THE BROKEN LINE IS THE LIMITING SOUND TRANSMISSION CLASS CONTOUR. THE GRAPH WAS PREPARED ON CODEX PAPER NO. 31, 462.

THE THEORETICAL TRANSMISSION LOSS OF THAT LIMP MASS HAVING THE SAME WEIGHT PER SQUARE FOOT AS THE SPECIMEN CAN BE LOCATED BY DRAWING A STRAIGHT LINE BETWEEN THE TWO SLASH MARKS ON THE EDGES OF THE GRID. THIS WAS DERIVED FROM THE EQUATION:  $TL = 20 \log W + 20 \log F - 33$ , WHERE  $W$  IS WEIGHT IN POUNDS PER SQUARE FOOT, AND  $F$  IS FREQUENCY IN HERTZ (CYCLES PER SECOND).

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### RESULTS OF MEASUREMENTS (con't)

FREQUENCY, Hertz, (cps)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
TRANSMISSION LOSS, dB	22	27	34	38	39	43	43	44	45	45	45	47	47	46	43	43	47	50
DEFICIENCIES		2					1	1	1	2	3	2	2	3	6	6	2	
SOUND TRANSMISSION CLASS	<u>45</u>																	

Reviewed by L. D. Williams Submitted by John W. Kopec  
L. D. Williams  
Acoustical Engineer  
John W. Kopec  
Chief - Acoustical Testing

Revised 05/23/83

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