

**RIVERBANK ACOUSTICAL LABORATORIES**1512 S. BATAVIA AVENUE  
GENEVA, ILLINOIS 60134OF  
IIT RESEARCH INSTITUTE630/232-0104  
FOUNDED 1918 BY  
WALLACE CLEMENT SABINE**REPORT**

Skyfold

Sound Reduction Index Test  
RAL™-TL01-280a

Skyfold Autolift Wall System, 10.25 Inches

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CONDUCTED: 13 November 2001

**TEST METHOD**

Unless otherwise designated, the measurements reported below were made with all facilities and procedures in conformity with the ISO Designations ISO 140-3, Part 3 and ISO 717-1.2, as well as other pertinent standards. The test was conducted for Mr. Mark McDonald of Skyfold, 325 Lee Ave., Baie d'Urfe, Quebec, Canada H9X 3S3.

**DESCRIPTION OF THE SPECIMEN**

The test specimen was designated by the manufacturer as Skyfold Autolift Wall System, 10.25 inches. The overall dimensions of the specimen as measured were 4.27 m (168 in.) wide by 2.63 m (103.5 in.) high and 260 mm (10.25 in.) thick. The specimen was installed by the manufacturer directly into a 2.74 m (9 ft) by 4.27 m (14 ft) wood-lined steel frame and was sealed on the periphery (both sides) with a dense mastic.

A description of the specimen was as follows: The wall consisted of five panels on each side of a 146 mm (5.75 in.) airspace. The space between the vertical planes of panels contained two pantograph type lifting mechanisms and a T-bar. The wall folded and raised vertically to the top of the test opening. The lifting action was provided by use of an electric motor attached by cable to the T-bar. Average weight of the panels was 32.6 kg (71.9 lbs) each. Nominal dimensions of the panels were 4.24 m (166.75 in.) long by 559 mm (22 in.) high by 57 mm (2.25 in.) thick. Each panel consisted of a 0.8 mm (0.032 in.) galvanized steel face sheet, a 19 mm (0.75 in.) honeycomb paper fill core, and a 0.5 mm (0.018 in.) galvanized steel backer sheet. Attached to the interior face of each panel was 38 mm (1.5 in.) thick semi-rigid glass fiber (identified as Manson AKI board, density 28.8 kg/m<sup>3</sup> (5.9 lbs/ft<sup>3</sup>)). The panels were hinged at two locations each. In the closed position, there was 13 mm (0.5 in.) overlap between the panels. The panel joints were sealed with 13 mm (0.5 in.) by 6 mm (0.25 in.) expanded cross-linked polyethylene foam. The panels were sealed to the test frame around the vertical perimeter using 3 mm (0.125 in.) thick rubber bulb seals which measured nominally 19 mm (0.75 in.) in the closed position. The panels were sealed to the test frame around the top and bottom perimeter using 2 mm (0.08 in.) thick rubber bulb seals which measured nominally 38 mm (1.5 in.) at the top and 35 mm (1.375 in.) at the bottom in the closed position. Laboratory personnel performed a full inspection on the test specimen. Prior to testing the operable wall was opened and closed at least five times, and the test was conducted with no further adjustments.

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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The weight of the specimen as measured was 462 kg (1,017.5 lbs.), an average of 41 kg/m<sup>2</sup> (8.4 lbs/ft<sup>2</sup>). The transmission area used in the calculations was 11.2 m<sup>2</sup> (121 ft<sup>2</sup>). The source and receiving room temperatures at the time of the test were 22±2°C (72±2°F) and 59±2% relative humidity. The source and receive reverberation room volumes were 179m<sup>3</sup> (6,298 ft<sup>3</sup>) and 177 m<sup>3</sup> (6,255 ft<sup>3</sup>), respectively.

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Sound reduction index values (R) as reported below are tabulated at the sixteen standard frequencies. A graphic presentation of the data and additional information appear on the following page. The precision of the R values are within the limits set by the ISO 140-3, part 3.

<u>FREQ.</u>	<u>R</u>	<u>DEV.</u>	<u>FREQ.</u>	<u>R</u>	<u>DEV.</u>
100	31	1	630	45	7
125	33	2	800	48	5
160	37	1	1000	51	3
200	41	0	1250	55	0
250	44	0	1600	58	0
315	47	0	2000	58	0
400	47	3	2500	59	0
500	46	5	3150	59	0

$R_w = 51$   
Total Dev. 27

**ABBREVIATION INDEX**

FREQ. = Frequency, Hertz, (cps)  
R = Sound Reduction Index, dB  
DEV. = Deviations, dB < Spectrum Adaptation Contour  
 $R_w$  = Weighted Sound Reduction Index

Tested by

  
Dean Victor  
Senior Experimentalist

Approved by

  
David L. Moyer  
Laboratory Manager

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**----- REFERENCE CURVE**

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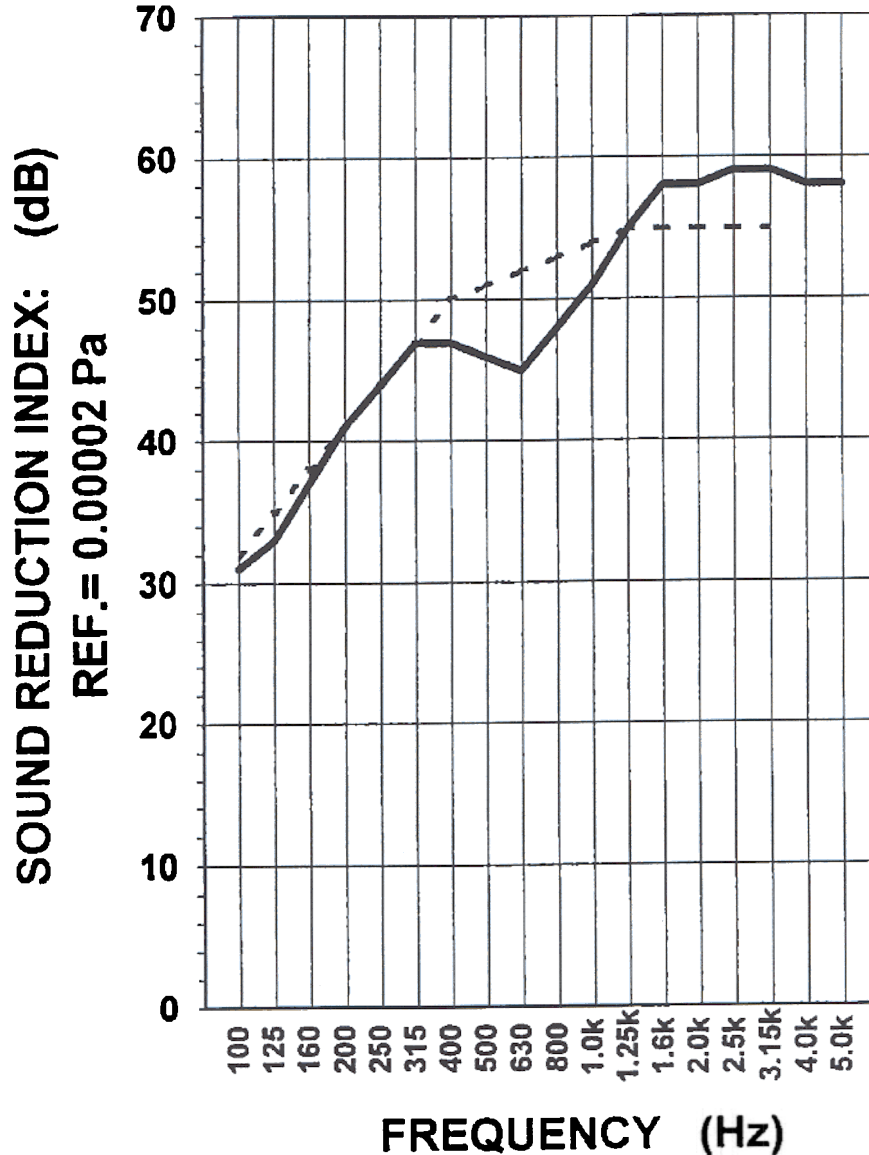
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