

SOUND REPORTS
ALVEDOOR

Determination of sound insulation in a laboratory according to SS EN ISO 140-3:95

Client: Alvedoor AB Date of test: 2004-09-22

Test object: Door type: A60-GT construction according to drawing B201806
Thickness and weight of the door leaf: 54 mm and. 79 kg respectively.

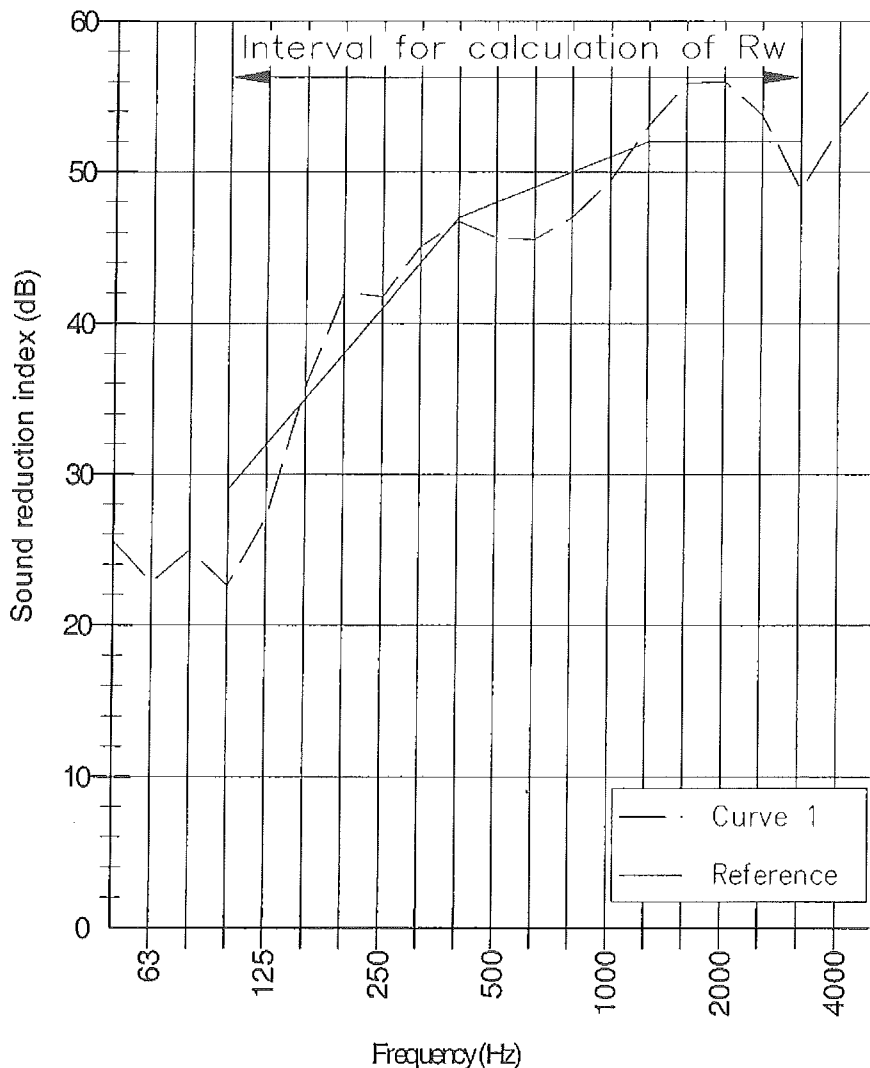
Area density of the door leaf: 46,9 kg/m²

Surface layer of the door leaf: Steelplate

Area of the test opening and module: 1,94 m², M9*M21

Result: Curve 1 Normal mounting and without sealing with tape


Curve 2 Reference Curve




Frequency (Hz)	Curve 1 (dB)
50	25,6
63	22,8
80	25
100	22,6
125	27,1
160	35,8
200	42,1
250	41,8
315	45,1
400	46,7
500	45,6
630	45,5
800	47
1000	49,4
1250	53,1
1600	55,9
2000	56
2500	53,8
3150	48,8
4000	52,9
5000	56,1

R_w	48
(C; Ctr)	(-2;-8)
50-3150	(-2;-10)
50-5000	(-2;-10)
R_{mean}	44,8
Sum. Dev.	25,3
Max. Dev.	6,4
Frequency	100

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Acoustics


Håkan Andersson
Technical Manager

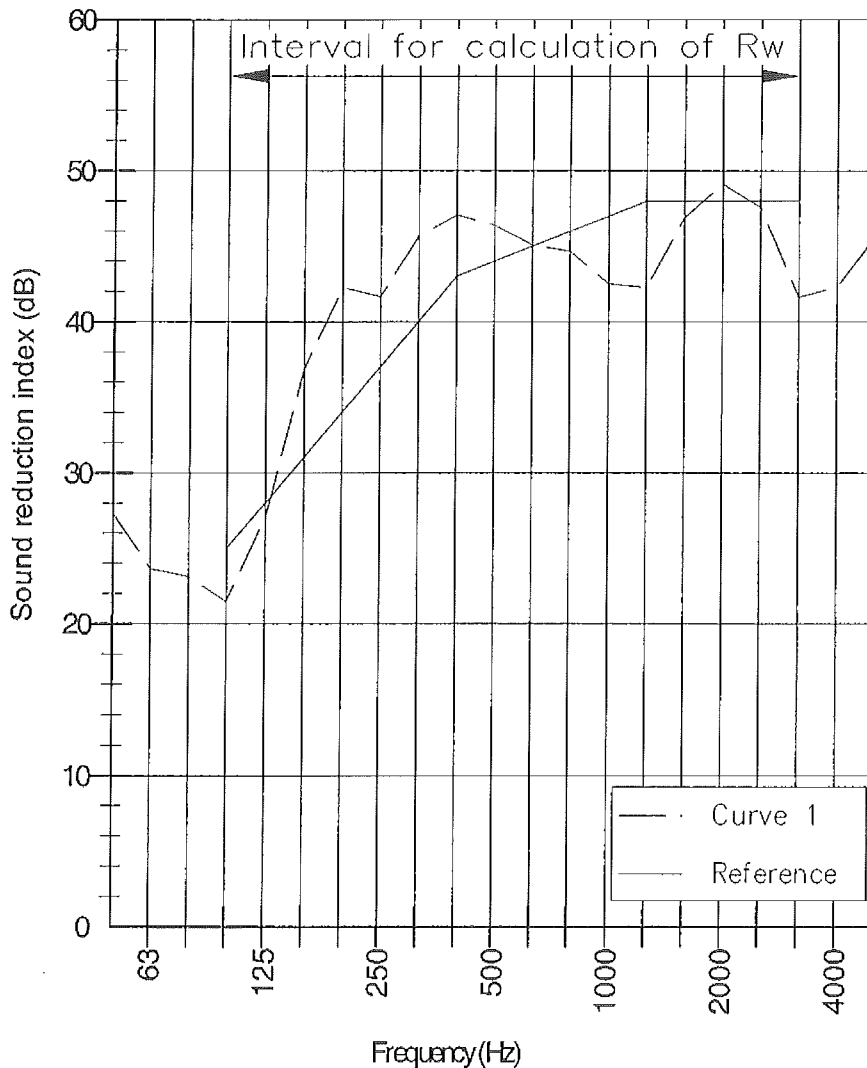

Tore Bergkvist
Technical Officer

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SP Staatliche Materialprüfungs- und Forschungsanstalt • SP Institut national d'essai des matériaux et de recherches

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Determination of sound insulation in a laboratory according to SS EN ISO 140-3:95

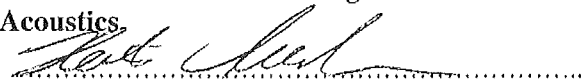
Client: Alvedoor AB Date of test: 2004-09-22
 Test object: Door type: A60-GT construction according to drawing B200863A.
 Thickness and weight of the door leaf: 54 mm and. 79 kg respectively.
 Area density of the door leaf: 46,9 kg/m²
 Surface layer of the door leaf: Steelplate
 Area of the test opening and module: 1,94 m², M9*M21
 Result: Curve 1 - Normal mounting and without sealing with tape
 Curve 2 - Reference Curve

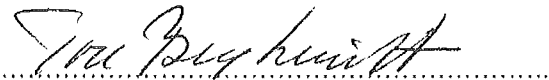


Frequency (Hz)	Curve 1 (dB)
50	27,3
63	23,7
80	23,1
100	21,5
125	27
160	36,9
200	42,2
250	41,7
315	45,7
400	47,1
500	46,4
630	45,1
800	44,7
1000	42,5
1250	42,2
1600	46,9
2000	49,1
2500	47,6
3150	41,6
4000	42,3
5000	45,6

Rw	44
(C; Ctr)	(0;-5)
50-3150	(-1;-7)
50-5000	(-1;-7)
Rmean	41,8
Sum. Dev.	24
Max. Dev.	6,4
Frequency	3150

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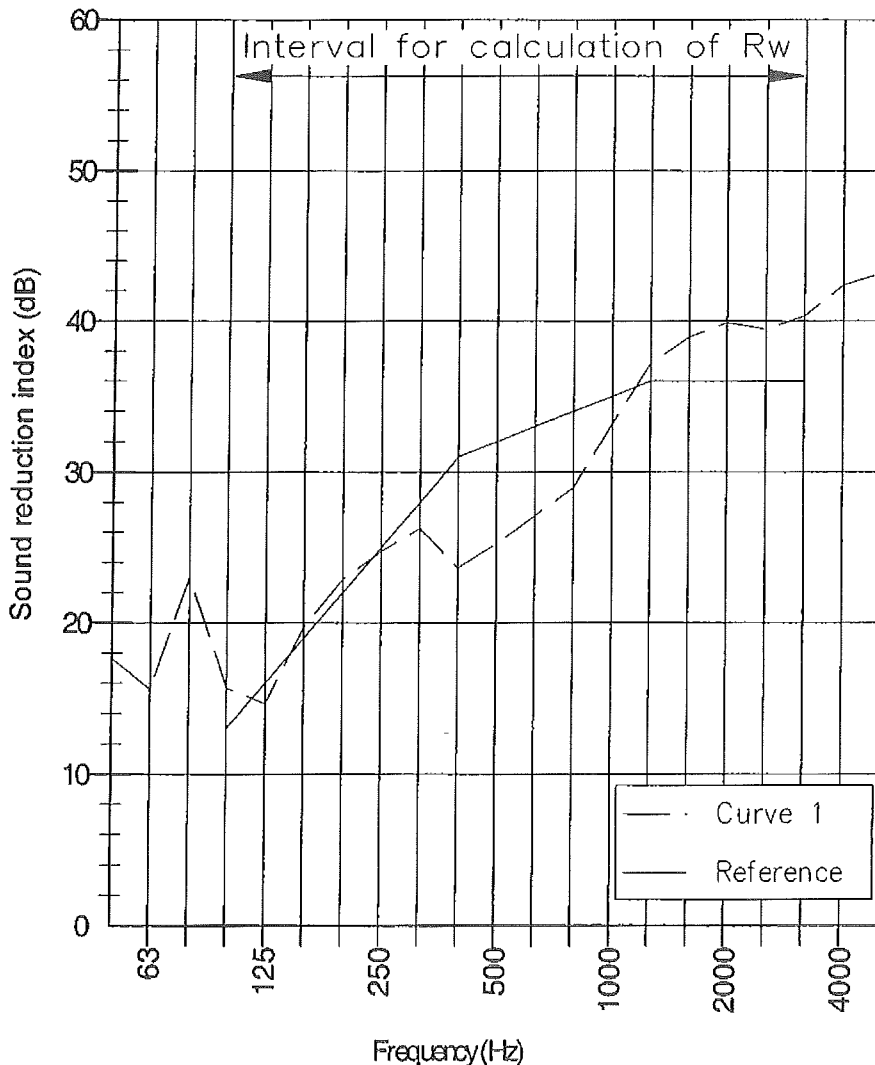
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Determination of sound insulation in a laboratory according to SS EN ISO 140-3:95

Client: Alvedoor AB Date of test: 2004-10-20

Test object: Door type: B-15M construction according to drawing B301809
 Thickness and weight of the door leaf: 39 mm and 40 kg respectively.
 Area density of the door leaf: 23,7 kg/m²
 Surface layer of the door leaf: Steelplate
 Area of the test opening and module: 1,94 m², M9*M21

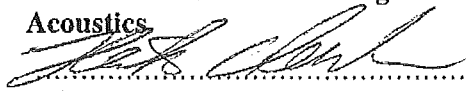
Result: Curve 1 - Normal mounting and without sealing with tape, with open ventilator
 Curve 2 - Reference Curve



Frequency (Hz)	Curve 1 (dB)
50	17,6
63	15,6
80	23
100	15,7
125	14,7
160	19,7
200	22,9
250	24,8
315	26,2
400	23,6
500	25,3
630	27,1
800	28,9
1000	33,2
1250	37,2
1600	38,9
2000	39,9
2500	39,4
3150	40,3
4000	42,4
5000	43,2

Rw	32
(C; Ctr)	(-2;-5)
50-3150	(-2;-5)
50-5000	(-1;-5)
Rmean	28,6
Sum. Dev.	30,2
Max. Dev.	7,4
Frequency	400

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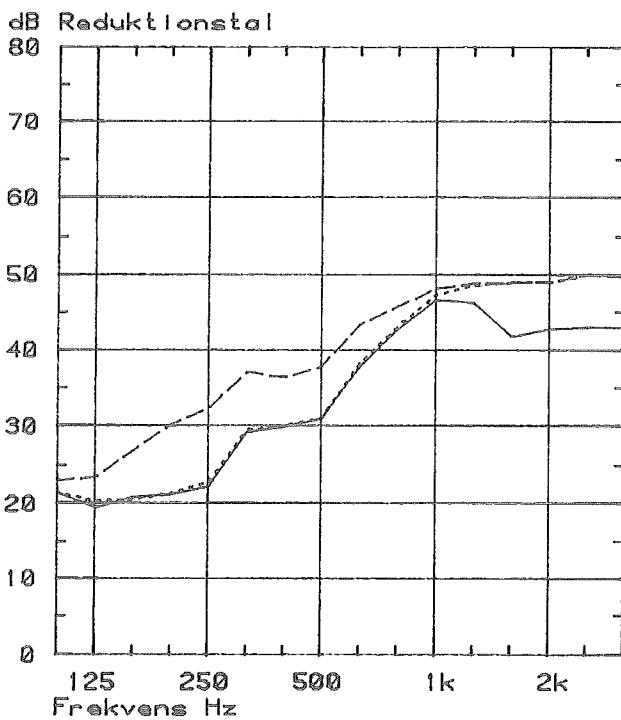
Ordering company: Alvestaprodukter, Ship Doors AB, 342 00 ALVESTA

Test: Sound transmission loss measurement

Object: Door type Alvedoor B-15K. Frame of steel. Doorcovering: PVC-foils on steel. Width x height: 885 mm x 2085 mm. Thickness and weight of the doorblade: 40 mm and 57 kg respectively. Area of the test opening: 1.94 m². See drawing No C 100 161.

Result: (—) Normal mounting
 (-----) Sealed with tape between frame and doorblade on both sides
 (----) Vent grille and space between frame and doorblade sealed with tape on both sides

Sound transmission loss



Id-nr:	2	3	4	
Frekv Hz	Nivå dB	Nivå dB	Nivå dB	
100	21.3	21.4	23.0	
125	19.4	20.3	23.5	
160	20.7	20.6	26.6	
200	21.1	21.3	30.1	
250	22.3	22.7	32.3	
315	29.2	29.5	37.0	
400	30.0	29.9	36.3	
500	30.9	31.1	37.8	
630	37.9	38.1	43.4	
800	42.8	43.2	45.7	
1000	46.5	47.2	48.1	
1250	46.2	48.7	48.9	
1600	41.7	48.9	49.0	
2000	42.7	49.0	49.0	
2500	43.0	50.0	50.0	
3150	42.9	49.8	49.6	
Rmedel Ia, lab	33.7	35.7	39.4	Average Index
	36	36	43	

Borås 1979-09-21

SWEDISH NATIONAL AUTHORITY FOR TESTING,
 INSPECTION AND METROLOGY
 Acoustical laboratory

Hans Jonasson

 Hans Jonasson

Carl-Axel Carlsson

 Carl-Axel Carlsson



Ordering company: Alvestaprodukter, Ship Doors AB, 342 00 ALVESTA
Object: 2 doors
Test: Sound transmission loss measurements

List of instruments

Noise generator	Brüel & Kjaer	1405
1/3-octave equalizer	UREI	539
Power amplifier	Accuphase	M-60
Loudspeakers	Philips	AD12100/HP
Microphones	Brüel & Kjaer	4144 + 4132
Microphone preamplifiers	Brüel & Kjaer	2613 + 2619
Rotating microphone booms	Brüel & Kjaer	2801
Digital frequency analyzer	Brüel & Kjaer	2131
Sound level calibrator	Brüel & Kjaer	4230
Minicomputer	Digital Equipment	PDP/11-34

Measurement method

The measurements have been carried out according to ISO 140-1978. The volume of the source and receiver room has been 105.5 m³ and 129 m³ respectively. The influence of the sound transmission through the wall between the rooms has been negligible (<0.1 dB) throughout the whole frequency range.

For further information concerning the measurement method we refer to our report SP-Met 1978:2.

Mounting

The position of the frame in the test opening was adjusted with wooden blocks and fixed with 8 nails. The space between the frame and the test opening (10 - 15 mm) was sealed with glass wool. In addition the space was covered with wooden strips (11 x 44 mm) on both sides, which were sealed with tape.

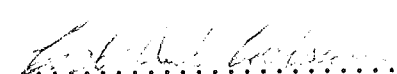
Result

The sound transmission loss curves, the average sound transmission losses and the indexes of airborne sound insulation according to ISO/R 717-1968, although measured in a laboratory, are given in certificates 7931,102;1-2.

Borås 1979-09-21

SWEDISH NATIONAL AUTHORITY FOR TESTING,
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Acoustical laboratory


.....
Hans Jonasson


.....
Carl-Axel Carlsson



Enhet/Department

Acoustics
Handläggare/Handled by

Tore Bergkvist

REPORT
Datum/Date

25-Oct-04
Ert datum/Your date

Measurement -04
Beteckning/Reference

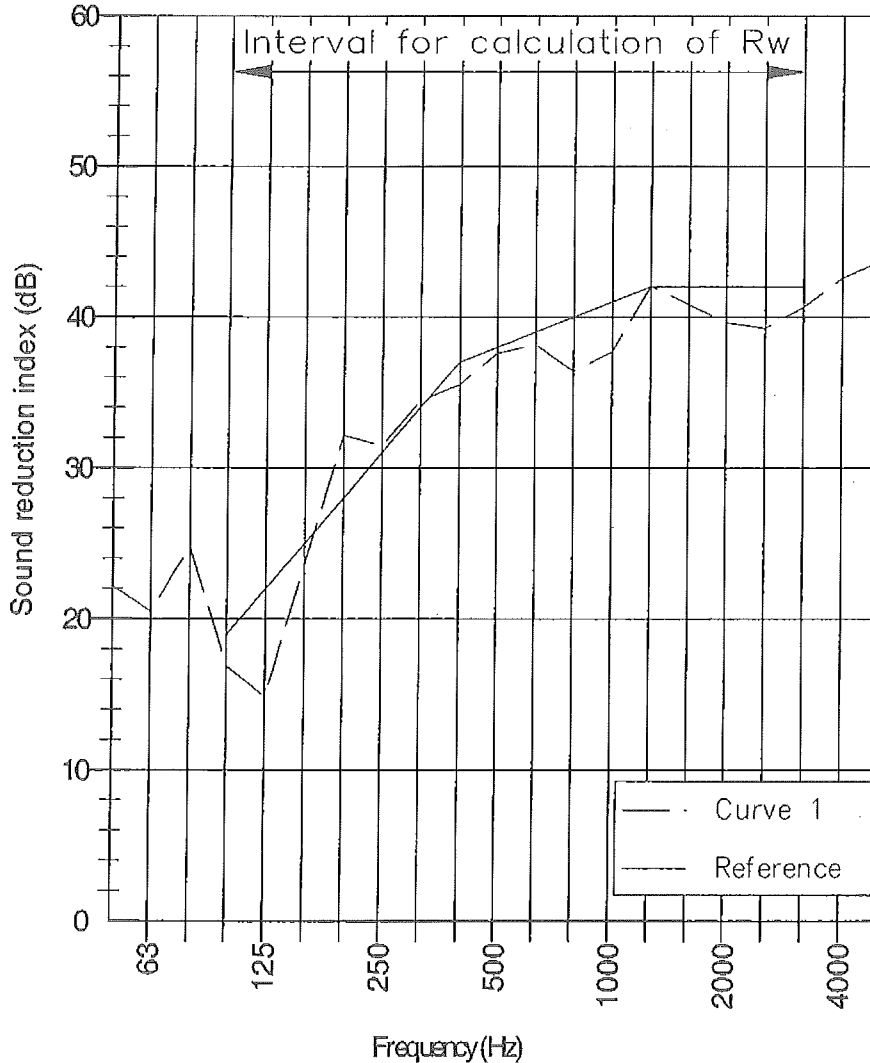
P403053
Er referens/Your reference

Jan Veljebo

Determination of sound insulation in a laboratory according to SS EN ISO 140-3:95

Client: Alvedoor AB Date of test: 2004-10-20
Test object: Door type: B-15M construction according to drawing 301808.
Thickness and weight of the door leaf: 39 mm and 39 kg respectively.

Area density of the door leaf: 23,1 kg/m²
Surface layer of the door leaf: Steelplate
Area of the test opening and module: 1,94 m², M9*M21
Result: Curve 1 - Normal mounting and without sealing with tape.
Curve 2 - Reference Curve



Frequency (Hz)	Curve 1 (dB)
50	22,2
63	20,5
80	24,8
100	16,9
125	14,9
160	23,7
200	32,1
250	31,4
315	34,4
400	35,5
500	37,6
630	38,2
800	36,4
1000	37,7
1250	42
1600	40,8
2000	39,6
2500	39,2
3150	40,6
4000	42,6
5000	43,7

Rw	38
(C; Ctr)	(-2;-7)
50-3150	(-2;-7)
50-5000	(-2;-7)
Rmean	33,8
Sum. Dev.	27,9
Max. Dev.	7,1
Frequency	125

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Laboratory measurement of airborne sound insulation

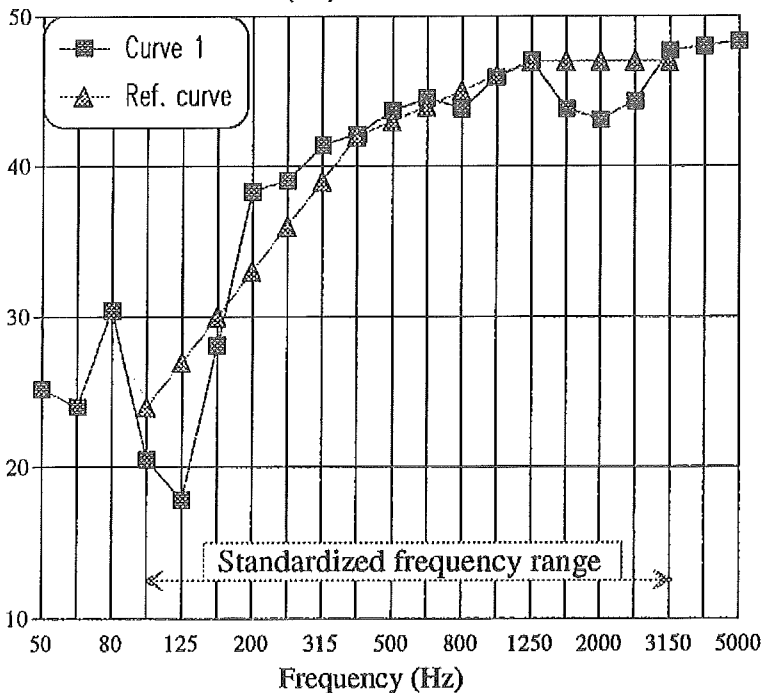
Client ALVEDOOR AB, S-342 32 Alvesta, Sweden
 Date of test May 27, 1993
 Test object Steel door type B-15 KS, according to drawing no C100 734 A ,encl. no 3.

Thickness of the doorleaf: 40,0 mm
 Weight and area density of the door: 60,2 kg / 35,7 kg/m²
 Width x height of test object: 880 x 2080 mm (M9xM21)
 Area of the test opening: 1,94 m² (M9xM21)

Test method According to ISO 140-3.
 Index Weighted sound reduction index $R_w = 43$, according to ISO 717/1-1982.

Curve 1: Test results - Normal mounting with rubberseal threshold DX 627 (type 2, encl 3)
 Curve 2: Reference curve. Maximum deviation 9,2 dB at 125 Hz.

Sound reduction index (dB)



Frequency	Curve 1
50	25,2
63	24,0
80	30,4
100	20,5
125	17,8
160	28,1
200	38,3
250	39,0
315	41,4
400	42,1
500	43,7
630	44,5
800	43,8
1000	45,9
1250	47,0
1600	43,8
2000	43,1
2500	44,3
3150	47,7
4000	48,0
5000	48,3

R_{medel} 39,4
 R_w 43

SP
 Acoustics

Hans Jonasson
 Director

Weine Kjell
 Test engineer

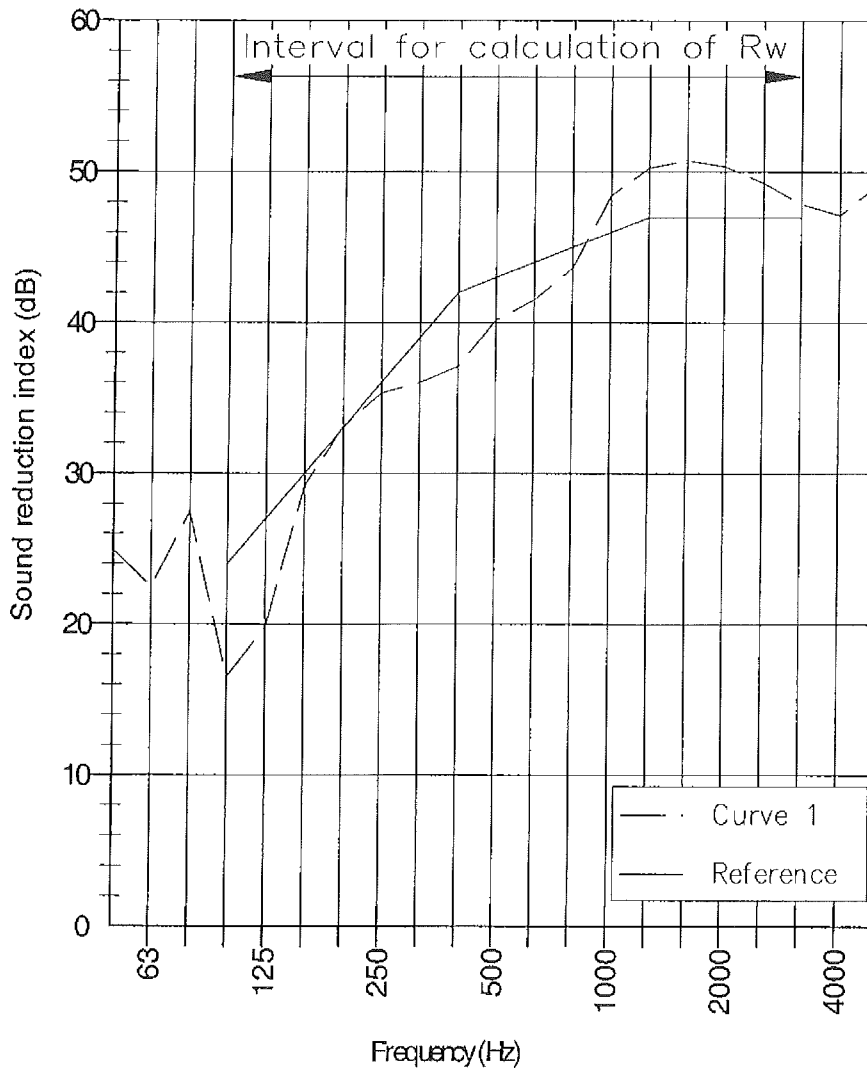
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Determination of sound insulation in a laboratory according to SS EN ISO 140-3:95

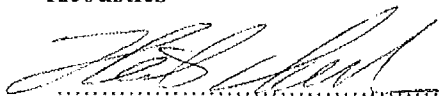
Client: Alvedoor AB Date of test: 19 Feb. 2003
 Test object: Door type: B30 HS is shown on drawing D301533D enclosure 02
 Thickness and weight of the door leaf: 50 mm and 60,5 kg respectively
 Area density of the door leaf: 35,9 kg/m²
 Surface layer of the door leaf: Steelplate
 Area of the test opening and module: 1,94 m², M9*M21
 Results: Curve 1 - Normal mounting and without sealing with tape
 Curve 2 - Reference Curve



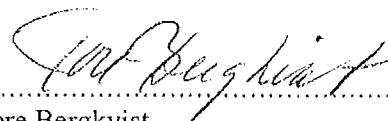
Frequency (Hz)	Curve 1 (dB)
50	24,9
63	22,5
80	27,5
100	16,5
125	19,8
160	29,2
200	33,1
250	35,3
315	36
400	37,1
500	40,1
630	41,5
800	43,6
1000	48,4
1250	50,3
1600	50,7
2000	50,3
2500	49,3
3150	47,9
4000	47,1
5000	49,2

Rw	43
(C; Ctr)	(-3;-9)
50-3150	(-3;-10)
50-5000	(-2;-10)
Rmean	39,3
Sum. Dev.	30,9
Max. Dev.	7,5
Frequency	100

**SP Swedish National Testing and Research Institute
Acoustics**



Håkan Andersson
Acting Technical Manager



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