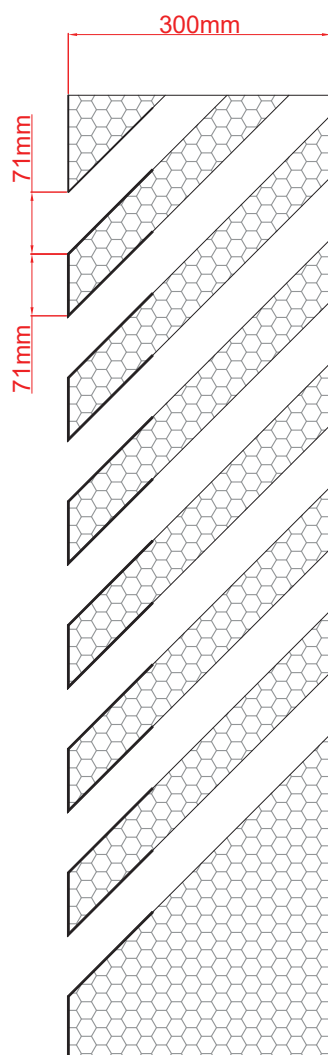


Acoustic Louvre – 50/50mm Blade Configuration (45° Pitch)



7. 50/50 x 300mm 45° Straight Louvre

Data Sheet 7

Test Number: 8
Client: Sound Planning Ltd
Test Date: 17/02/2020
Sample Height: 1.1 m
Sample Width: 1.1 m
Sample Weight: N/A kg/m²

Test Room:
Air Temperature: 10.6 °C
Air Humidity: 63 %
Volume: 55 m³

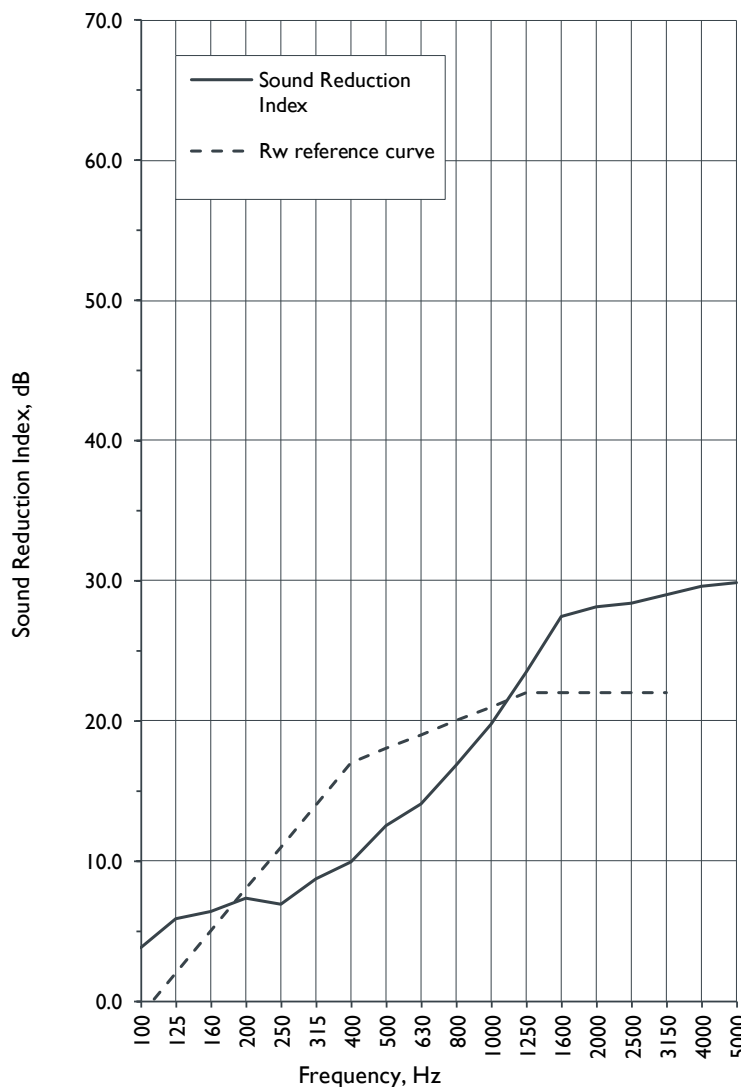
Receiving
Air Temperature: 11.4 °C
Air Humidity: 58 %
Volume: 50 m³

Air Pressure: 999 mbar

Product

Identification: Louvre AL300 50/50 P45

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	20.2	12.5
63+	21.4	
80+	8.2	
100	3.8	5.2
125	5.9	
160	6.4	
200	7.3	7.6
250	6.9	
315	8.7	
400	9.9	11.8
500	12.5	
630	14.1	
800	16.8	19.2
1000	19.8	
1250	23.5	
1600	27.4	27.9
2000	28.1	
2500	28.4	
3150	29.0	29.5
4000	29.6	
5000	29.9	
6300+	29.8	27.8
8000+	28.6	
10000+	25.9	
Average 100-3150	15.5	Version v3.1



Rating according to BS EN ISO 717-1:2013

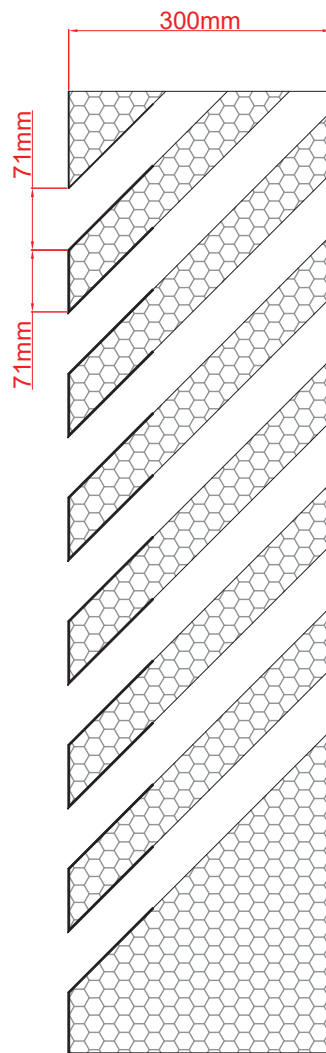
R_w(C;C_{tr})= 18 (-1 ; -4) dB

* shows measurement corrected for background

> shows measurement limited by background

+ shows Frequency beyond standard and not UKAS accredited

Acoustic Louvre – 50/50mm Blade Configuration (45° Pitch)



8. 50/50 x 300mm 45° Straight Louvre with Birdmesh

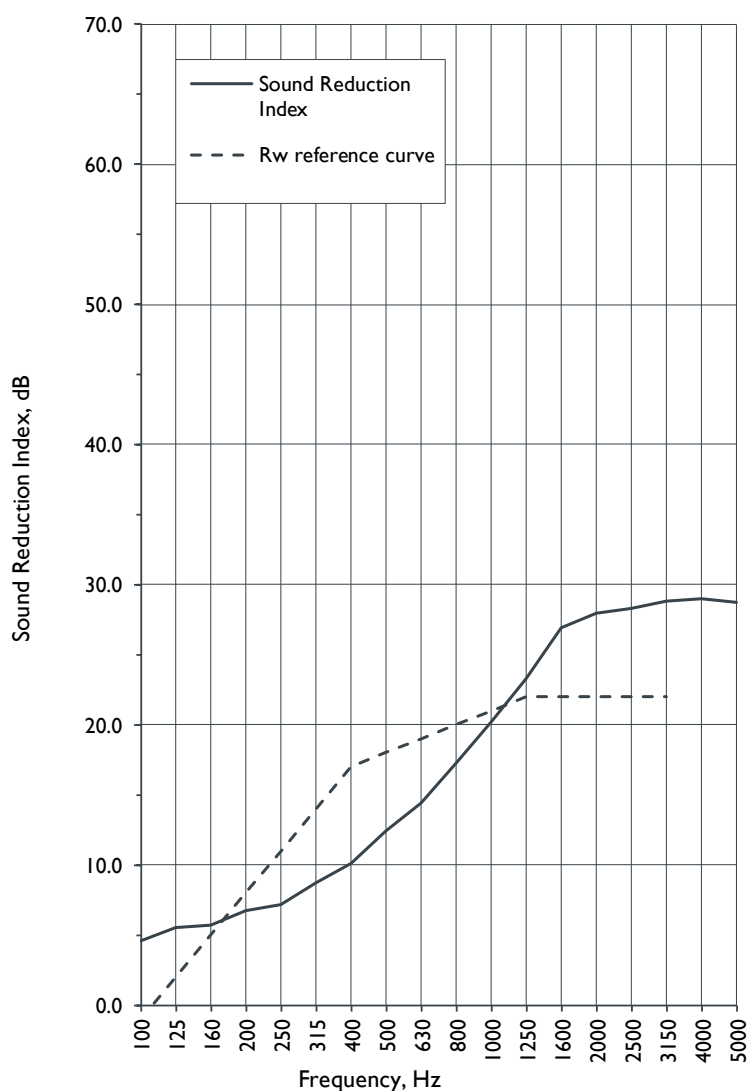
Data Sheet 8

Test Number:	9	Test Room:	Source	Receiving
Client:	Sound Planning Ltd	Air Temperature:	10.6 °C	11.2 °C
Test Date:	17/02/2020	Air Humidity:	64 %	59 %
Sample Height:	1.1 m	Volume:	55 m ³	50 m ³
Sample Width:	1.1 m			
Sample Weight:	N/A kg/m ²	Air Pressure:	999 mbar	

Product

Identification: Louvre AL300 50/50 P45 + Bird Mesh

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	20.0	12.9
63+	20.3	
80+	8.7	
100	4.6	5.2
125	5.5	
160	5.7	
200	6.7	7.4
250	7.2	
315	8.7	
400	10.1	11.9
500	12.4	
630	14.4	
800	17.3	19.6
1000	20.2	
1250	23.3	
1600	26.9	27.7
2000	28.0	
2500	28.3	
3150	28.8	28.8
4000	29.0	
5000	28.7	
6300+	29.0	26.8
8000+	27.3	
10000+	25.1	
Average 100-3150	15.5	Version v3.1



Rating according to BS EN ISO 717-1:2013

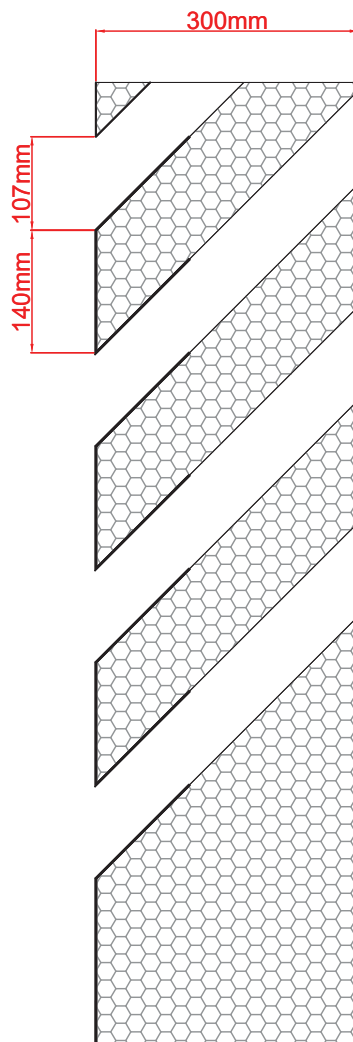
R_w(C;C_{tr})= 18 (-1 ; -4) dB

* shows measurement corrected for background

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Acoustic Louvre – 100/75mm Blade Configuration (45° Pitch)



9. 100/75 x 300mm 45° Straight Louvre

Data Sheet 9

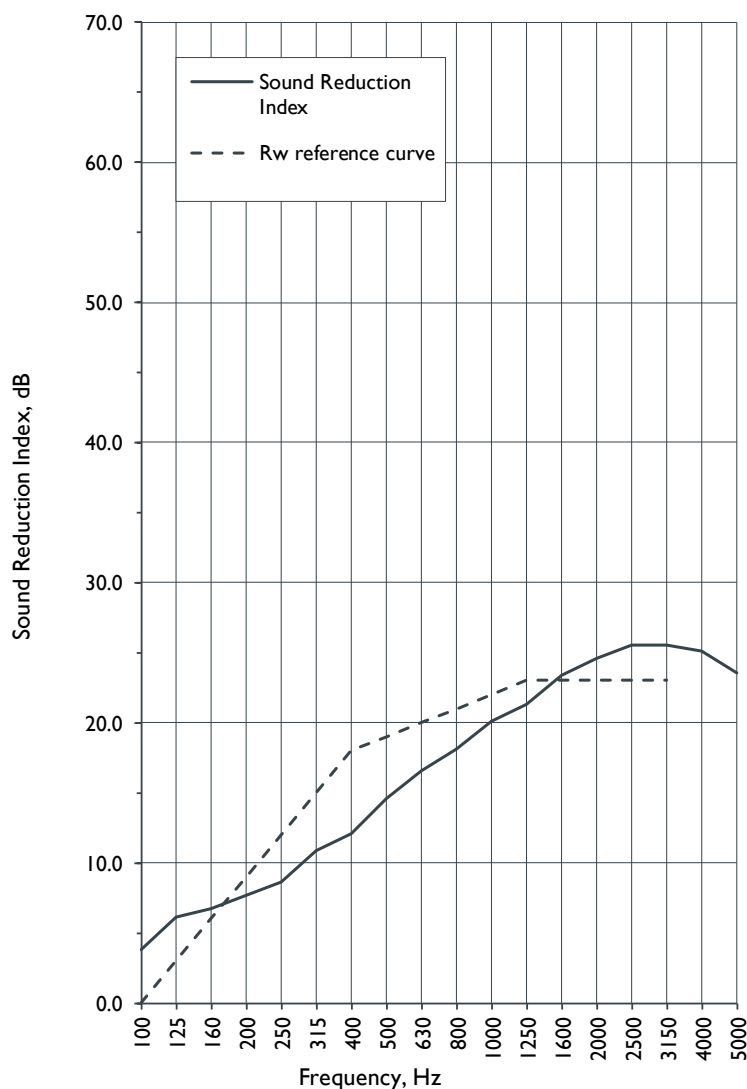
Test Number: 10
Client: Sound Planning Ltd
Test Date: 17/02/2020
Sample Height: 1.1 m
Sample Width: 1.1 m
Sample Weight: N/A kg/m²

Test Room:
Air Temperature: 10.7 °C
Air Humidity: 65 %
Volume: 55 m³
Air Pressure: 999 mbar

Product

Identification: Louvre AL300 100/75 P45

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	20.5	12.7
63+	19.3	
80+	8.6	
100	3.8	5.4
125	6.1	
160	6.7	
200	7.7	8.9
250	8.6	
315	10.9	
400	12.1	14.0
500	14.6	
630	16.6	
800	18.1	19.6
1000	20.1	
1250	21.3	
1600	23.4	24.4
2000	24.6	
2500	25.5	
3150	25.5	24.7
4000	25.1	
5000	23.6	
6300+	21.7	20.1
8000+	20.1	
10000+	18.8	
Average 100-3150	15.4	Version v3.1



Rating according to BS EN ISO 717-1:2013

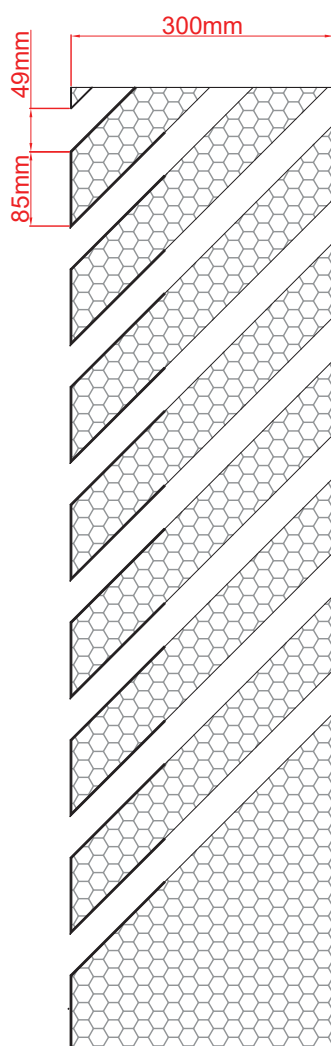
R_w(C₅₀;C_{tr})= 19 (-1 ; -4) dB

* shows measurement corrected for background

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Acoustic Louvre – 60/35mm Blade Configuration (45° Pitch)



10. 60/35 x 300mm 45° Straight Louvre

Data Sheet 10

Test Number: 11
Client: Sound Planning Ltd
Test Date: 17/02/2020
Sample Height: 1.1 m
Sample Width: 1.1 m
Sample Weight: N/A kg/m²

Test Room:
Air Temperature: 10.7 °C
Air Humidity: 65 %
Volume: 55 m³

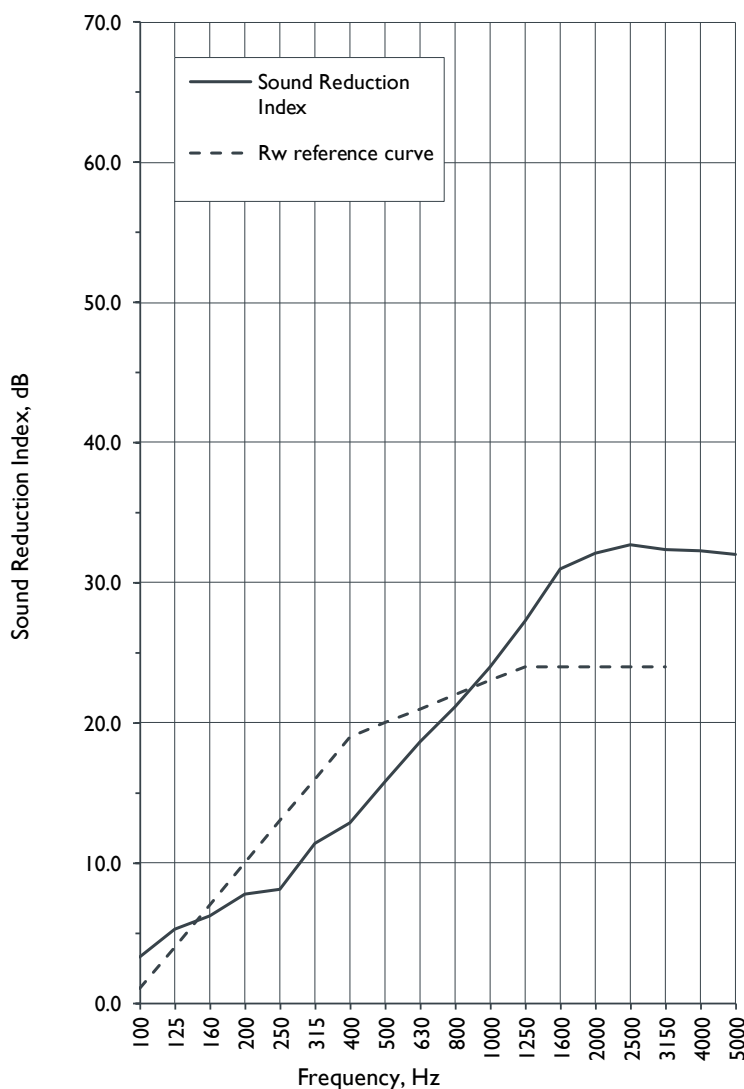
Receiving
Air Temperature: 11.5 °C
Air Humidity: 60 %
Volume: 50 m³

Air Pressure: 1000 mbar

Product

Identification: Louvre AL300 60/35 P45

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	18.6	12.3
63+	19.9	
80+	8.2	
100	3.3	4.8
125	5.3	
160	6.2	
200	7.8	8.8
250	8.1	
315	11.4	
400	12.9	15.1
500	15.8	
630	18.6	
800	21.1	23.5
1000	24.0	
1250	27.3	
1600	31.0	31.9
2000	32.1	
2500	32.7	
3150	32.4	32.2
4000	32.3	
5000	32.0	
6300+	32.6	30.3
8000+	31.3	
10000+	28.1	
Average 100-3150	18.1	Version v3.1



Rating according to BS EN ISO 717-1:2013

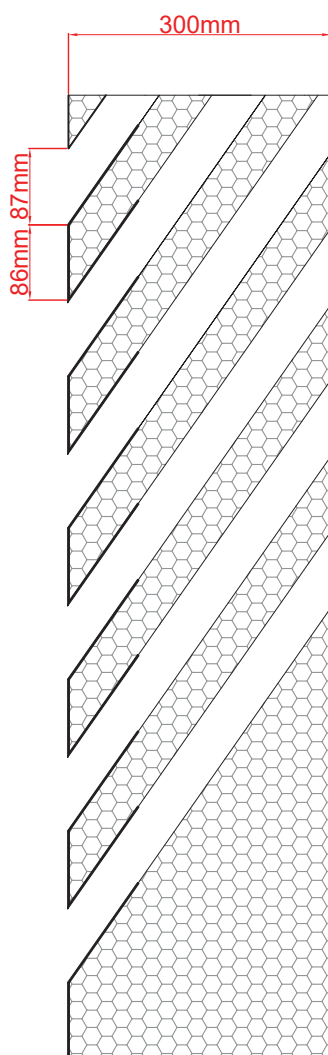
R_w(C;C_{tr})= 20 (-1 ; -5) dB

* shows measurement corrected for background

> shows measurement limited by background

+ shows Frequency beyond standard and not UKAS accredited

Acoustic Louvre – 50/50mm Blade Configuration (55° Pitch)



11. 50/50 x 300mm 55° Straight Louvre

Data Sheet 11

Test Number: 12
Client: Sound Planning Ltd
Test Date: 17/02/2020
Sample Height: 1.1 m
Sample Width: 1.1 m
Sample Weight: N/A kg/m²

Test Room:
Air Temperature: 10.7 °C
Air Humidity: 66 %
Volume: 55 m³

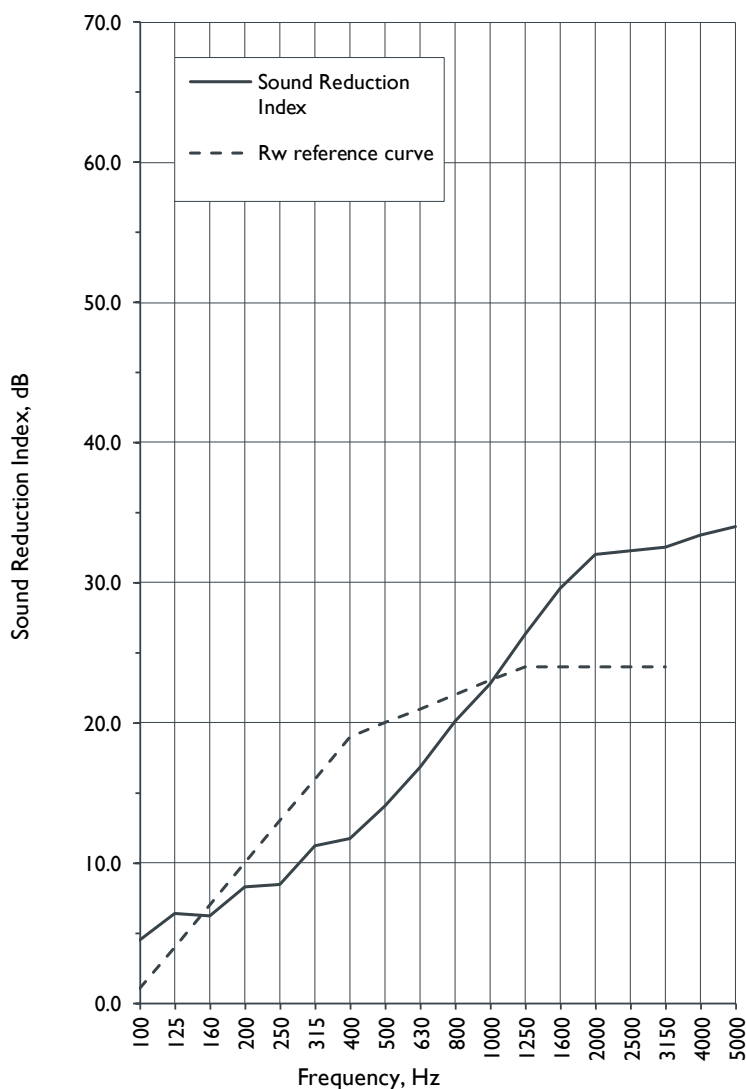
Receiving
Air Temperature: 11.5 °C
Air Humidity: 60 %
Volume: 50 m³

Air Pressure: 1000 mbar

Product

Identification: Louvre AL300 50/50 P55

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	20.3	13.1
63+	21.7	
80+	8.9	
100	4.5	5.6
125	6.4	
160	6.2	
200	8.3	9.2
250	8.5	
315	11.2	
400	11.7	13.7
500	14.1	
630	16.8	
800	20.1	22.4
1000	22.8	
1250	26.3	
1600	29.6	31.1
2000	32.0	
2500	32.3	
3150	32.5	33.3
4000	33.4	
5000	34.0	
6300+	34.2	32.1
8000+	32.7	
10000+	30.3	
Average 100-3150	17.7	Version v3.1



Rating according to BS EN ISO 717-1:2013

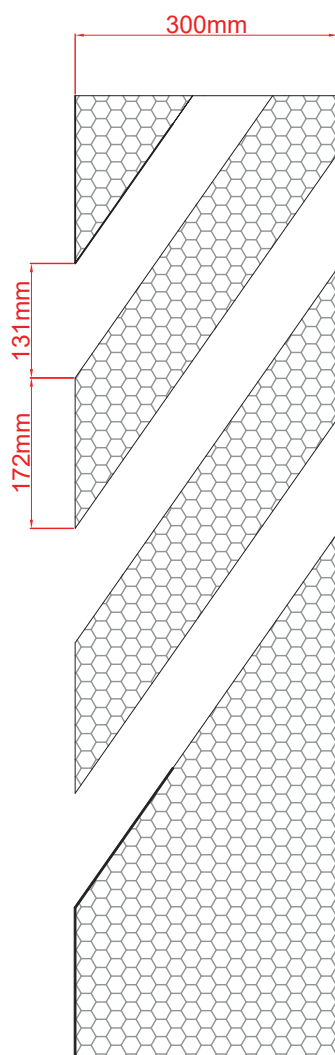
R_w(C;C_{tr})= 20 (-1 ; -5) dB

* shows measurement corrected for background

> shows measurement limited by background

+ shows Frequency beyond standard and not UKAS accredited

Acoustic Louvre – 100/75mm Blade Configuration (55° Pitch)



12. 100/75 x 300mm 55° Straight Louvre

Data Sheet 12

Test Number: 13
Client: Sound Planning Ltd
Test Date: 17/02/2020
Sample Height: 1.1 m
Sample Width: 1.1 m
Sample Weight: N/A kg/m²

Test Room:
Air Temperature: 10.7 °C
Air Humidity: 66 %
Volume: 55 m³

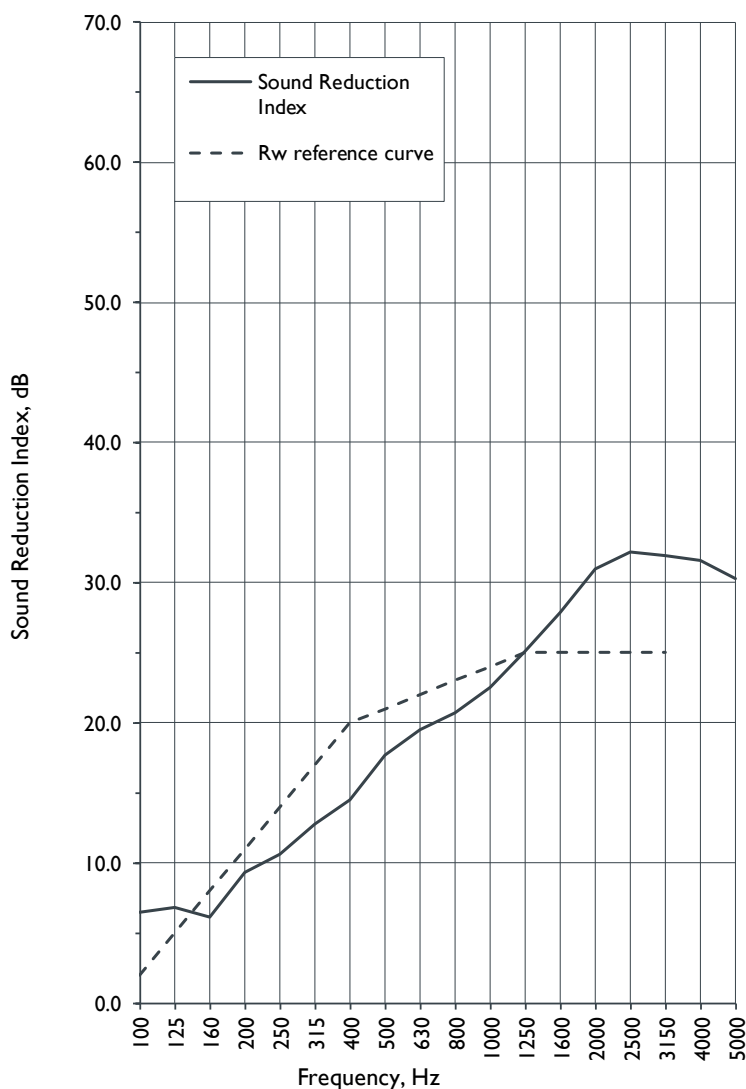
Receiving
Air Temperature: 11.5 °C
Air Humidity: 62 %
Volume: 50 m³

Air Pressure: 1001 mbar

Product

Identification: Louvre AL300 100/75 P55

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	21.6	14.2
63+	22.7	
80+	9.9	
100	6.5	6.5
125	6.8	
160	6.1	
200	9.3	10.7
250	10.6	
315	12.8	
400	14.5	16.7
500	17.7	
630	19.5	
800	20.7	22.4
1000	22.5	
1250	25.1	
1600	27.9	30.0
2000	31.0	
2500	32.2	
3150	31.9	31.2
4000	31.6	
5000	30.3	
6300+	27.7	25.2
8000+	25.8	
10000+	23.3	
Average 100-3150	18.4	Version v3.1



Rating according to BS EN ISO 717-1:2013

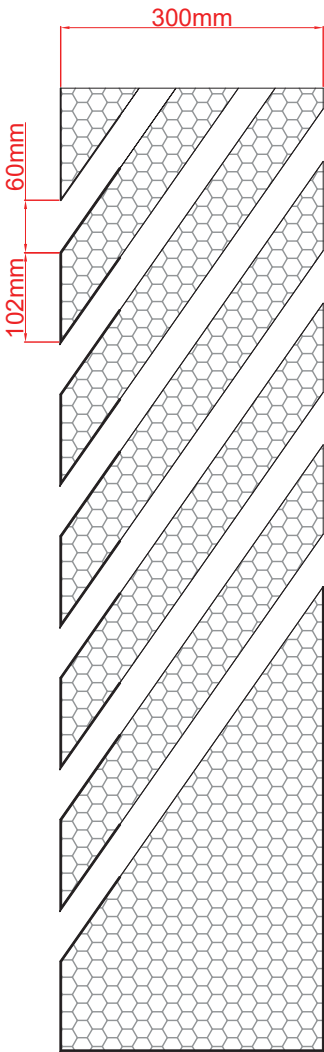
R_w(C;C_{tr})= 21 (-1 ; -4) dB

* shows measurement corrected for background

> shows measurement limited by background

+ shows Frequency beyond standard and not UKAS accredited

Acoustic Louvre – 60/35mm Blade Configuration (55° Pitch)



13. 60/35 x 300mm 55° Straight Louvre

Data Sheet 13

Test Number: 14
Client: Sound Planning Ltd
Test Date: 17/02/2020
Sample Height: 1.1 m
Sample Width: 1.1 m
Sample Weight: N/A kg/m²

Test Room:
Air Temperature: 10.8 °C
Air Humidity: 66 %
Volume: 55 m³

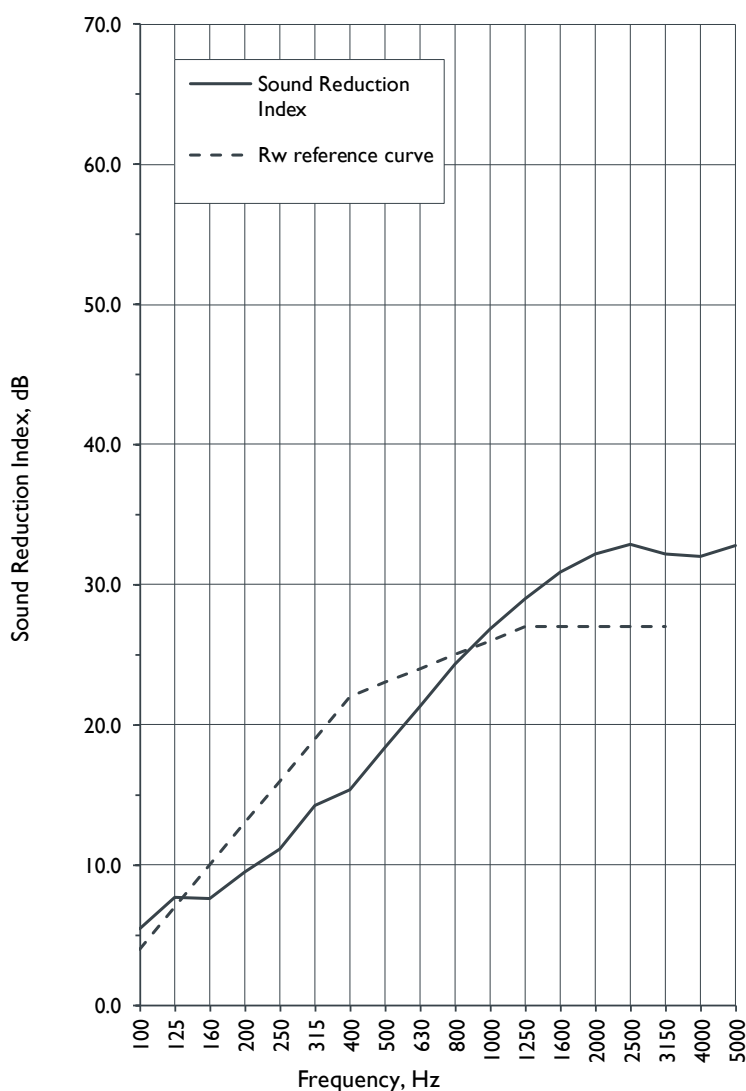
Receiving
Air Temperature: 11.6 °C
Air Humidity: 62 %
Volume: 50 m³

Air Pressure: 1001 mbar

Product

Identification: Louvre AL300 60/35 P55

Freq, f Hz	Sound Reduction Index, dB	
	1/3 Oct	Octave
50+	20.7	13.6
63+	22.2	
80+	9.3	
100	5.4	6.7
125	7.7	
160	7.6	
200	9.5	11.2
250	11.1	
315	14.2	
400	15.4	17.7
500	18.4	
630	21.3	
800	24.3	26.3
1000	26.8	
1250	29.0	
1600	30.9	31.9
2000	32.2	
2500	32.9	
3150	32.2	32.3
4000	32.0	
5000	32.8	
6300+	32.8	30.6
8000+	30.6	
10000+	29.1	
Average 100-3150	19.9	Version v3.1



Rating according to BS EN ISO 717-1:2013

R_w(C;C_{tr})= 23 (-2 ; -6) dB

* shows measurement corrected for background

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Technical Report

24567-SRL-RP-XT-002-PI

Supersedes Report Ref. No. 24567-SRL-RP-XT-001-PI dated 4 May 2020

Project

The Laboratory Measurement of the Sound Reduction Index of Various Louvres

Prepared for

Sound Planning Ltd.

By

George Thomson

Published

12 May 2020

Appendix A - Test Procedure

Measurement of Sound Transmission in accordance with BS EN ISO 10140-2: 2010 – TP33

In the laboratory, airborne sound transmission is determined from the difference in sound pressure levels measured across a test sample installed between two reverberant rooms. The difference in measured sound pressure levels is corrected for the amount of absorption in the receiving room. The test is done under conditions which restrict the transmission of sound by paths other than directly through the sample. The source sound field is randomly incident on the sample.

The test sample is located and sealed in an aperture within the brick dividing wall between the two rectangular reverberant or acoustically "live" rooms, both of which are constructed from 215mm brick with reinforced concrete floors and roofs. The brick wall has dimensions of 3.9m wide x 2.9m high and forms the whole of the common area between the two rooms.

One of the rooms termed the source room has a volume of 55 cubic metres and is isolated by the use of resilient mountings and seals, from the surrounding structure and the adjoining room. The adjoining receiving room has a volume of 50 cubic metres.

Broad band noise is produced in the source room from an electronic generator, power amplifier and loudspeaker. The resulting sound pressure levels in both rooms are sampled, filtered into one third octave band widths, integrated and averaged by means of a Real Time Analyser using a microphone on an oscillating microphone boom. The value obtained at any particular frequency is known as the equivalent sound pressure level for either source or receiving rooms. The change in level across the test sample is termed the equivalent sound pressure level difference, i.e.

$$D = L_1 - L_2$$

where

D is the equivalent Sound Pressure level difference in dB

L₁ is the equivalent Sound Pressure level in the source room in dB

L₂ is the equivalent Sound Pressure level in the receiving room in dB

The Sound Reduction Index (R), also known by the American terminology Sound Transmission Loss, is defined as the number of decibels by which sound energy randomly incident on the test sample is reduced in transmitting through it and is given by the formula:

$$R = D + 10 \log_{10} \frac{S}{A} \dots \text{in decibels}$$

where

- S is the area of the sample
- A is the total absorption in the receiving room
- both dimensions being in consistent units

The Sound Reduction Index is an expression of the laboratory sound transmission performance of a particular element or construction. It is a function of the mass, thickness, sealing method of mounting etc., and is independent of the overall area of the sample.

However, when an example of this construction is installed on site, the sound insulation obtained will depend upon its surface area, as well as the absorption in the receiving room. The larger the area the greater the sound energy transmitted. Also, the overall sound insulation is affected by the sound transmission through other building elements, some of which may have an inferior performance to the sample tested. In practice, therefore, the potential sound reduction index of a construction is not fully realised on site. Furthermore, the sound reduction index of a particular sample of that construction can only be measured accurately in a laboratory, because only under such controlled conditions can the sound transmission path be limited to the sample under test.

R_w , C and C_{tr} have been calculated in accordance with the relevant section of
BS EN ISO 717-1:2013 from the results of laboratory tests carried out in accordance with
BS EN ISO 10140-2:2010.

Appendix B – Measurement Uncertainty

BS EN ISO 10140-2: 2010 – TP33

The following values of uncertainty are based on a standard uncertainty multiplied by a coverage factor of $k = 2$, which provides a level of confidence of approximately 95%.

Frequency, Hz	Uncertainty, $\pm$ dB
100	3.2
125	2.9
160	2.5
200	2.5
250	1.8
315	1.8
400	1.5
500	1.5
630	1.2
800	1.2
1000	1.2
1250	1.2
1600	1.2
2000	1.2
2500	1.2
3150	1.2
Temperature	± 0.8 °C
Humidity	± 10 %RH
Static Pressure	± 1 mbar

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