



INVESTOR IN PEOPLE

Technical Report

Report Number C/07/5L/20123/R01a
supersedes SRL report C/07/5L/20123/R01

Date 11 March 2008

Project

**The Laboratory Determination of
The Random Incidence Sound
Absorption Coefficient of
Various Ceiling Tiles**

Prepared for

**Rockfon
Rockwool A/S
Hovedgaden 501
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By

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0444

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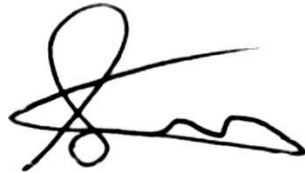
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1.0 Summary

Tests have been done in SRL's Laboratory at Holbrook House, Sudbury, Suffolk, to determine the random incidence sound absorption coefficient of various ceiling tiles in accordance with BS EN ISO 354:2003.

From these measurements the required results have been derived and are presented in both tabular and graphic form in Data Sheets 1 to 7.

The results are given in 1/3rd octave bands over the frequency range 50Hz to 10kHz, which is beyond that required by the test standard. Measurements outside the standard frequency range are not UKAS accredited.



.....
Allen Smalls
Laboratory Manager
Quality Manager



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Trevor Hickman
Executive Consultant
Deputy Technical Manager

For and on behalf of
Sound Research Laboratories Ltd



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2.0 Details of Measurements

2.1 Location

Sound Research Laboratories Ltd
Holbrook House
Little Waldingfield
Sudbury
Suffolk
CO10 0TH

2.2 Test Dates

23 January 2008

2.3 Instrumentation and Apparatus Used

Make	Description	Type
E D I	Microphone Multiplexer Microphone Power Supply Unit	
Norwegian Electronics	Real Time Analyser	830
Brüel & Kjaer	12mm Condenser Microphones Windshields Pre Amplifiers Microphone Calibrator Omnipower Sound Source	4166 UA0237 2639, 2669C 4231 4296
Larson Davis	12mm Condenser Microphone	2560
Darton	Fortin Barometer	P411
Thermo Hygro	Temperature & Humidity Probe	
TOA	Graphic Equalizer Power Amplifier	E-1231 DPA-800

2.4 References

- | | |
|----------------------|---|
| BS EN ISO 11654:1997 | Sound absorbers for use in buildings.
Rating of sound absorption. |
| BS EN ISO 354:2003 | Measurement of sound absorption in a
reverberation room |
| ASTM C423-01 | Sound Absorption and Sound Absorption
Coefficient by the Reverberation Room
Method. |

2.5 Personnel Present

- | | |
|-------------|---------|
| Tim Spencer | Rockfon |
|-------------|---------|

3.0 Description of Test

3.1 Description of Sample

Various ceiling tiles, details in datasheets and in section 4.0.

The mounting conditions referred to in section 4.0 are taken from BS EN ISO 354:2003.

Appendix 3 contains the clients sampling forms for the products tested.

Sampling plan: Selected at random.

Sample condition: New.

Details supplied by: Rockfon.

Sample installed by: Rockfon.

3.2 Sample Delivery date

22 January 2008

3.3 Test Procedures

The sample was mounted/located and tested in accordance with the relevant standard. The method and procedure is described in Appendix 1. The measurement uncertainty is given in Appendix 2.

4.0 Results

The results of the measurements and subsequent analysis are given in Data Sheets 1 to 7 and summarised below.

Results relate only to the items tested.

SRL Test No.	Description in Brief	α_w	Mounting Condition
2	20mm Sonar 1200x600x20mm Production code 748513	1.00	E-200
3	Sonar Plan (Smooth) 1200x600x20mm Production code 749111	1.00	E-200
4	Sonar Activity 1200x600x40mm Production code 748513	1.00	E-200
5	Sonar Activity Plan (smooth) 1200x600x40mm Production code 749111	1.00	E-200
6	Sonar 1200x600x20mm Production code 802431	1.00	E-220
7	Sonar Activity 1200x600x40mm Production code 748513	0.95	A
8	Sonar Activity Plan (smooth) 1200x600x40mm Production code 749111	0.90	A

————— *End of Text* —————

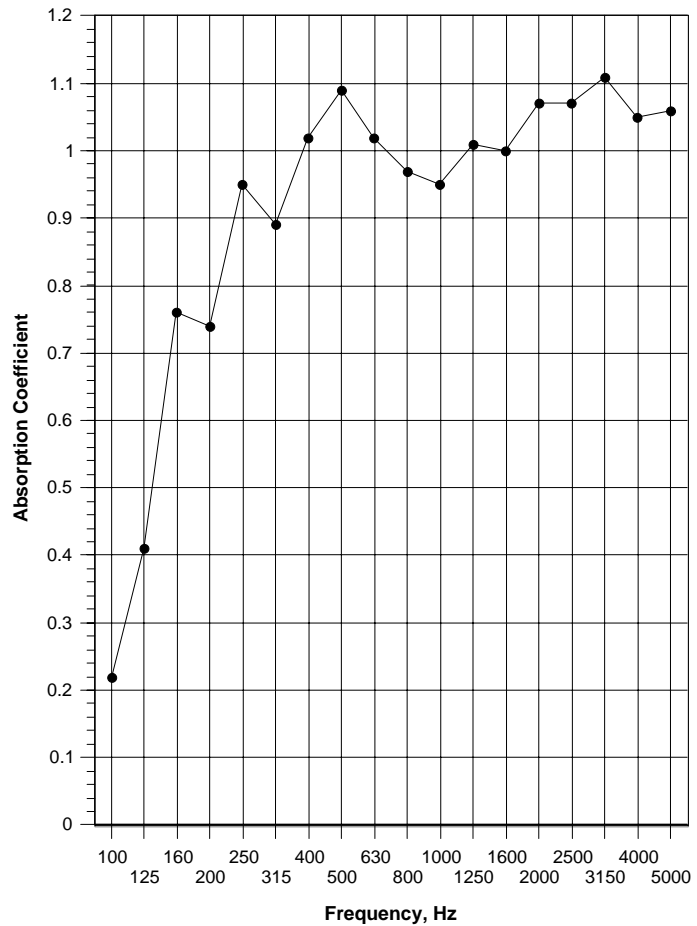
[Data Sheet 1](#)

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: **Rockfon**
 Test Date: 23/01/2008
 Empty Room: Temperature: 18.9 °C Humidity: 51 %RH Pressure: 1020 mbar
 Room with Sample: Temperature: 19.4 °C Humidity: 47 %RH Pressure: 1020 mbar
 Sample: **20mm Sonar 1200x600x20mm**
 Description: **Production code 748513**
 Sample Area: 12.96 m²
 Mounting Type: **E-200**
 Chamber Volume: 300 m³

Test 2				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.82	-0.01	
63*	4.01	2.85	0.38	n/a
80*	4.67	3.55	0.25	
100	6.34	4.63	0.22	
125	6.74	3.87	0.41	0.45
160	6.64	2.82	0.76	
200	7.16	2.96	0.74	
250	7.01	2.51	0.95	0.85
315	6.39	2.53	0.89	
400	6.02	2.27	1.02	
500	5.34	2.09	1.09	1.00
630	5.03	2.12	1.02	
800	5.39	2.24	0.97	
1000	5.74	2.33	0.95	1.00
1250	5.59	2.22	1.01	
1600	5.23	2.17	1.00	
2000	4.55	1.97	1.07	1.00
2500	3.97	1.84	1.07	
3150	3.31	1.65	1.11	
4000	2.64	1.49	1.05	1.00
5000	2.08	1.28	1.06	
6300*	1.52	1.06	0.98	
8000*	1.14	0.85	0.98	n/a
10000*	0.80	0.65	0.88	
A_w			1.00	
Class A				
Calculated to EN ISO 11654:1997				
NRC			1.00	
Calculated to ASTM C 423-01				
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				

Sound Absorption Coefficient



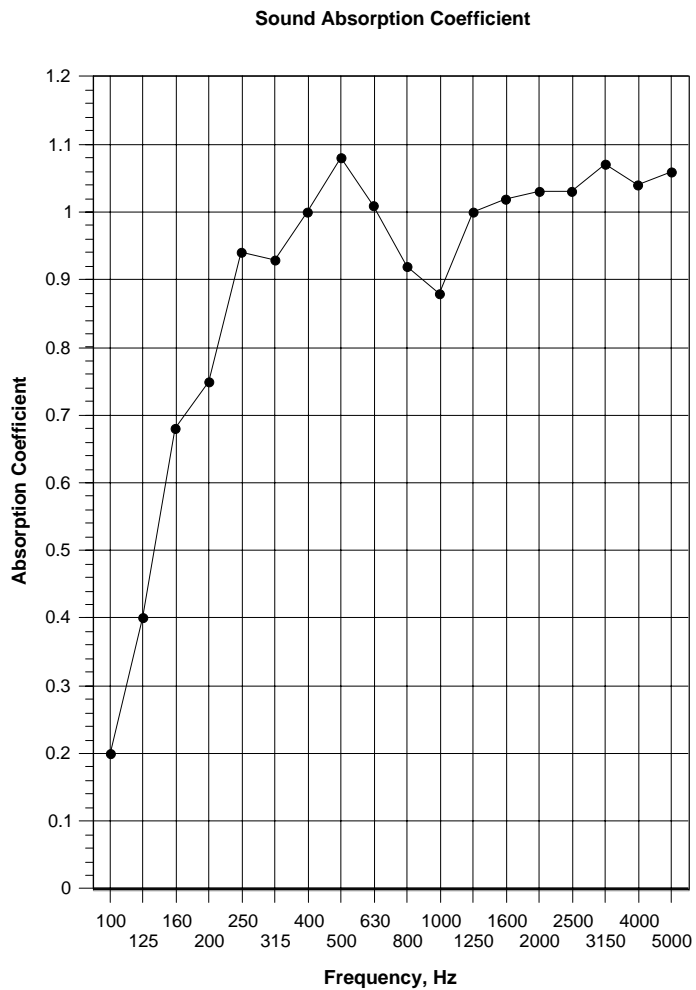
Practical absorption coefficient, BS EN ISO 11654:1997

v2

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: **Rockfon**
 Test Date: **23/01/2008**
 Empty Room: **Temperature: 18.9 °C Humidity: 51 %RH Pressure: 1020 mbar**
 Room with Sample: **Temperature: 19.3 °C Humidity: 47 %RH Pressure: 1020 mbar**
 Sample: **Sonar Plan (Smooth) 1200x600x20mm**
 Description: **Production code 749111**
 Sample Area: **12.96 m²**
 Mounting Type: **E-200**
 Chamber Volume: **300 m³**

Test 3				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.78	0.00	
63*	4.01	3.01	0.31	n/a
80*	4.67	3.34	0.32	
100	6.34	4.71	0.20	
125	6.74	3.90	0.40	0.45
160	6.64	3.00	0.68	
200	7.16	2.93	0.75	
250	7.01	2.53	0.94	0.85
315	6.39	2.46	0.93	
400	6.02	2.30	1.00	
500	5.34	2.10	1.08	1.00
630	5.03	2.13	1.01	
800	5.39	2.31	0.92	
1000	5.74	2.44	0.88	0.95
1250	5.59	2.23	1.00	
1600	5.23	2.15	1.02	
2000	4.55	2.01	1.03	1.00
2500	3.97	1.88	1.03	
3150	3.31	1.68	1.07	
4000	2.64	1.50	1.04	1.00
5000	2.08	1.28	1.06	
6300*	1.52	1.04	1.04	
8000*	1.14	0.85	0.97	n/a
10000*	0.80	0.66	0.78	
<i>A_w</i> 1.00				
Class A				
Calculated to EN ISO 11654:1997				
NRC 1.00				
Calculated to ASTM C 423-01				
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				



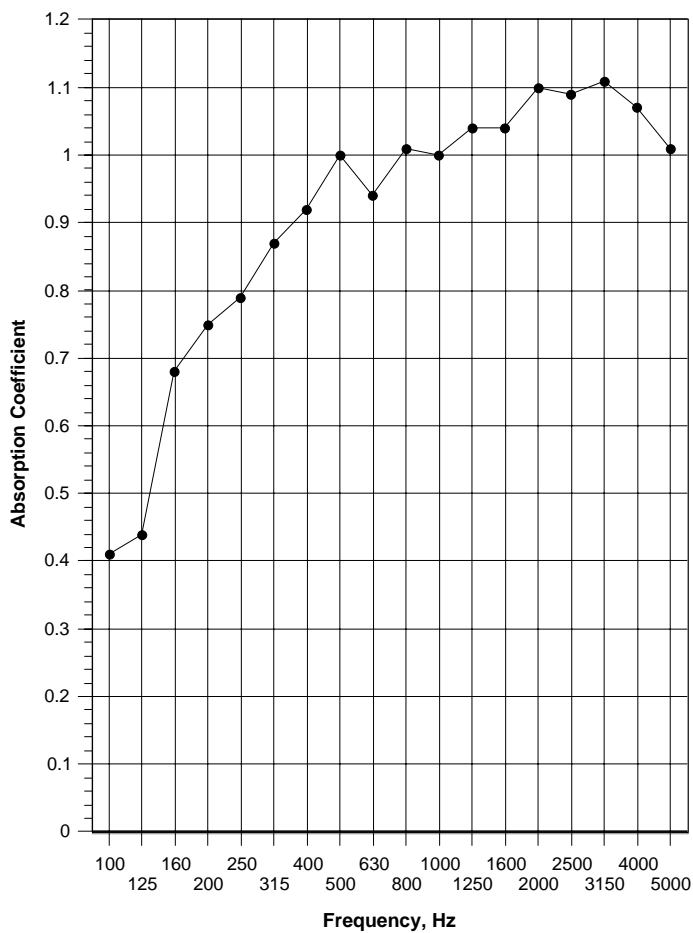
Practical absorption coefficient, BS EN ISO 11654:1997

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: [Rockfon](#)
 Test Date: 23/01/2008
 Empty Room: Temperature: 18.9 °C Humidity: 51 %RH Pressure: 1020 mbar
 Room with Sample: Temperature: 19.2 °C Humidity: 47 %RH Pressure: 1020 mbar
 Sample: [Sonar Activity 1200x600x40mm](#)
 Description: [Production code 748513](#)
 Sample Area: 12.96 m²
 Mounting Type: [E-200](#)
 Chamber Volume: 300 m³

Test 4				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.73	0.02	
63*	4.01	2.69	0.46	n/a
80*	4.67	3.07	0.42	
100	6.34	3.73	0.41	
125	6.74	3.74	0.44	0.50
160	6.64	3.00	0.68	
200	7.16	2.93	0.75	
250	7.01	2.82	0.79	0.80
315	6.39	2.56	0.87	
400	6.02	2.42	0.92	
500	5.34	2.20	1.00	0.95
630	5.03	2.22	0.94	
800	5.39	2.20	1.01	
1000	5.74	2.26	1.00	1.00
1250	5.59	2.18	1.04	
1600	5.23	2.12	1.04	
2000	4.55	1.94	1.10	1.00
2500	3.97	1.83	1.09	
3150	3.31	1.65	1.11	
4000	2.64	1.48	1.07	1.00
5000	2.08	1.30	1.01	
6300*	1.52	1.07	0.93	
8000*	1.14	0.89	0.77	n/a
10000*	0.80	0.67	0.68	
α_w		1.00		
Class A		Calculated to EN ISO 11654:1997		
NRC		0.95		
		Calculated to ASTM C 423-01		
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				

Sound Absorption Coefficient

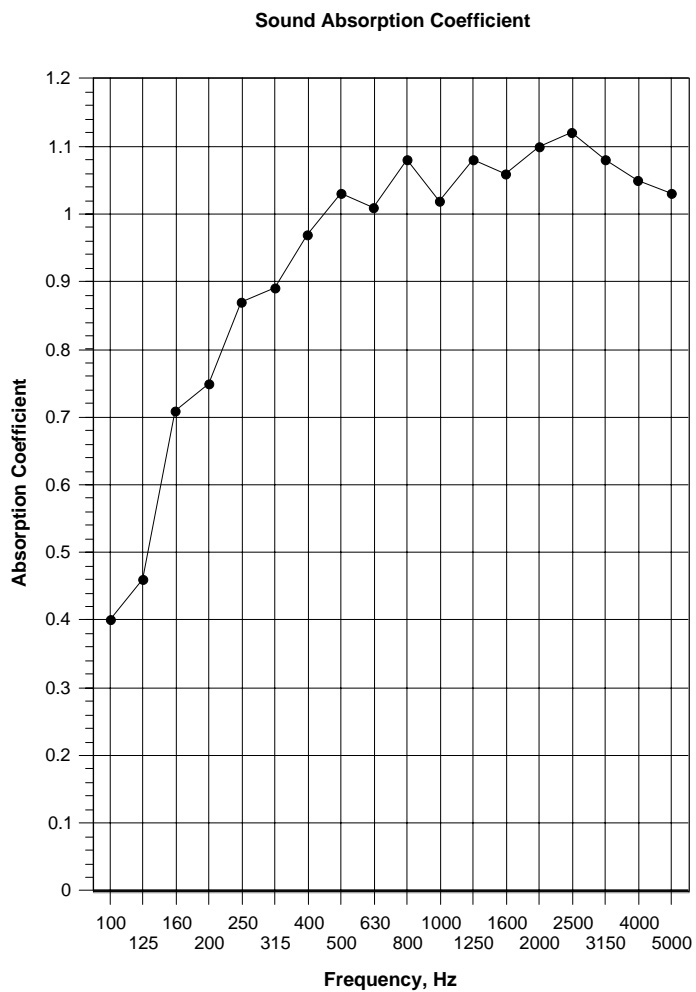


Practical absorption coefficient, BS EN ISO 11654:1997

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: **Rockfon**
 Test Date: 23/01/2008
 Empty Room: Temperature: 18.9 °C Humidity: 51 %RH Pressure: 1020 mbar
 Room with Sample: Temperature: 19.2 °C Humidity: 48 %RH Pressure: 1020 mbar
 Sample: **Sonar Activity Plan (smooth) 1200x600x40mm**
 Description: **Production code 749111**
 Sample Area: 12.96 m²
 Mounting Type: **E-200**
 Chamber Volume: 300 m³

Test 5				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.60	0.05	
63*	4.01	2.72	0.44	n/a
80*	4.67	3.01	0.44	
100	6.34	3.79	0.40	
125	6.74	3.69	0.46	0.50
160	6.64	2.94	0.71	
200	7.16	2.94	0.75	
250	7.01	2.66	0.87	0.85
315	6.39	2.54	0.89	
400	6.02	2.35	0.97	
500	5.34	2.16	1.03	1.00
630	5.03	2.13	1.01	
800	5.39	2.11	1.08	
1000	5.74	2.23	1.02	1.00
1250	5.59	2.13	1.08	
1600	5.23	2.10	1.06	
2000	4.55	1.94	1.10	1.00
2500	3.97	1.80	1.12	
3150	3.31	1.68	1.08	
4000	2.64	1.50	1.05	1.00
5000	2.08	1.30	1.03	
6300*	1.52	1.06	1.00	
8000*	1.14	0.87	0.91	n/a
10000*	0.80	0.67	0.75	
α_w			1.00	
Class A				
Calculated to EN ISO 11654:1997				
NRC			1.00	
Calculated to ASTM C 423-01				
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				



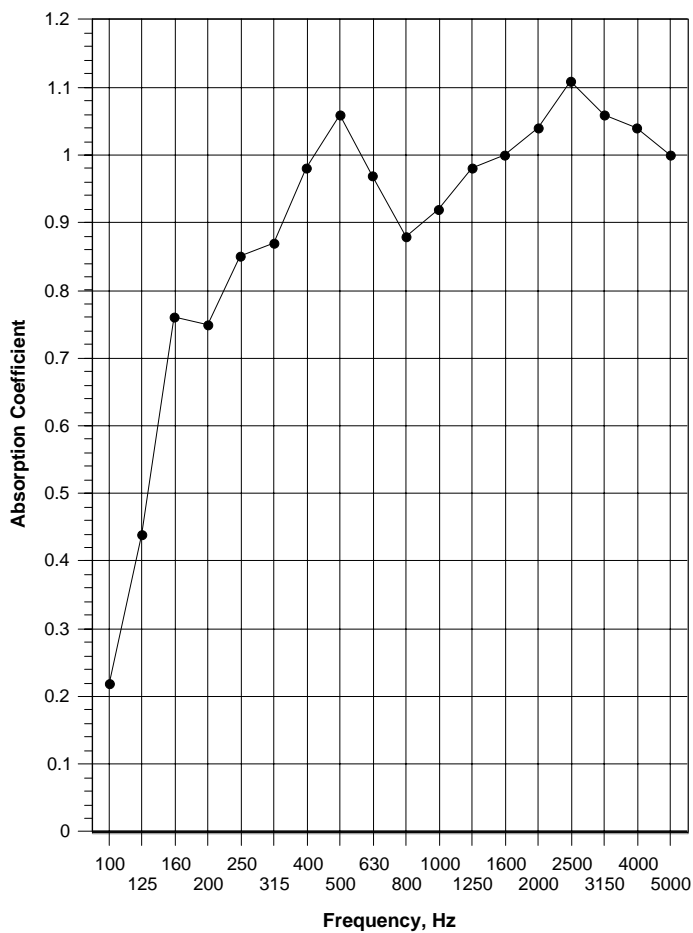
Practical absorption coefficient, BS EN ISO 11654:1997

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: **Rockfon**
 Test Date: **23/01/2008**
 Empty Room: **Temperature:** 18.9 °C **Humidity:** 51 %RH **Pressure:** 1020 mbar
 Room with Sample: **Temperature:** 19.1 °C **Humidity:** 49 %RH **Pressure:** 1020 mbar
 Sample **Sonar 1200x600x20mm**
 Description: **Production code 802431**
 Sample Area: **12.96 m²**
 Mounting Type: **E-220**
 Chamber Volume: **300 m³**

Test 6				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.88	-0.02	
63*	4.01	3.01	0.31	n/a
80*	4.67	3.42	0.29	
100	6.34	4.60	0.22	
125	6.74	3.75	0.44	0.45
160	6.64	2.83	0.76	
200	7.16	2.93	0.75	
250	7.01	2.70	0.85	0.80
315	6.39	2.56	0.87	
400	6.02	2.33	0.98	
500	5.34	2.12	1.06	1.00
630	5.03	2.18	0.97	
800	5.39	2.37	0.88	
1000	5.74	2.38	0.92	0.95
1250	5.59	2.26	0.98	
1600	5.23	2.18	1.00	
2000	4.55	2.00	1.04	1.00
2500	3.97	1.82	1.11	
3150	3.31	1.70	1.06	
4000	2.64	1.51	1.04	1.00
5000	2.08	1.32	1.00	
6300*	1.52	1.08	0.96	
8000*	1.14	0.92	0.71	n/a
10000*	0.80	0.69	0.64	
<i>A_w</i> 1.00				
Class A				
Calculated to EN ISO 11654:1997				
NRC 0.95				
Calculated to ASTM C 423-01				
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				

Sound Absorption Coefficient



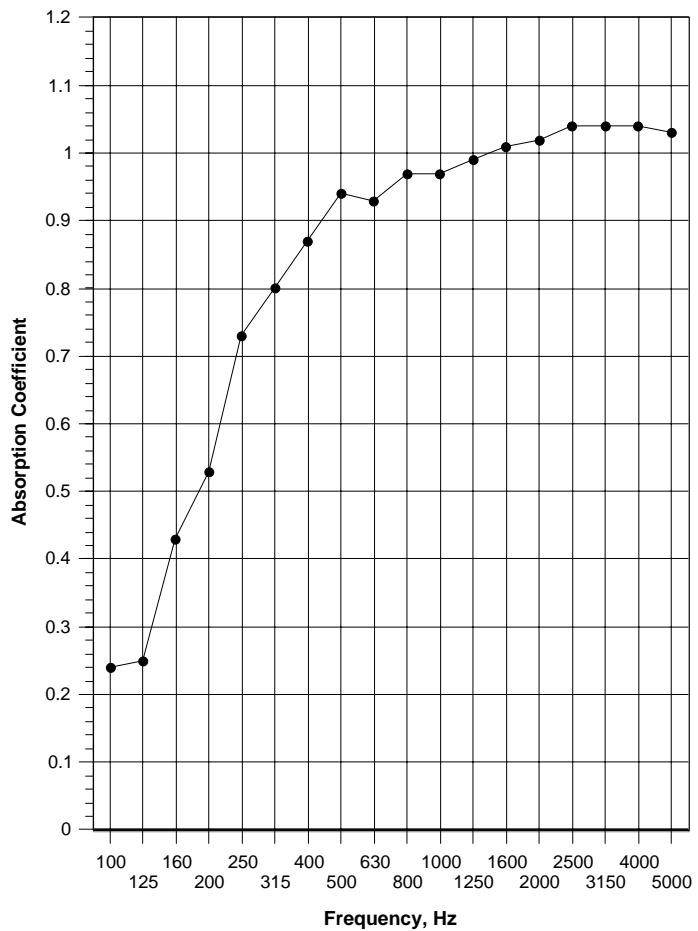
Practical absorption coefficient, BS EN ISO 11654:1997

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: [Rockfon](#)
 Test Date: 23/01/2008
 Empty Room: Temperature: 18.9 °C Humidity: 51 %RH Pressure: 1020 mbar
 Room with Sample: Temperature: 19.1 °C Humidity: 49 %RH Pressure: 1020 mbar
 Sample: [Sonar Activity 1200x600x40mm](#)
 Description: [Production code 748513](#)
 Sample Area: 12.96 m²
 Mounting Type: [A](#)
 Chamber Volume: 300 m³

Test 7				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.62	0.05	
63*	4.01	3.90	0.03	n/a
80*	4.67	4.02	0.13	
100	6.34	4.53	0.24	
125	6.74	4.63	0.25	0.30
160	6.64	3.78	0.43	
200	7.16	3.55	0.53	
250	7.01	2.95	0.73	0.70
315	6.39	2.70	0.80	
400	6.02	2.50	0.87	
500	5.34	2.28	0.94	0.90
630	5.03	2.23	0.93	
800	5.39	2.25	0.97	
1000	5.74	2.31	0.97	1.00
1250	5.59	2.25	0.99	
1600	5.23	2.17	1.01	
2000	4.55	2.02	1.02	1.00
2500	3.97	1.88	1.04	
3150	3.31	1.71	1.04	
4000	2.64	1.51	1.04	1.00
5000	2.08	1.31	1.03	
6300*	1.52	1.09	0.92	
8000*	1.14	0.90	0.81	n/a
10000*	0.80	0.69	0.64	
α_w			0.95	
Class A				
Calculated to EN ISO 11654:1997				
NRC			0.90	
Calculated to ASTM C 423-01				
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				

Sound Absorption Coefficient



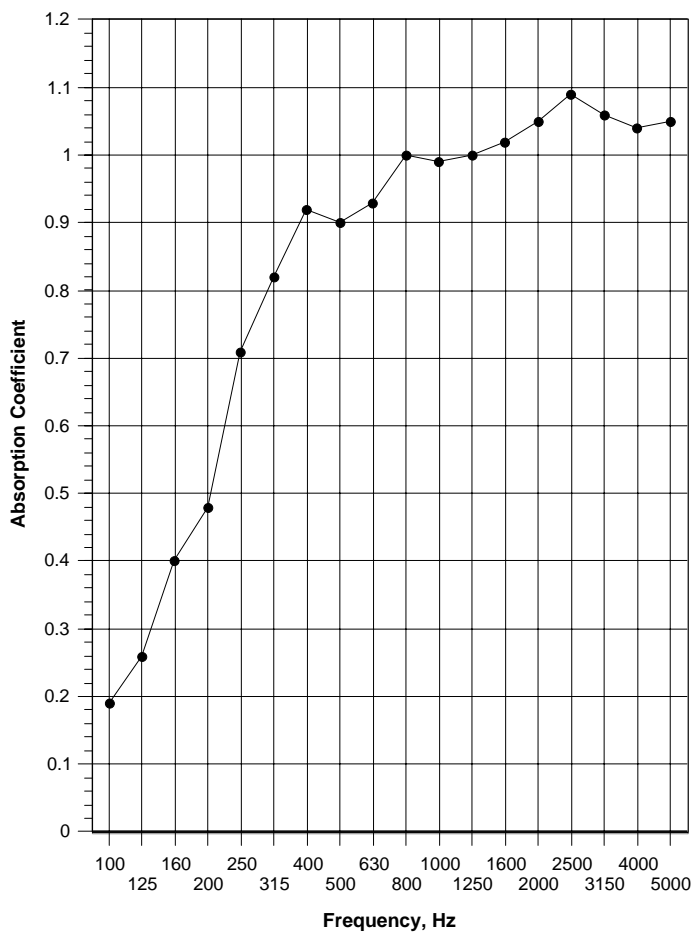
Practical absorption coefficient, BS EN ISO 11654:1997

The Laboratory Measurement of Random Incidence Sound Absorption to BS EN ISO 354:2003

Client: [Rockfon](#)
 Test Date: 23/01/2008
 Empty Room: Temperature: 18.9 °C Humidity: 51 %RH Pressure: 1020 mbar
 Room with Sample: Temperature: 19.1 °C Humidity: 50 %RH Pressure: 1020 mbar
 Sample: [Sonar Activity Plan \(smooth\) 1200x600x40mm](#)
 Description: [Production code 749111](#)
 Sample Area: 12.96 m²
 Mounting Type: [A](#)
 Chamber Volume: 300 m³

Test 8				
Freq Hz	T1 sec	T2 sec	Absorp Coeff	Practical Absorp Coeff #
50*	3.80	3.83	-0.01	
63*	4.01	3.75	0.06	n/a
80*	4.67	4.14	0.10	
100	6.34	4.77	0.19	
125	6.74	4.61	0.26	0.30
160	6.64	3.90	0.40	
200	7.16	3.72	0.48	
250	7.01	3.00	0.71	0.65
315	6.39	2.66	0.82	
400	6.02	2.42	0.92	
500	5.34	2.33	0.90	0.90
630	5.03	2.23	0.93	
800	5.39	2.21	1.00	
1000	5.74	2.28	0.99	1.00
1250	5.59	2.24	1.00	
1600	5.23	2.15	1.02	
2000	4.55	2.00	1.05	1.00
2500	3.97	1.84	1.09	
3150	3.31	1.70	1.06	
4000	2.64	1.52	1.04	1.00
5000	2.08	1.31	1.05	
6300*	1.52	1.09	0.95	
8000*	1.14	0.89	0.90	n/a
10000*	0.80	0.67	0.87	
α_w			0.90	
Class A				
Calculated to EN ISO 11654:1997				
NRC			0.90	
Calculated to ASTM C 423-01				
* Denotes frequencies outside the range covered by BS EN ISO 354:2003				
T1, empty room reverberation time				
T2, room reverberation time with sample				

Sound Absorption Coefficient



Practical absorption coefficient, BS EN ISO 11654:1997

Appendix 1

Test Procedure

Measurements of Random Incidence Sound Absorption Coefficients to BS EN ISO 354:2003 - TP14 (Plane Absorbers)

In the laboratory, random incidence sound absorption coefficients are determined from the rate of decay of a sound field in a reverberation room, with and without a test sample installed. The rate of decay is described by the time a sound field takes to decay by 60dB, known as the reverberation time.

The reverberation room is constructed from 215mm brick, which is internally plastered with a reinforced concrete roof and floor. The room is rectangular and has a volume of 300 cubic metres and a total surface area of 275m². From the ceiling hang 10 randomly positioned diffusers, each measuring 1.2m x 2.14m. The room is isolated from the surrounding structure by the use of resilient mountings and seals, ensuring good acoustic isolation.

Using at least two omnidirectional loudspeaker positions, broad band random noise is produced in the room using an electronic generator and power amplifier. When the amplification system is switched off, the decay of sound is filtered into one-third octave band widths and the reverberation times measured. This process is repeated for each of six microphone positions and the values arithmetically averaged to obtain a final value for each frequency.

The sample, which has an area between 10m² and 15.7m² is then laid over a pre-assembled laboratory test rig positioned on the floor of the reverberation room so that no part of it is closer than one metre from any edge of the boundaries. The test rig provides a space beneath the sample, the depth of which can be varied to simulate specific requirements such as the void above a suspended ceiling system. The procedure of measuring the reverberation times then repeated.

The sound absorption coefficients are calculated from the difference in decay rates for each frequency according to the formula:

$$a_s = \frac{A_t}{S}$$

where

- a_s is the random incidence absorption coefficient
- A_t is the increase in equivalent sound absorption area of the test specimen (m²)
- S is the area covered by the test specimen (m²)

The equivalent absorption area of the test specimen is further defined as:

$$A_T = 55.3V\left(\frac{1}{c_2T_2} - \frac{1}{c_1T_1}\right) - 4V(m_2 - m_1)$$

where

- V is the volume of the empty reverberation room (m^3)
- c_1 is the speed of sound in the empty room (m/sec)
- T_1 is the reverberation time in the empty room (sec)
- m_1 is the power attenuation coefficient calculated according to ISO 9613-1 using the climatic conditions that have been present in the empty rooms during the measurement.

c_2 , T_2 and m_2 have the same meanings as c_1 , T_1 and m_1 but with the test specimen in the room.

It is occasionally found that the absorption coefficient derived in this manner reaches a value greater than unity. This is impossible, by definition, and investigation has shown that this anomaly is due to diffraction of the impinging sound waves at the edges of the sample. In practical terms this is insignificant.

Appendix 2

Measurement Uncertainty BS EN 20354:1993, ISO 354 - TP14

1. Introduction

The estimated 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%.

Table 1: Uncertainty For Equivalent Absorption Area Measurement

Frequency, Hz	Expanded uncertainty K = 2, 95% % of A ₁ or A ₂
100	9.0
125	8.1
160	5.6
200	6.7
250	4.3
315	8.1
400	4.6
500	5.0
630	5.3
800	3.2
1000	3.5
1250	3.1
1600	2.8
2000	2.7
2500	2.2
3150	1.8
4000	1.6
5000	1.6

2. Estimation of Expanded Uncertainty For Sample Equivalent Sound Absorption Area

The expanded uncertainty, U_{A,m^2} is estimated by using the following formulae:-

$$U_A = \sqrt{\left(\frac{uA_1}{100}\right)^2 + \left(\frac{uA_2}{100}\right)^2}$$

where	U_A	is the expanded uncertainty for the sample equivalent sound absorption area, for $K = 2$, 95%, m^2
	u	is the estimated expanded uncertainty for the equivalent sound absorption area, taken from Table 1 above, $K = 2$, 95%, % of A_1 or A_2
	A_1	is the equivalent sound absorption area of the empty room, m^2
	A_2	is the equivalent sound absorption area of the room with the sample, m^2

3. Estimation of expanded Uncertainty For Sound Absorption Coefficients

The expanded uncertainty for sound absorption coefficients, U_{a_s} , is estimated using the following formulae:-

$$U_{a_s} = \frac{a_s U_A}{A}$$

where	U_{a_s}	is the expanded uncertainty for sound absorption coefficients, $K=2$, 95%
	a_s	is the sound absorption coefficient
	U_A	is the expanded uncertainty for the sample equivalent sound absorption area, $K=2$, 95%, m^2
	A	is the sample equivalent sound absorption area, m^2

Appendix 3 - Sampling Forms



**BELGIAN CONSTRUCTION CERTIFICATION ASSOCIATION asbl
BCCA**

Founded by : BBRI and SECO

SAMPLING FORM

Sampling is done by the manufacturer based on a prearranged sampling plan. Data concerning identification and traceability are handed over by the manufacturer to BCCA.

Product:	mineral wool, suspended ceiling membrane	Mark:	CE
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File n° BCCA:	BC1-533-1817	Sampling n°:	Gjall - Sound Absorption
Representative:	Jan Verbeke	Date:	08/01/2008
		Location:	Cigacice (PL)
		Visit n°:	

Manufacturer:	Rockwool Polska Sp. z o.o	Contact person:	Mr. Artur Nehring
address:	u.l. Kwiatowa 14 66 131 Cigacice Poland	Tel.:	0048 68 38 50 250
		Fax:	0048 68 38 50 511
		Email:	artur.nehring@rockwool.pl

Nature of samples:	Dimensions:	Production date: (production code)	Identification:
SONAR 8.000.01 PL	1200 x 600 x 20 mm, ± 15m²	8024.. (10/01/2008)	

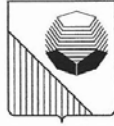
Tests	Test method	Number of tests	Remarks
Sound Absorption	EN ISO 354 : 2003	1	

Laboratory:	Sound Research Laboratories Ltd., att. Allen Smalls, Suffolk, UK
Test reports available before:	
Invoice must be send to:	Rockfon, Rockwool A/S, Hovedgaden 501, DK - 2640 Hedehusene
Number of reports (+ language):	1 (language = ENGLISH)
Reports must be send to:	Mr. Thomas Nellemose (Rockfon, Rockwool A/S in Hedehusene)
Remarks:	

Representative BCCA:	Manufacturer: (2) for approval	Carrier: (3) For execution of the mission	Laboratory: (4) For reception of the samples and acceptation of the execution
Name <i>Jan Verbeke</i>	Name <i>Thomas Nellemose</i>	Name	Name <i>A. SMALLS</i>
signature 	signature 	signature	signature
date <i>08/01/2008</i>	date <i>23.07.08</i>	date	date <i>23.1.08</i>

Remarks :

- (1) The laboratory shall follow the confidential rules, given in NBN EN 17025.
- (2) The producer accept by the signature of his delegate all modalities mentioned on this document. He will send an order form for ditto to the indicated laboratory.
- (3) The carrier of the sample confirms by his signature the delivering of the sample at the laboratory.
- (4) The laboratory confirms by the signature of his delegate the arrival of the sample, the test modalities and the term of execution of the tests. He will send within 7 days after arrival of the sample a copie of this document to SECO/BCCA
- (5) If the laboratory can not accept the mission, SECO/BCCA shall be informed within 4 days, so that the necessary actions can be taken.
- (6) The laboratory shall inform SECO/BCCA of every failure detected on the samples and every problem appearing during the handling and testing, as soon as possible.



BELGIAN CONSTRUCTION CERTIFICATION ASSOCIATION asbl BCCA

Founded by : BBRI and SECO

SAMPLING FORM

Sampling is done by the manufacturer based on a prearranged sampling plan. Data concerning identification and traceability are handed over by the manufacturer to BCCA.

Product:	mineral wool, suspended ceiling membrane		Mark:	CE
File n° BCCA:	BC1-533-1817	Sampling n°:	Gjall - Sound Absorption	
		Date:	08/01/2008	
Representative:	Jan Verbeke	Location:	Cigacice (PL)	
		Visit n°:		
Manufacturer:	Rockwool Polska Sp. z o.o	Contact person:	Mr. Artur Nehring	
address:	u.l. Kwiatowa 14 66 131 Cigacice Poland	Tel.:	0048 68 38 50 250	
		Fax:	0048 68 38 50 511	
		Email:	artur.nehring@rockwool.pl	
Nature of samples:	Dimensions:	Production date: (production code)	Identification:	
SONAR 8.000.01 PL	1200 x 600 x 20 mm, ± 15m ²	748513		
SONAR 8.000.01 PL	1200 x 600 x 40 mm, ± 15m ²	748513		
SONAR PLAN 8.000.07 PL	1200 x 600 x 20 mm, ± 15m ²	749111		
SONAR PLAN 8.000.07 PL	1200 x 600 x 40 mm, ± 15m ²	749111		
Tests	Test method	Number of tests	Remarks	
Sound Absorption	EN ISO 354 : 2003	4		
Laboratory:	Sound Research Laboratories Ltd., att. Allen Smalls, Suffolk, UK			
Test reports available before:				
Invoice must be send to:	Rockfon, Rockwool A/S, Hovedgaden 501, DK - 2640 Hedehusene			
Number of reports (+ language):	1 (language = ENGLISH)			
Reports must be send to:	Mr. Thomas Nellemose (Rockfon, Rockwool A/S in Hedehusene)			
Remarks:				
Representative BCCA:	Manufacturer: (2) for approval	Carrier: (3) For execution of the mission	Laboratory: (4) For reception of the samples and acceptation of the execution	
Name <i>Jan Verbeke</i>	Name <i>Thomas Nellemose</i>	Name	Name <i>A. SMALLS</i>	
signature 	signature 	signature	signature 	
date <i>08/01/2008</i>	date <i>23.01.08</i>	date	date <i>23.1.08</i>	

Remarks:

- (1) The laboratory shall follow the confidential rules, given in NBN EN 17025.
- (2) The producer accept by the signature of his delegate all modalities mentioned on this document. He will send an order form for ditto to the indicated laboratory.
- (3) The carrier of the sample confirms by his signature the delivering of the sample at the laboratory.
- (4) The laboratory confirms by the signature of his delegate the arrival of the sample, the test modalities and the term of execution of the tests. He will send within 7 days after arrival of the sample a copie of this document to SECO/BCCA
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- (6) The laboratory shall inform SECO/BCCA of every failure detected on the samples and every problem appearing during the handling and testing, as soon as possible.

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