

AIRO

Report No. L/3220

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for
OÜ Saros EST
Oru 18A
20205 Narva
Estonia

Dated: 26 January 2012

**LABORATORY MEASUREMENTS
OF THE
SOUND ABSORPTION COEFFICIENTS
OF
PVC STRETCHED CEILINGS**

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**LABORATORY MEASUREMENTS
OF THE
SOUND ABSORPTION COEFFICIENTS
OF
PVC STRETCHED CEILINGS**

1. INTRODUCTION

This report presents the results of measurements made in the AIRO Acoustics Laboratory of the sound absorption of PVC Stretched Ceilings.

The measurements were made on 5 January 2012 for OÜ Saros EST.

Measurements of sound absorption, Sound Absorption Coefficient (α_s), were conducted in accordance with European Standard EN ISO 354 (ref 1). Single figure ratings of sound absorption performance, known as the Weighted Sound Absorption Coefficient (α_w) and Sound Absorption Class, are derived from these measurements in accordance with European Standard EN ISO 11654 (ref 2).

AIRO is a UKAS accredited testing laboratory No. 0483 and measurements to the above European Standards are included on our schedule of accreditation. UKAS is the United Kingdom Accreditation Service.

2. SUMMARY OF RESULTS

The results of the measurements presented in this report are summarised in the following table:

AIRO Test No.	Test Specimen	α_w	Class
L/3220/1	PVC Stretched Ceiling - Lacquered Finish	0.40 (M)	D
L/3220/2	PVC Stretched Ceiling - Matt Finish	0.30	D
L/3220/3	PVC Stretched Ceiling - Satin Finish	0.30	D

Approved by:

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Principal Consultant

M Sawyer

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Laboratory Supervisor

3. TEST SPECIMEN DETAILS AND CONDITIONS

3.1 PVC Stretched Ceiling - Lacquered Finish

Test No. L/3220/1

The test specimen covered a 3 m x 4 m area and comprised a PVC Stretched Ceiling with a Lacquered Finish. The PVC ceiling was supplied approximately 10% undersized and was stretched over the perimeter framework using heat. The 0.17 mm thick ceiling membrane was perforated with 0.1 mm holes on a 2 mm x 2 mm square grid. The perimeter framework consisted of a 45 mm x 45 mm timber batten and Saros aluminium universal profile No. 4 which supported the stretched ceiling inverted 72 mm above the test chamber floor. See the following drawing for details.

3.2 PVC Stretched Ceiling - Matt Finish

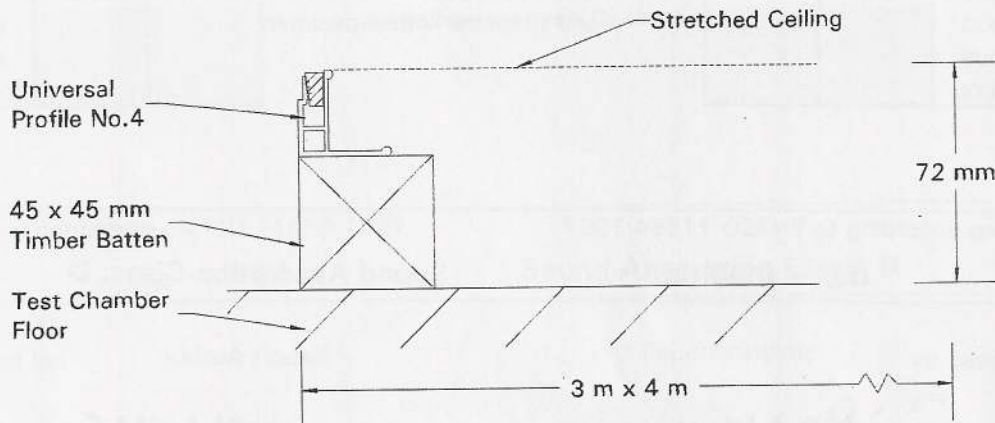
Test No. L/3220/2

The test specimen covered a 3 m x 4 m area and comprised a PVC Stretched Ceiling with a Matt Finish. The PVC ceiling was supplied approximately 10% undersized and was stretched over the perimeter framework using heat. The 0.17 mm thick ceiling membrane was perforated with 0.1 mm holes on a 2 mm x 2 mm square grid. The perimeter framework consisted of a 45 mm x 45 mm timber batten and Saros aluminium universal profile No. 4 which supported the stretched ceiling inverted 72 mm above the test chamber floor. See the following drawing for details.

3.3 PVC Stretched Ceiling - Satin Finish

Test No. L/3220/3

The test specimen covered a 3 m x 4 m area and comprised a PVC Stretched Ceiling with a Satin Finish. The PVC ceiling was supplied approximately 10% undersized and was stretched over the perimeter framework using heat. The 0.17 mm thick ceiling membrane was perforated with 0.1 mm holes on a 2 mm x 2 mm square grid. The perimeter framework consisted of a 45 mm x 45 mm timber batten and Saros aluminium universal profile No. 4 which supported the stretched ceiling inverted 72 mm above the test chamber floor. See the following drawing for details.

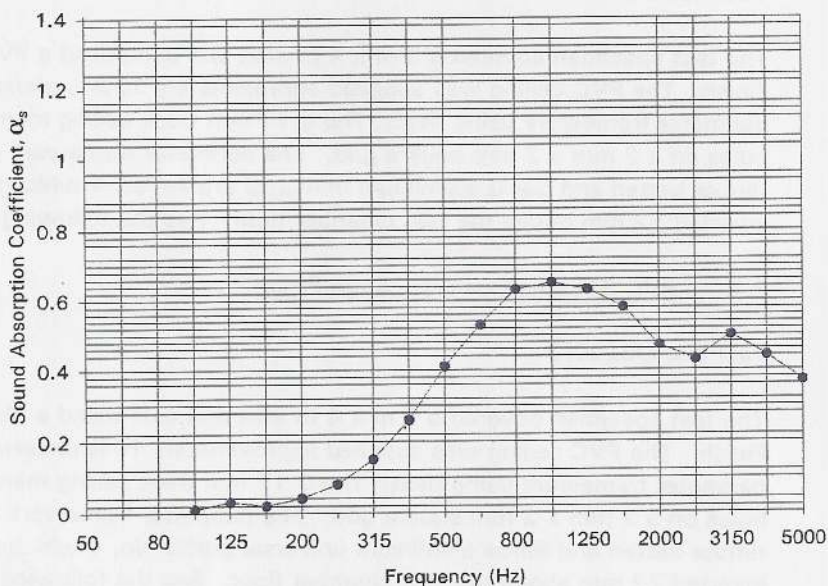


Sound Absorption Coefficient according to EN ISO 354:2003

Test No. L/3220/1 Date of Test: 5 January 2012
 Client: OÜ Saros EST
 Specimen: PVC Stretched Ceiling - Lacquered Finish
 Installed by: Edward Ray Contracts Limited on behalf of OÜ Saros EST
 Specimen area: 12.0 m² Mass per unit area: 221 g/m²

Chamber Conditions	Volume	Air Temperature	Relative Humidity	Air Pressure
Empty Chamber	221 m ³	12 °C	78%	992 mbar
Chamber with Specimen	221 m ³	11 °C	80%	987 mbar

Frequency (Hz)	α_s	α_p
50		
63		
80		
100	0.01	
125	0.03	0.00
160	0.02	
200	0.04	
250	0.08	0.10
315	0.15	
400	0.26	
500	0.41	0.40
630	0.53	
800	0.63	
1000	0.65	0.65
1250	0.63	
1600	0.58	
2000	0.47	0.50
2500	0.43	
3150	0.50	
4000	0.44	0.45
5000	0.37	
6300		
8000		
10000		



See Appendix A5 for Reverberation Times of Empty Chamber and Chamber with Specimen

Rating according to EN ISO 11654:1997

$\alpha_w = 0.40$ (M)

Sound Absorption Class: D

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Principal Consultant

M Sawyer

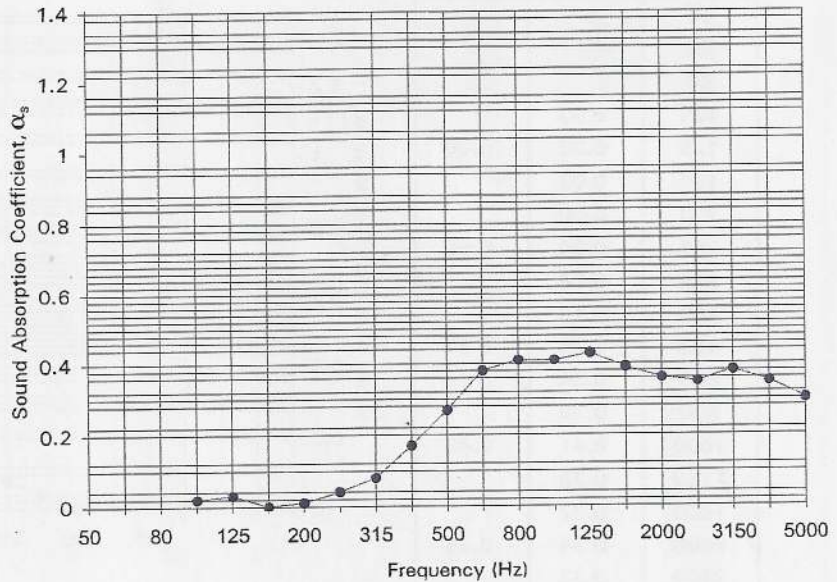
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Sound Absorption Coefficient according to EN ISO 354:2003

Test No. L/3220/2 Date of Test: 5 January 2012
 Client: OÜ Saros EST
 Specimen: PVC Stretched Ceiling - Matt Finish
 Installed by: Edward Ray Contracts Limited on behalf of OÜ Saros EST
 Specimen area: 12.0 m² Mass per unit area: 221 g/m²

Chamber Conditions	Volume	Air Temperature	Relative Humidity	Air Pressure
Empty Chamber	221 m ³	12°C	78%	992 mbar
Chamber with Specimen	221 m ³	13°C	78%	987 mbar

Frequency (Hz)	α_s	α_p
50		
63		
80		
100	0.02	
125	0.03	0.00
160	0.00	
200	0.01	
250	0.04	0.05
315	0.08	
400	0.17	
500	0.27	0.25
630	0.38	
800	0.41	
1000	0.41	0.40
1250	0.43	
1600	0.39	
2000	0.36	0.35
2500	0.35	
3150	0.38	
4000	0.35	0.35
5000	0.30	
6300		
8000		
10000		



See Appendix A5 for Reverberation Times of Empty Chamber and Chamber with Specimen

Rating according to EN ISO 11654:1997

$\alpha_w = 0.30$

Sound Absorption Class: D

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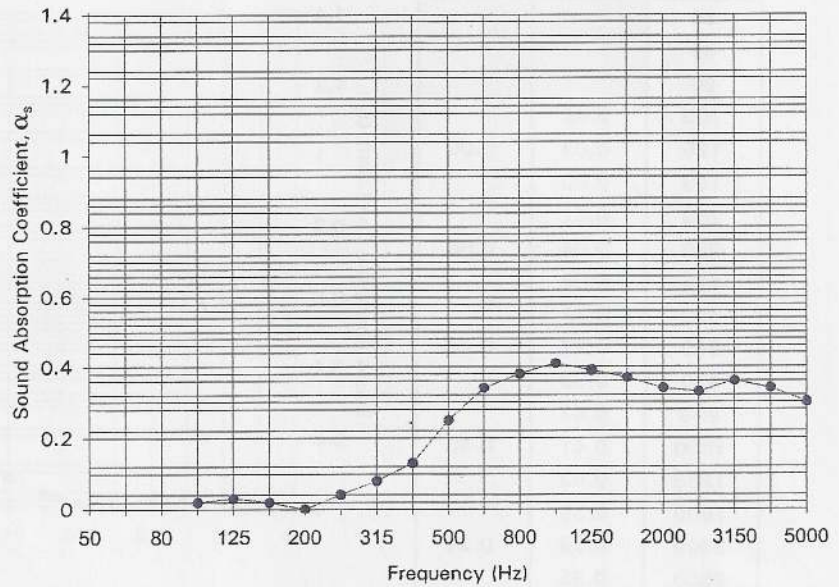
M Sawyer
 M Sawyer MIOA
Laboratory Supervisor

Sound Absorption Coefficient according to EN ISO 354:2003

Test No. L/3220/3 Date of Test: 5 January 2012
 Client: OÜ Saros EST
 Specimen: PVC Stretched Ceiling - Satin Finish
 Installed by: Edward Ray Contracts Limited on behalf of OÜ Saros EST
 Specimen area: 12.0 m² Mass per unit area: 221 g/m²

Chamber Conditions	Volume	Air Temperature	Relative Humidity	Air Pressure
Empty Chamber	221 m ³	12 °C	78%	992 mbar
Chamber with Specimen	221 m ³	13 °C	78%	990 mbar

Frequency (Hz)	α_s	α_p
50		
63		
80		
100	0.02	
125	0.03	0.00
160	0.02	
200	0.00	
250	0.04	0.05
315	0.08	
400	0.13	
500	0.25	0.25
630	0.34	
800	0.38	
1000	0.41	0.40
1250	0.39	
1600	0.37	
2000	0.34	0.35
2500	0.33	
3150	0.36	
4000	0.34	0.35
5000	0.30	
6300		
8000		
10000		



See Appendix A5 for Reverberation Times of Empty Chamber and Chamber with Specimen

Rating according to EN ISO 11654:1997

$\alpha_w = 0.30$ Sound Absorption Class: D

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