



SIA \*R & D AKUSTIKA\*

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**CUSTOMER: "CEWOOD" SIA (Latvia)**

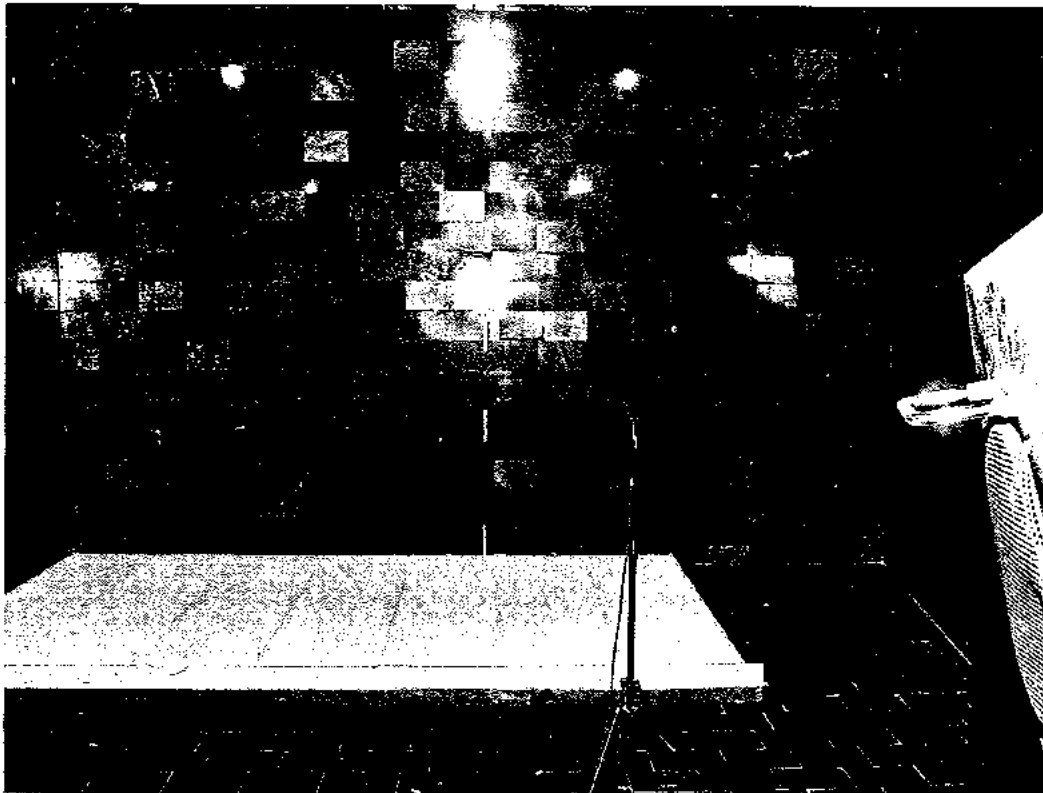
**"CONFIRM"**  
Chairmen of board "R & D Akustika" Ltd.

\_\_\_\_\_ / J. SAPROVSKIS /

December 09, 2016.

**Cemented wood wool panels sound  
absorption coefficient testing report**

**No 806 / 2016 – AL 8.4**



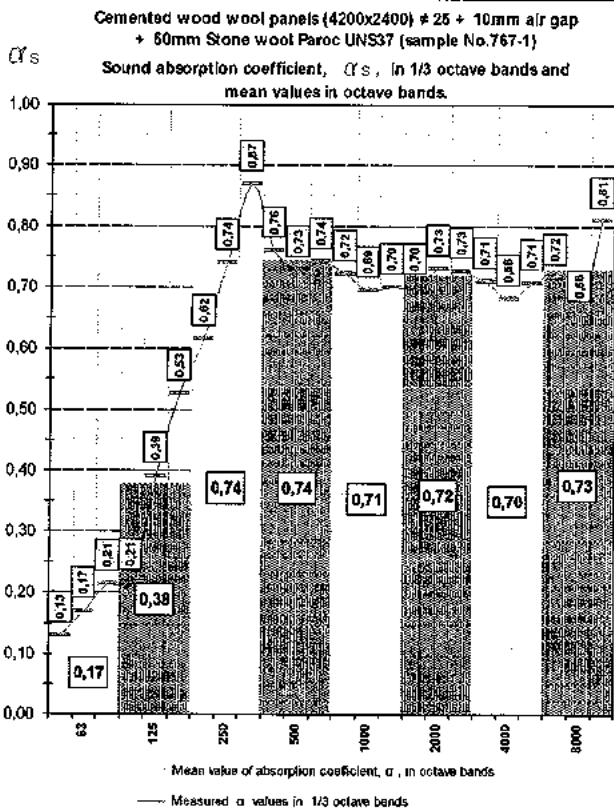


Fig. 13

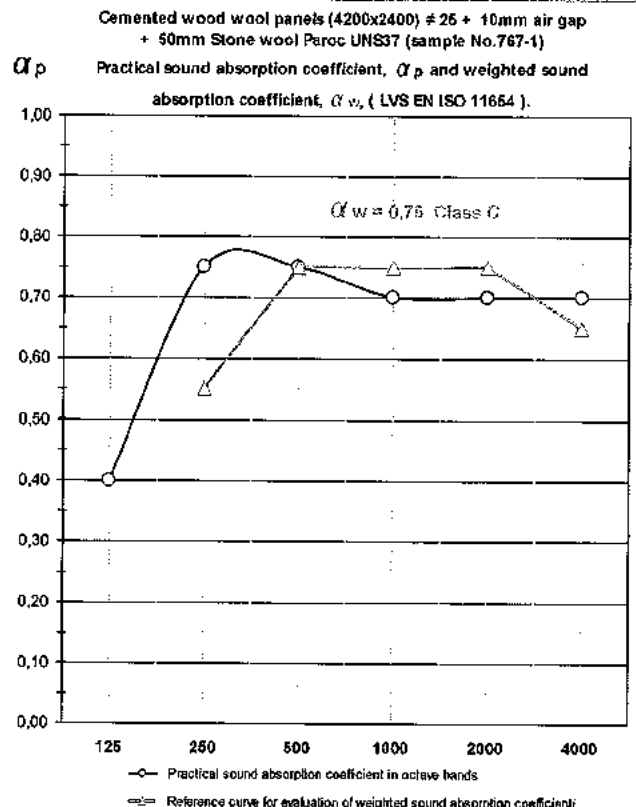


Fig. 14

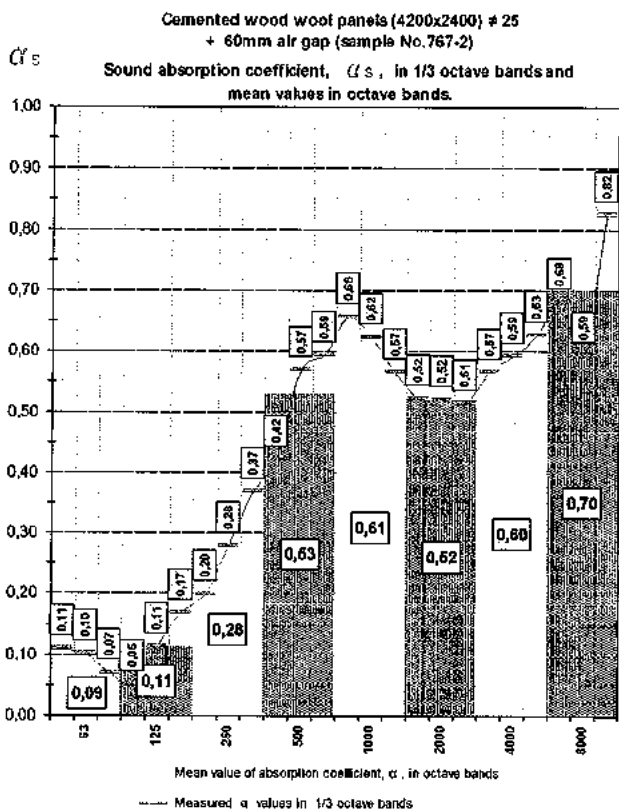


Fig. 15

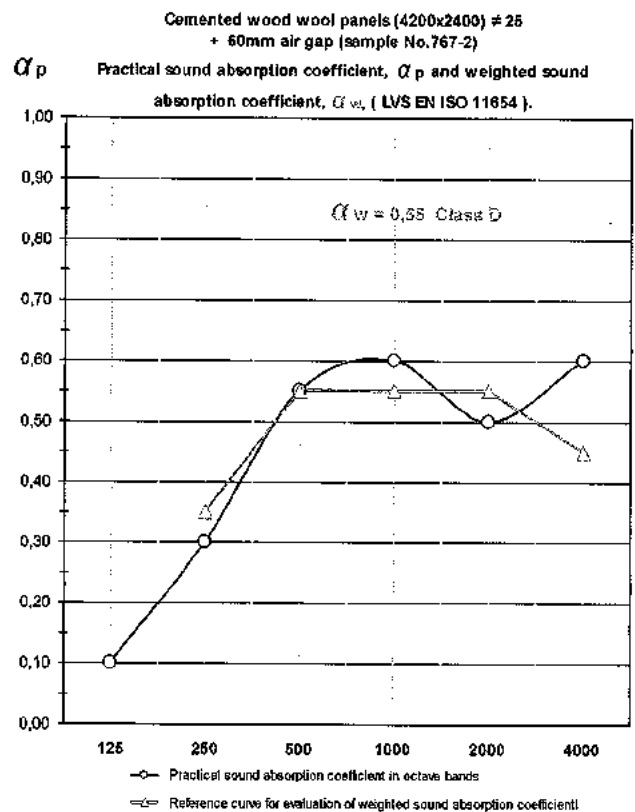


Fig. 16

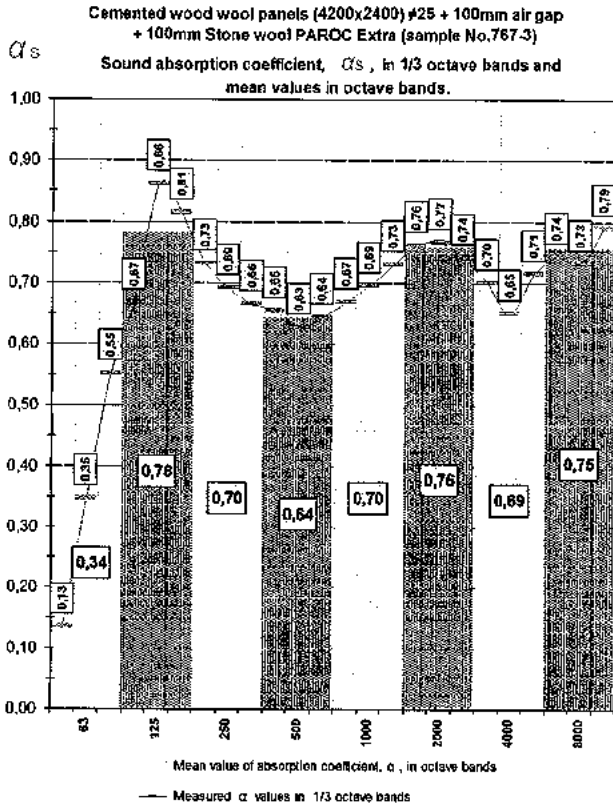


Fig. 17

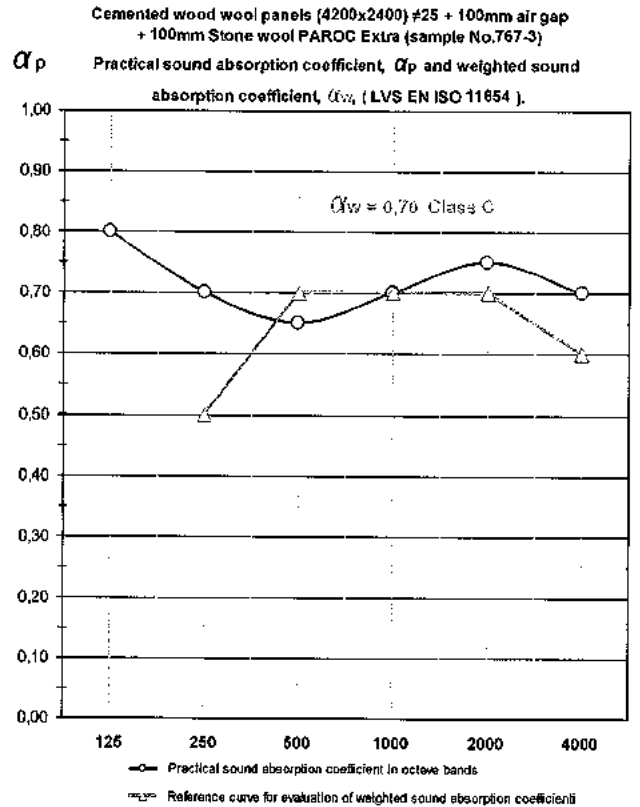


Fig. 18

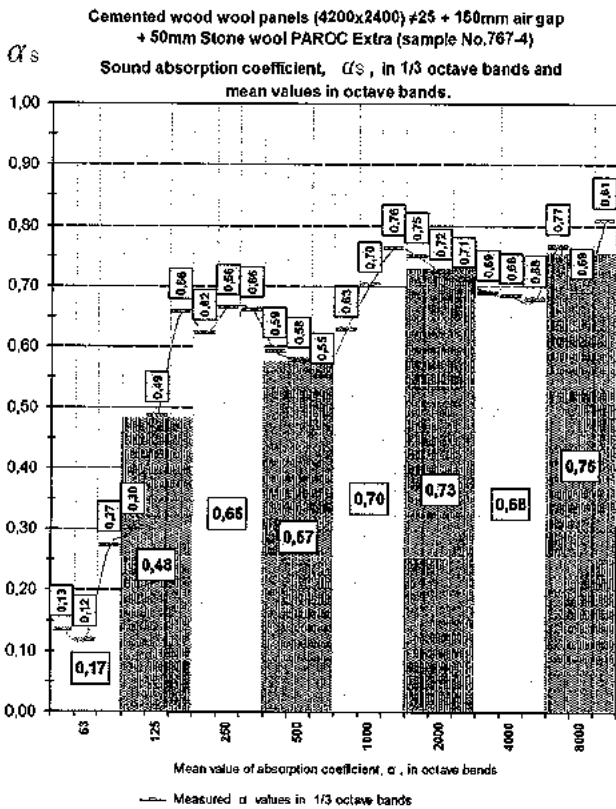


Fig. 19

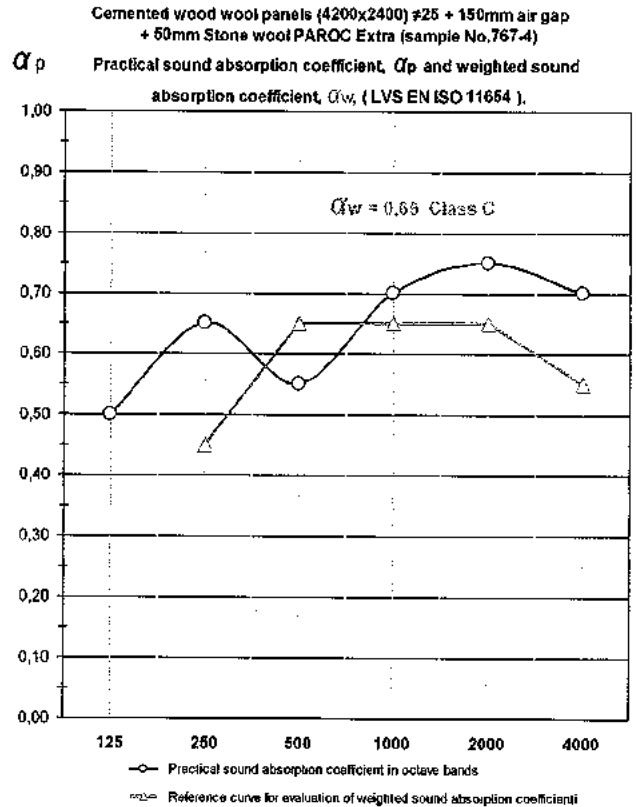


Fig. 20

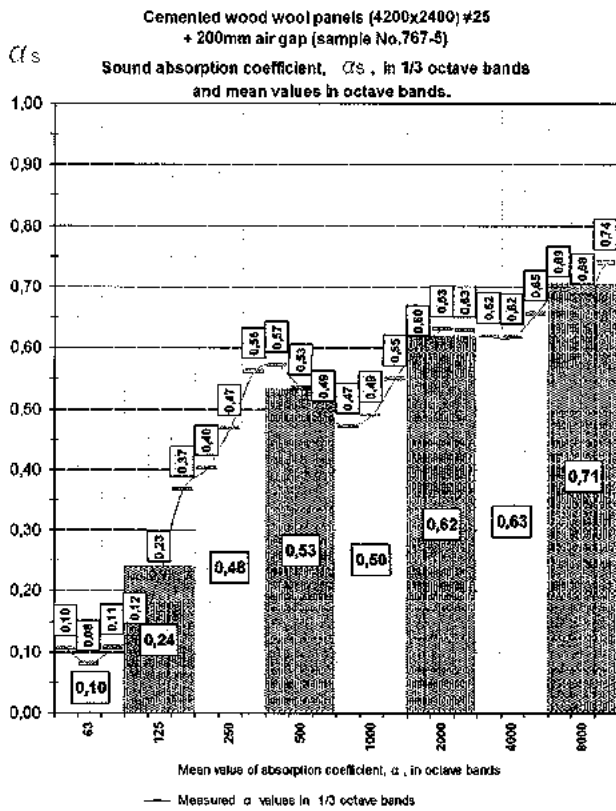


Fig. 21

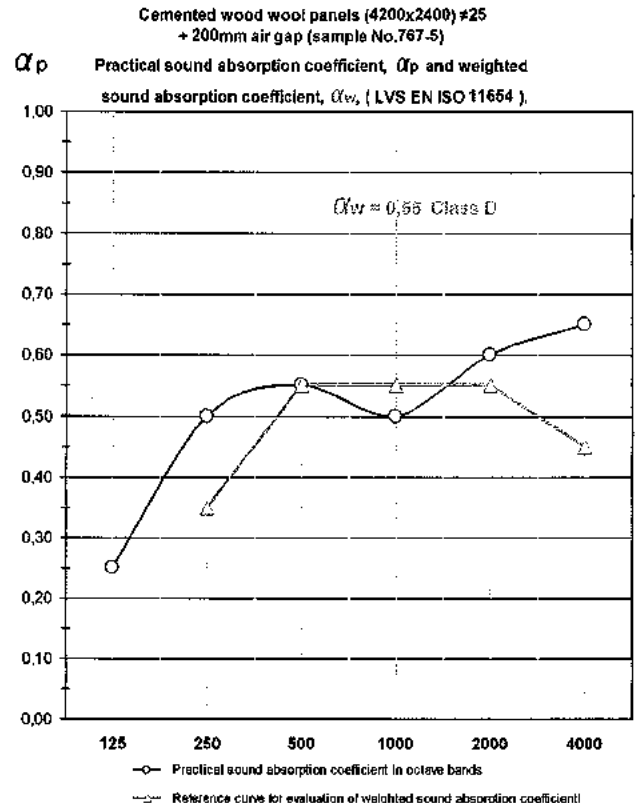


Fig. 22

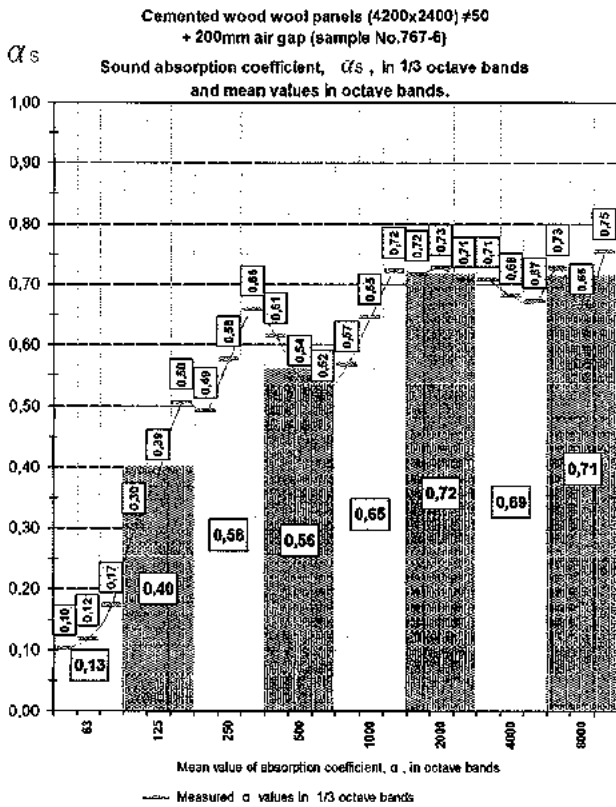


Fig. 23

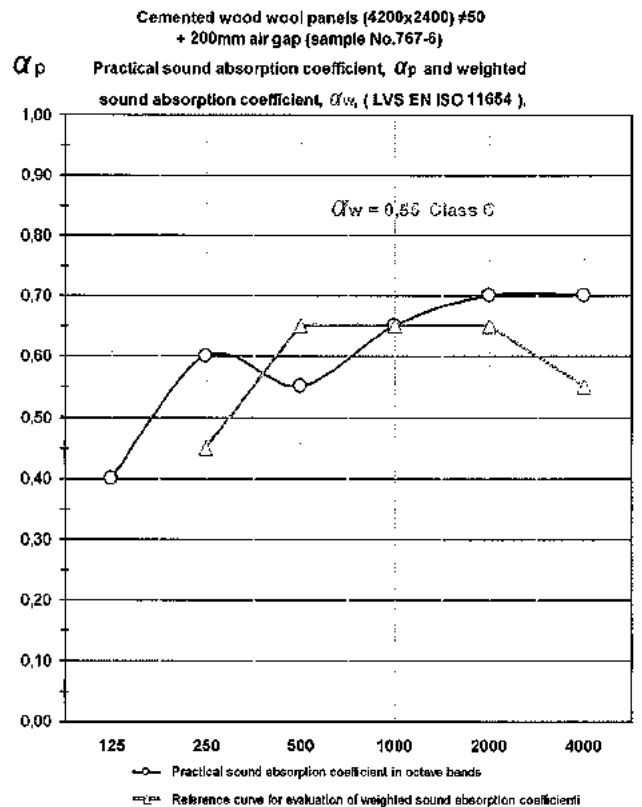


Fig. 24

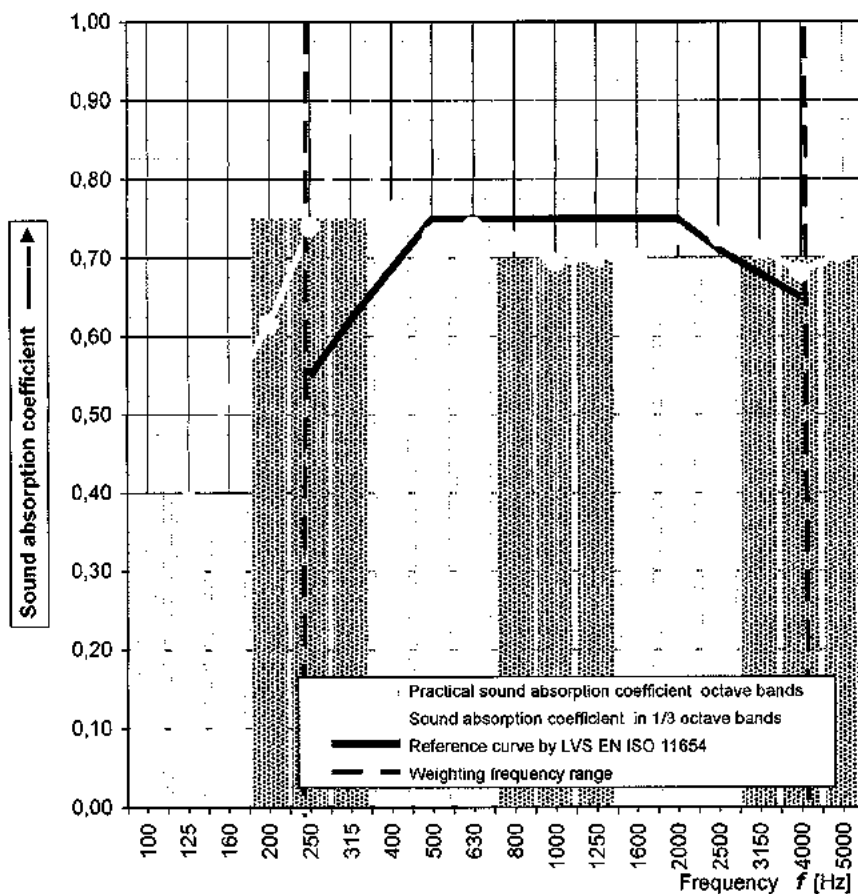
**Sound absorption coefficient  $\alpha_s$  LVS EN ISO 354:2003.**  
**Acoustics - Sound absorption measurements in reverberation room.**  
**Practical  $\alpha_p$  LVS EN ISO 11654. Acoustics - Sound absorbers in buildings - Rating of sound absorption.**

<b>Customer :</b>	"CEWOOD" Ltd., "Gaidusalas-1", Jaunlaicene parish, Aluksne region, LV-4336	<b>Sample Nr.:</b>	<b>767-1</b>	<b>Measurement date:</b>	15.11.2016
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<b>Description of measured construction and assembly:</b>	Cemented wood wool panels (4200x2400) #25 + 10mm air gap + + 50mm Stone wool Paroc UNS37 + CD profile 27x60 (3,3 m/m <sup>2</sup> ). Surface specific mass 14,8 kg/m <sup>2</sup> . Total area 10,08 m <sup>2</sup>
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Average climatic conditions in reverberation chamber.			Measurement conditions	
Temperature :	17,0	T [C°]	Reverberation chamber volume m <sup>3</sup> :	203
Air pressure :	101,2	P [kPa]	Number of measurement points :	5
Speed of sound in the air :	341,6	c [m/s]	Dodecahedron sound source positions :	1
Relative air humidity :	59%	h [%]	Used type of signal :	MLS signal

Frequency <i>f</i>	$\alpha_s$ ½ oct	$\alpha_p$ 1 oct
[Hz]	[dB]	[dB]
50	-	-
63	-	-
80	-	-
100	0,21	-
125	0,39	<b>0,40</b>
160	0,53	-
200	0,62	-
250	0,74	<b>0,75</b>
315	0,87	-
400	0,76	-
500	0,73	<b>0,75</b>
630	0,74	-
800	0,72	-
1000	0,69	<b>0,70</b>
1250	0,70	-
1600	0,70	-
2000	0,73	<b>0,70</b>
2500	0,73	-
3150	0,71	-
4000	0,68	<b>0,70</b>
5000	0,71	-
6300	-	-
8000	-	-
10000	-	-



<b>Practical sound absorption coefficient according to</b>	LVS EN ISO 11654,	$\alpha_w$ :	<b>0,75</b>
<b>Sound absorption class according to</b>	LVS EN ISO 11654	:	<b>C</b>

Measurements done by: "R&D Akustika" Ltd. Acoustics laboratory T-282

By validity level 90% the measurement error is <5%

Operators signature : \_\_\_\_\_ / G.Kozlovskis/



Latvian National  
Accreditation Bureau  
(LATAK)

Annex of Testing report Nr. 806/2016-AL8.4

Sound absorption coefficient  $\alpha_s$  LVS EN ISO 354:2003.

Acoustics - Sound absorption measurements in reverberation room.

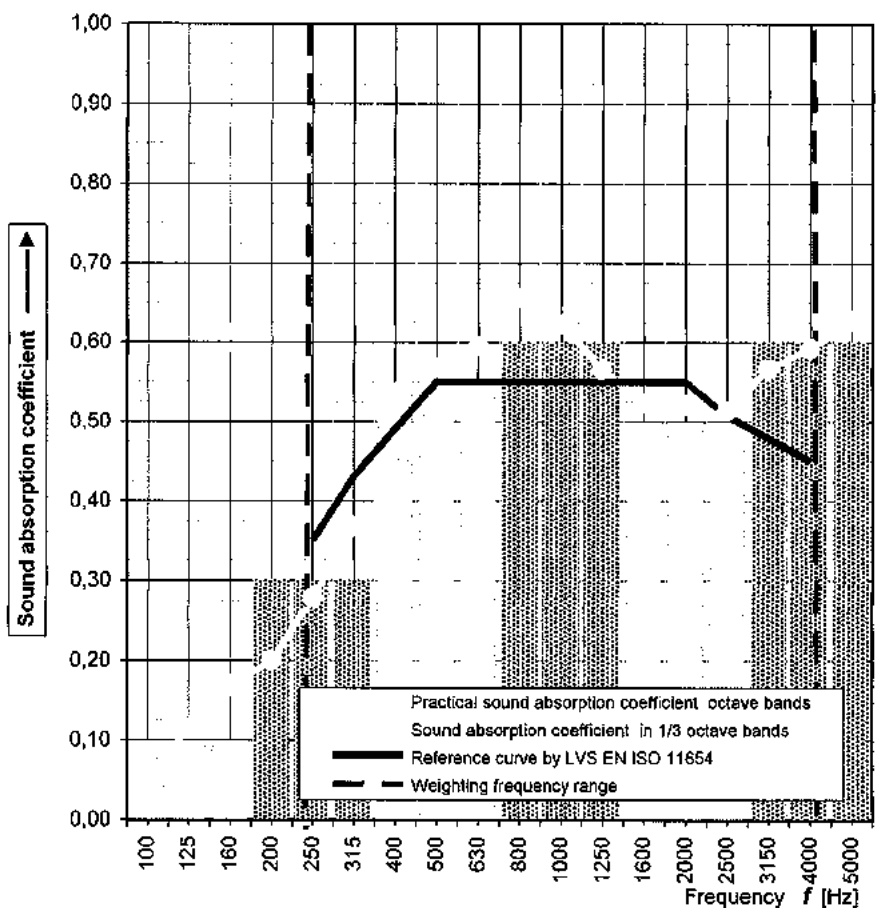
Practical  $\alpha_p$  LVS EN ISO 11654. Acoustics - Sound absorbers in buildings - Rating of sound absorption.

<b>Custo-mer :</b>	"CEWOOD" Ltd., "Galdusalas-1", Jaunlaicene parish, Aluksne region, LV-4336	<b>Sample Nr.:</b>	<b>767-2</b>	<b>Measurement date:</b>	15.11.2016
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<b>Description of measured construction and assembly:</b>	Cemented wood wool panels (4200x2400) #25 + 60mm air gap + + CD profile 27x60 (3,3 m/m <sup>2</sup> ). Surface specific mass 13,2 kg/m <sup>2</sup> . Total area 10,08 m <sup>2</sup>
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Average climatic conditions in reverberation chamber.				Measurement conditions	
Temperature :	17,0	T [C°]	Reverberation chamber volume m <sup>3</sup> :	203	
Air pressure :	101,1	P [kPa]	Number of measurement points :	5	
Speed of sound in the air :	341,6	c [m/s]	Dodecahedron sound source positions :	1	
Relative air humidity :	56%	h [%]	Used type of signal :	MLS signal	

Frequency <i>f</i>	$\alpha_s$ 1/2 oct	$\alpha_p$ 1 oct
[Hz]	[dB]	[dB]
50	-	-
63	-	-
80	-	-
100	0,05	-
125	0,11	<b>0,10</b>
160	0,17	-
200	0,20	<b>0,30</b>
250	0,28	-
315	0,37	-
400	0,42	-
500	0,57	<b>0,55</b>
630	0,59	-
800	0,66	-
1000	0,62	<b>0,60</b>
1250	0,57	-
1600	0,52	-
2000	0,52	<b>0,50</b>
2500	0,51	-
3150	0,57	-
4000	0,59	<b>0,60</b>
5000	0,63	-
6300	-	-
8000	-	-
10000	-	-



<b>Practical sound absorption coefficient according to</b>	LVS EN ISO 11654,	$\alpha_w$ :	<b>0,55</b>
<b>Sound absorption class according to</b>	LVS EN ISO 11654	:	<b>D</b>

Measurements done by: "R&D Akustika" Ltd. Acoustics laboratory T-282

By validity level 90% the measurement error is <5%

Operators signature : \_\_\_\_\_ / G.Kozlovskis/



Latvian National  
Accreditation Bureau  
(LATAK)

Annex of Testing report Nr. 806/2016-AL8.4

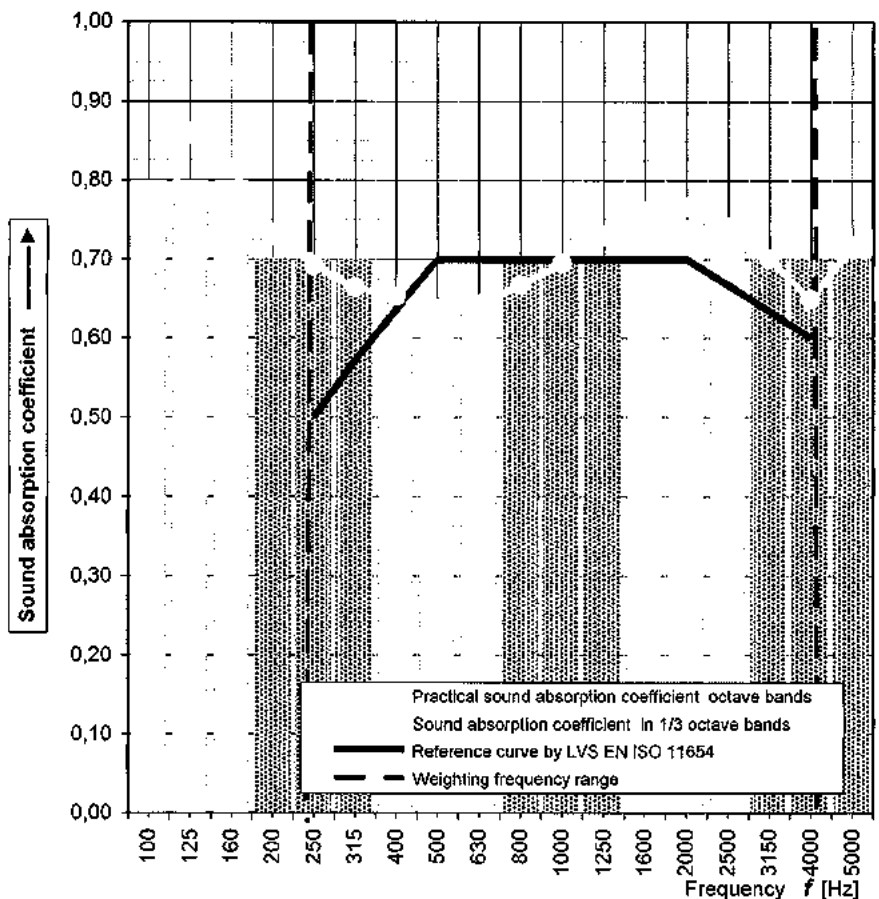
**Sound absorption coefficient  $\alpha_s$  LVS EN ISO 354:2003.**  
**Acoustics - Sound absorption measurements in reverberation room.**  
**Practical  $\alpha_p$  LVS EN ISO 11654. Acoustics - Sound absorbers in buildings - Rating of sound absorption.**

Custo-mer :	"CEWOOD" SIA, "Gaidusalas-1", Jaunlaicenes pagasts, Alūksnes novads, LV-4336, Latvia	Sample Nr.:	767-3	Measurement date: 16.11.2016

Description of measured construction and assembly:	Cemented wood wool panels (4200x2400) #25 + 100mm air gap + 100mm Stone wool PAROC Extra + CD profile 27x60 (3,3 m/m <sup>2</sup> ). Surface specific mass 16,4 kg/m <sup>2</sup> . Total area 10,08 m <sup>2</sup>
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Average climatic conditions in reverberation chamber.			Measurement conditions	
Temperature :	17,0	T [C°]	Reverberation chamber volume m <sup>3</sup> :	203
Air pressure :	101,2	P [kPa]	Number of measurement points :	5
Speed of sound in the air :	341,6	c [m/s]	Dodecahedron sound source positions :	1
Relative air humidity :	64%	h [%]	Used type of signal :	MLS signal

Frequency f [Hz]	$\alpha_s$ % oct [dB]	$\alpha_p$ 1 oct [dB]
50	-	-
63	-	-
80	-	-
100	0,67	-
125	0,86	0,80
160	0,81	-
200	0,73	-
250	0,69	0,70
315	0,66	-
400	0,65	-
500	0,63	0,65
630	0,64	-
800	0,67	-
1000	0,69	0,70
1250	0,73	-
1600	0,76	-
2000	0,77	0,75
2500	0,74	-
3150	0,70	-
4000	0,65	0,70
5000	0,71	-
6300	-	-
8000	-	-
10000	-	-



Practical sound absorption coefficient according to LVS EN ISO 11654,	$\alpha_w$ :	0,70
Sound absorption class according to LVS EN ISO 11654	:	C

Measurements done by: "R&D Akustika" Ltd. Acoustics laboratory T-282

By validity level 90% the measurement error is <5%

Operators signature : \_\_\_\_\_ / G.Kozlovskis/



Latvian National Accreditation Bureau (LATAK)

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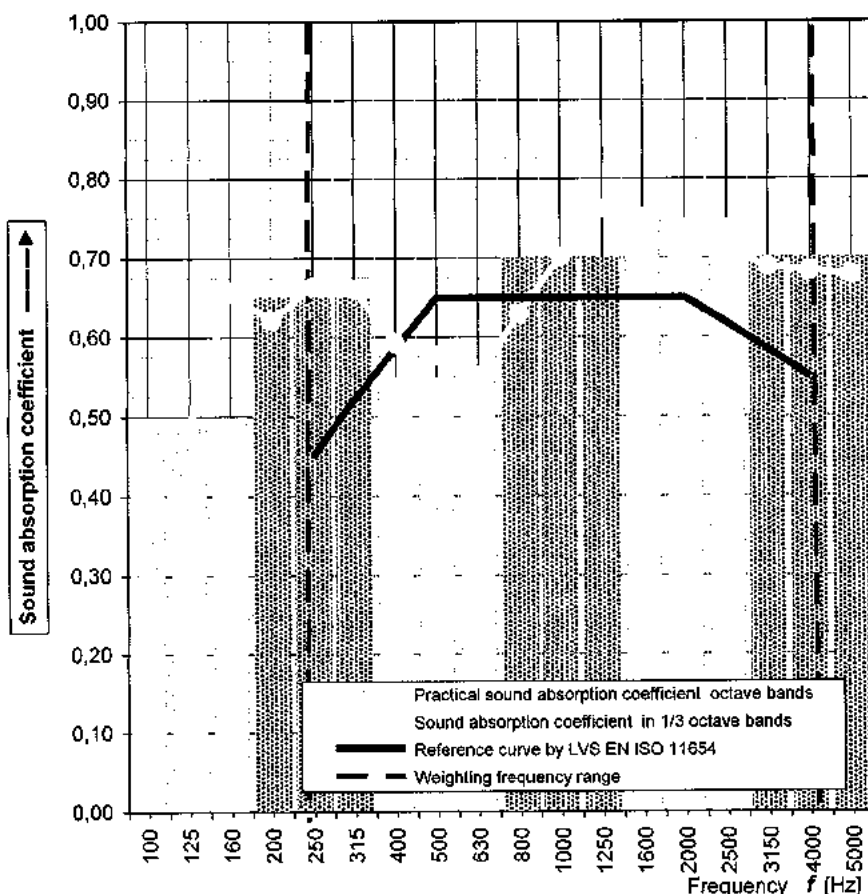
**Sound absorption coefficient  $\alpha_s$  LVS EN ISO 354:2003.**  
**Acoustics - Sound absorption measurements in reverberation room.**  
**Practical  $\alpha_p$  LVS EN ISO 11654. Acoustics - Sound absorbers in buildings - Rating of sound absorption.**

<b>Customer :</b>	"CEWOOD" SIA , "Galdusalas-1", Jaunlaicenes pagasts, Alūksnes novads, LV-4336, Latvia	<b>Sample Nr.:</b>	<b>767-4</b>	<b>Measurement date:</b>	16.11.2016
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<b>Description of measured construction and assembly:</b>	Cemented wood wool panels (4200x2400) #25 + 150mm air gap + + 50mm Stone wool PAROC Extra + CD profile 27x60 (3,3 m/m <sup>2</sup> ). Surface specific mass 14,8 kg/m <sup>2</sup> . Total area 10,08 m <sup>2</sup>
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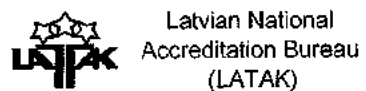
Average climatic conditions in reverberation chamber.				Measurement conditions	
Temperature :	17,0	T [C°]	Reverberation chamber volume m <sup>3</sup> :	203	
Air pressure :	101,2	P [kPa]	Number of measurement points :	5	
Speed of sound in the air :	341,6	c [m/s]	Dodecahedron sound source positions :	1	
Relative air humidity :	64%	h [%]	Used type of signal :	MLS signal	

Frequency <i>f</i>	$\alpha_s$ 1/2 oct	$\alpha_p$ 1 oct
[Hz]	[dB]	[dB]
50	-	-
63	-	-
80	-	-
100	0,30	-
125	0,49	<b>0,50</b>
160	0,66	-
200	0,62	-
250	0,66	<b>0,65</b>
315	0,66	-
400	0,59	-
500	0,58	<b>0,55</b>
630	0,55	-
800	0,63	-
1000	0,70	<b>0,70</b>
1250	0,76	-
1600	0,75	-
2000	0,72	<b>0,75</b>
2500	0,71	-
3150	0,69	-
4000	0,68	<b>0,70</b>
5000	0,68	-
6300	-	-
8000	-	-
10000	-	-



<b>Practical sound absorption coefficient according to LVS EN ISO 11654,</b>	<b><math>\alpha_w</math> :</b>	<b>0,65</b>
<b>Sound absorption class according to LVS EN ISO 11654</b>	<b>:</b>	<b>C</b>

Measurements done by: "R&D Akustika" Ltd. Acoustics laboratory T-282  
 By validity level 90% the measurement error is <5%  
 Operators signature : \_\_\_\_\_ / G.Kozlovskis/





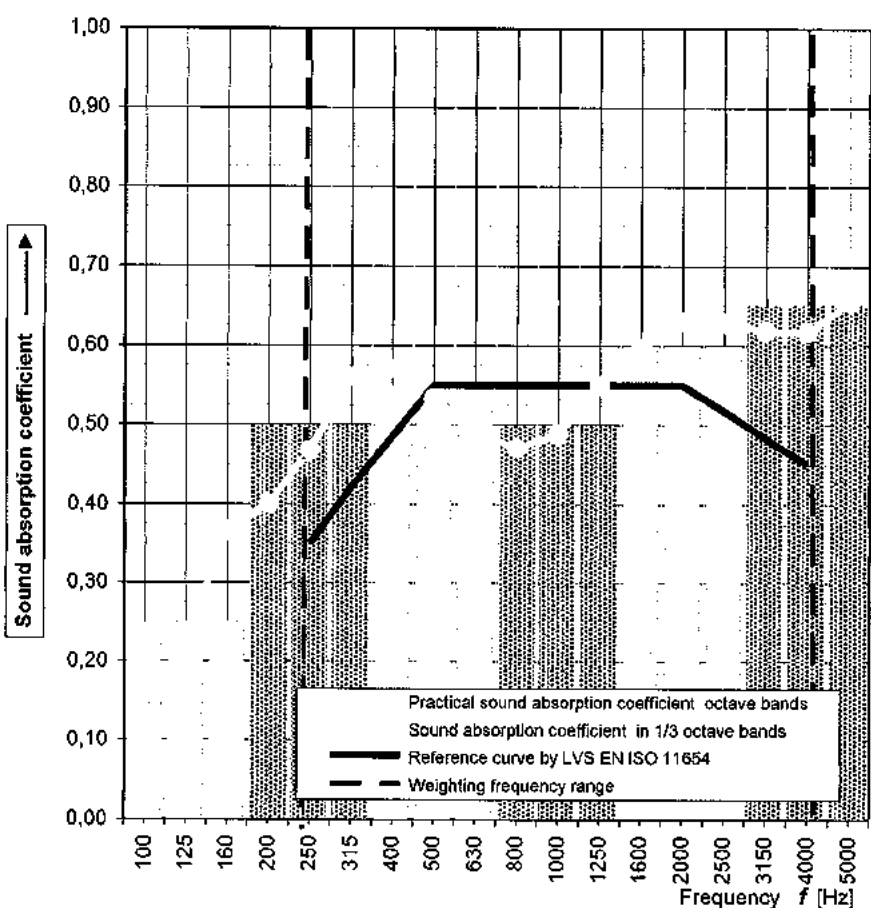
**Sound absorption coefficient  $\alpha_s$  LVS EN ISO 354:2003.**  
**Acoustics - Sound absorption measurements in reverberation room.**  
**Practical  $\alpha_p$  LVS EN ISO 11654. Acoustics - Sound absorbers in buildings - Rating of sound absorption.**

<b>Customer :</b>	"CEWOOD" SIA , "Galdusalas-1", Jaunlaicenes pagasts, Alūksnes novads, LV-4336, Latvia	<b>Sample Nr.:</b>	<b>767-5</b>	<b>Measurement date:</b>	16.11.2016
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<b>Description of measured construction and assembly:</b>	Cemented wood wool panels (4200x2400) $\neq 25 + 200\text{mm}$ air gap + + CD profile 27x60 (3,3 m/m <sup>2</sup> ). Surface specific mass 13,2 kg/m <sup>2</sup> . Total area 10,08 m <sup>2</sup>
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Average climatic conditions in reverberation chamber.				Measurement conditions	
Temperature :	17,0	T [C°]	Reverberation chamber volume m <sup>3</sup> :	203	
Air pressure :	101,1	P [kPa]	Number of measurement points :	5	
Speed of sound in the air :	341,6	c [m/s]	Dodecahedron sound source positions :	1	
Relative air humidity :	64%	h [%]	Used type of signal :	MLS signal	

Frequency <i>f</i>	$\alpha_s$ ½ oct	$\alpha_p$ 1 oct
[Hz]	[dB]	[dB]
50	-	-
63	-	-
80	-	-
100	0,12	-
125	0,23	<b>0,25</b>
160	0,37	-
200	0,40	<b>0,50</b>
250	0,47	<b>0,50</b>
315	0,56	<b>0,55</b>
400	0,57	<b>0,55</b>
500	0,53	<b>0,55</b>
630	0,49	<b>0,50</b>
800	0,47	<b>0,50</b>
1000	0,49	<b>0,50</b>
1250	0,55	<b>0,50</b>
1600	0,60	<b>0,60</b>
2000	0,63	<b>0,60</b>
2500	0,63	<b>0,60</b>
3150	0,62	<b>0,65</b>
4000	0,62	<b>0,65</b>
5000	0,65	<b>0,65</b>
6300	-	-
8000	-	-
10000	-	-

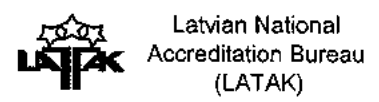


<b>Practical sound absorption coefficient according to</b>	<b>LVS EN ISO 11654,</b>	<b><math>\alpha_w</math> :</b>	<b>0,55</b>
<b>Sound absorption class according to</b>	<b>LVS EN ISO 11654</b>	<b>:</b>	<b>D</b>

Measurements done by: "R&D Akustika" Ltd. Acoustics laboratory T-282

By validity level 90% the measurement error is <5%

Operators signature : \_\_\_\_\_ / G.Kozlovskis/



Annex of Testing report Nr. 806/2016-AL8.4

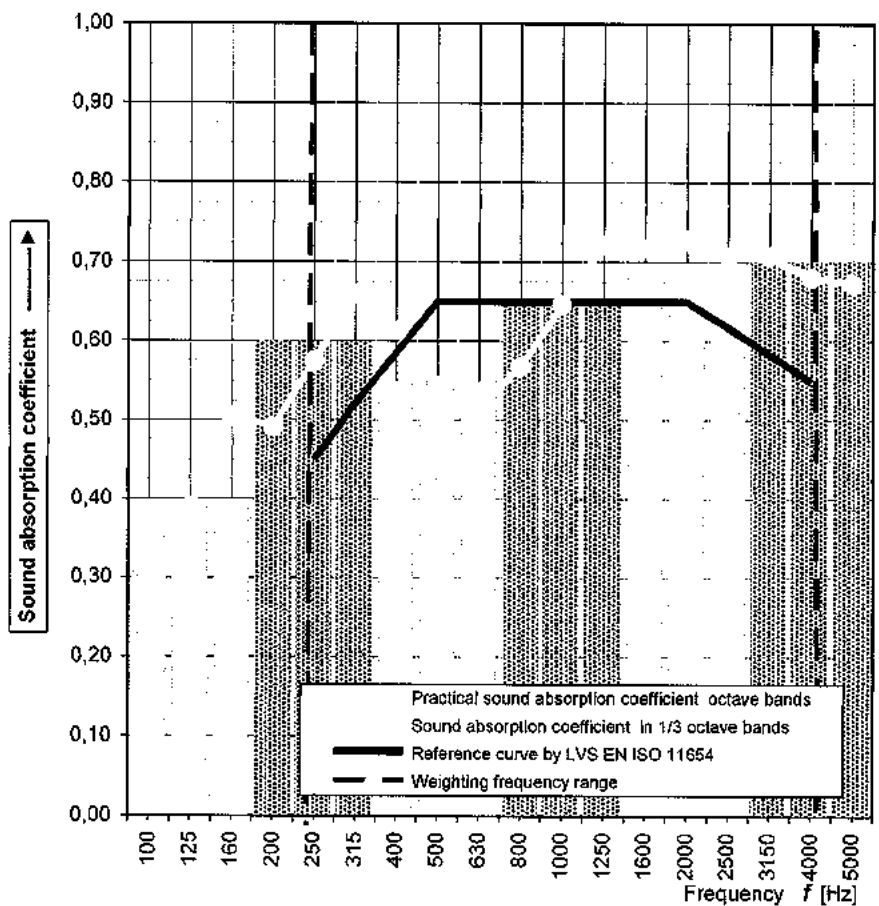
**Sound absorption coefficient  $\alpha_s$  LVS EN ISO 354:2003.**  
**Acoustics - Sound absorption measurements in reverberation room.**  
**Practical  $\alpha_p$  LVS EN ISO 11654. Acoustics - Sound absorbers in buildings - Rating of sound absorption.**

<b>Customer :</b>	"CEWOOD" SIA, "Galdusalas-1", Jaunlaicenes pagasts, Alūksnes novads, LV-4336, Latvia	<b>Sample Nr.:</b>	<b>767-6</b>	<b>Measurement date:</b>	16.11.2016
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<b>Description of measured construction and assembly:</b>	Cemented wood wool panels (4200x2400) #50 + 200mm air gap + + CD profile 27x60 (3,3 m/m <sup>2</sup> ). Surface specific mass 21,7 kg/m <sup>2</sup> . Total area 10,08 m <sup>2</sup>
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Average climatic conditions in reverberation chamber.				Measurement conditions	
Temperature :	17,0	T [C°]	Reverberation chamber volume m <sup>3</sup> :	203	
Air pressure :	101,1	P [kPa]	Number of measurement points :	5	
Speed of sound in the air :	341,6	c [m/s]	Dodecahedron sound source positions :	1	
Relative air humidity :	64%	h [%]	Used type of signal :	MLS signal	

Frequency <i>f</i>	$\alpha_s$ % oct	$\alpha_p$ 1 oct
[Hz]	[dB]	[dB]
50	-	-
63	-	-
80	-	-
100	0,30	-
125	0,39	<b>0,40</b>
160	0,50	-
200	0,49	<b>0,60</b>
250	0,58	-
315	0,66	-
400	0,61	<b>0,55</b>
500	0,54	-
630	0,52	-
800	0,57	-
1000	0,65	<b>0,65</b>
1250	0,72	-
1600	0,72	-
2000	0,73	<b>0,70</b>
2500	0,71	-
3150	0,71	<b>0,70</b>
4000	0,68	-
5000	0,67	-
6300	-	-
8000	-	-
10000	-	-



<b>Practical sound absorption coefficient according to</b>	<b>LVS EN ISO 11654,</b>	<b><math>\alpha_w</math> :</b>	<b>0,65</b>
<b>Sound absorption class according to</b>	<b>LVS EN ISO 11654</b>	<b>:</b>	<b>C</b>

Measurements done by: "R&D Akustika" Ltd. Acoustics laboratory T-282

By validity level 90% the measurement error is <5%

Operators signature : \_\_\_\_\_ / G.Kozlovskis/



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