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Managing Director: Dr. Ernst Schröder

Test Report No. 381370-01

1 Procedure

Order.....Determination of the acoustical characteristics
Product namehl 630 ab
Order by.....Egetaepper A/S
Date of order.....18.09.2008
Your referenceLennette Ormstrup
TFI reference number08-09-0157
Test official at TFIDipl.-Ing. Özlem Ersü, Tel.-Durchwahl -138

2 Short sample description

Product type.....textile floor covering
Type of manufacturetufted
Type of surfacecut pile
Colouring / patterningpatterned
Fibre composition of use surface100 % Polyamid *
Colourdark blue, gray
Type of backingtextile fleece backing

* = manufacturer's declaration

3 Test results

According to EN 20354:1993 the tested specimen of the above mentioned quality has a calculated sound absorption coefficient α_w of 0,30 (---) (annex SA).

According to ISO 140-8:1998 the tested specimen of the above mentioned quality has an acoustical insulation from impact noise of 30 dB (annex TS).

4 Annexes

The individual results as well as type and extent of the tests can be found in the following annexes:

Airbourn sound absorption	SA	381370-01
Impact sound transmission	TS	381370-01

The annexes marked ^a are based on tests accredited according to EN ISO/IEC 17025.

Aachen, 20.10.2008




Dr. Ernst Schröder

The present test report is established to the best of our knowledge. Only the entire report shall be reproduced. Under no circumstances, extracts shall be used. Furthermore, we apply the "General Terms and Conditions for the Execution of Contracts" of the Textiles & Flooring Institute GmbH, also with regard to the order execution.

Annex SA - Airbourn sound absorption

1 Procedure

Product name hl 630 ab
TFI reference number 08-09-0157
Test date 15.10.2008

The product identification characteristics can be found on the first page of the test report, respectively in annex KM.

2 Test method

Impact sound transmission according to EN 20354:1993.

The standard describes a method to measure the sound absorption level in a room.

3 Remarks

Additionally, the practical and the calculated sound absorption level according to EN ISO 11654-2:1997 are indicated.

The test was carried out by a subcontractor.

Annex TS - Impact sound transmission

1 Procedure

Product name hl 630 ab
TFI reference number 08-09-0157
Test date 15.10.2008

The product identification characteristics can be found on the first page of the test report, respectively in annex KM.

2 Test method

Impact sound transmission according to EN ISO 140-8:1998.

The standard describes a method to measure the impact sound absorption of floor coverings under laboratory conditions, by means of a standardised hammer device.

3 Remarks

Additionally, the calculated value according to EN ISO 717-2:1997 is indicated.

The test was carried out by a subcontractor.

4. Test results

Enclosure SA

Sound absorption

DIN EN 20 354 : 1993 - 07 (ISO 354 : 1995)

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Measurement of sound absorption in a reverberation room

Tested material: **article: hl 630 ab**
 Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf
 Test area: 12,7 m²
 Test method: method of reverberation room
 Date of test: 15.10.2008

Description of the test material:

Total thickness: **8,4 mm**
 Mass / area: **2,60 kg/m²**

laid loose on the floor of the reverberation room

Dimension of the test area:

length: 4,02 m
 width: 3,16 m

Reverberation room:

Basic plan: trapezoid

Volume: 211 m³
 Temperature: 20 °C
 Humidity: 65 %

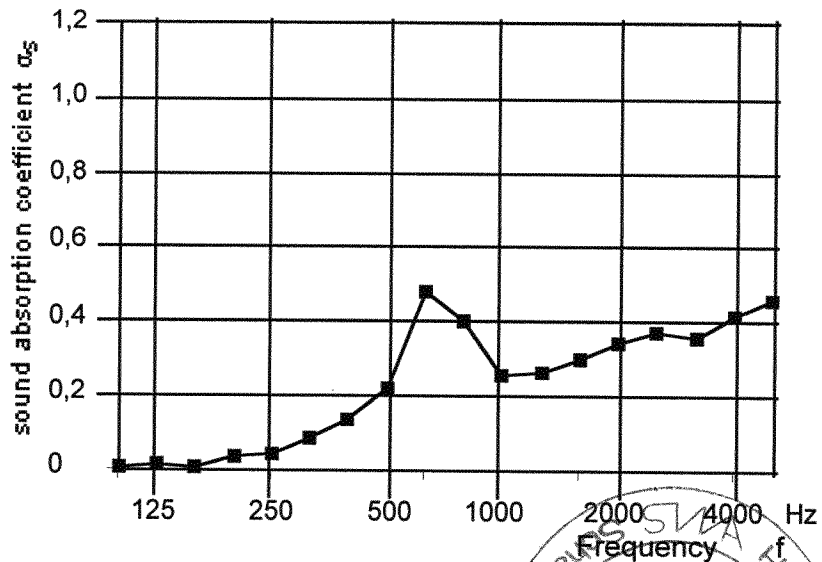
f / Hz	125	250	500	1000	2000	4000
α_s	0,01	0,04	0,22	0,26	0,34	0,42

Surface areas of reverberation room: 213 m²

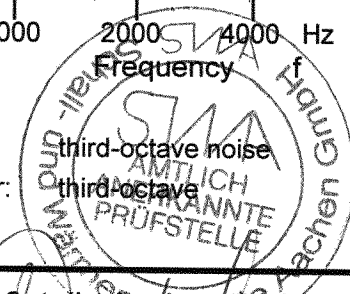
Surface areas of reflectors in reverberation room: 54,5 m²

Reflectors:

- 6 Alu panels of 1,0 m/ 2,0 m
- 7 Plywood panels of 1,5 m/ 1,3 m
- 1 Alu panels of 1,8 m/ 0,9 m



Test sound: third-octave noise
 Reception filter: third octave



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Aachen

15.10.2008

SWA Schall- und Wärmemeßstelle Aachen GmbH

(Dr.-Ing. A. Siebel)

(Dr.-Ing. L. Siebel)

4.1 Valuation of test results

Enclosure SA

**Soundabsorber for the application in buildings - valuation of sound absorbtion
Sound absorption of DIN EN ISO 11654 : 1997- 07**

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Tested material: **article: hl 630 ab**
 Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf
 Test area: 12,7 m²
 Test method: method of reverberation room
 Date of test: 15.10.2008

Description of the test material:

Total thickness: **8,4 mm**
 Mass / area: **2,60 kg/m²**
 laid loose on the floor of the reverberation room

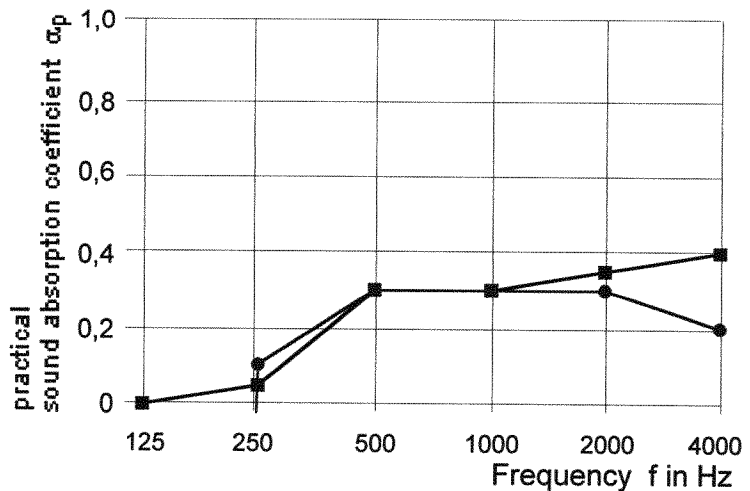
frequency - range
of the "shapeindi-
cators"

Frequency in Hz	pactical sound absorption coefficient
125	0,00
250	0,05
<u>500</u>	<u>0,30</u>
M 1000	0,30
H 2000	0,35
H 4000	0,40

Results:  — 
 Relation - curve:  — 

Reverberation room:
 Basic plan: trapezoid
 Volume: 211 m³
 Temperature: 20 °C
 Humidity: 65 %

Surfaces areas of
 reverberation
 room: 213 m²
 Surfaces areas of
 reflectors in reverberation
 room: 54,5 m²



Evaluated sound absorptions grade α_w

$\alpha_w : 0,30 (- - -) ^*)$

*) It is recommended insistently to use this singular valuation with complete curve of sound absorption garde.

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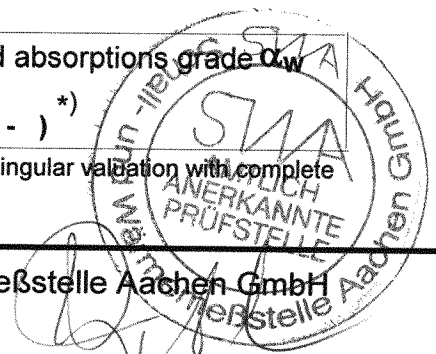
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(Dr.-Ing. U. Siebel)



4.2 Test results

Enclosure SA

Reverberation times

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Measurement of sound absorption in a reverberation room

Tested material: **article: hl 630 ab**
Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf
Test area: 12,7 m²
Test method: method of reverberation room
Date of test: 15.10.2008

Description of the test material:

Total thickness: **8,4 mm**
Mass / area: **2,60 kg/m²**

laid loose on the floor of the reverberation room

Dimension of the test area:

length: 4,02 m
width: 3,16 m

Reverberation times:

f / Hz	To / s	T1 / s
100	8,75	8,58
125	7,55	7,26
160	6,74	6,57
200	7,19	6,62
250	7,04	6,38
315	6,33	5,24
400	6,40	4,84
500	6,77	4,37
630	6,82	3,10
800	6,50	3,31
1000	6,42	3,97
1250	6,24	3,89
1600	5,84	3,55
2000	5,40	3,22
2500	4,65	2,85
3150	3,87	2,57
4000	3,22	2,15
5000	2,61	1,81

Number of loudspeaker positions: 2
Number of microphone positions: 2 x 6

Test sound: third-octave noise
Reception filter: third-octave

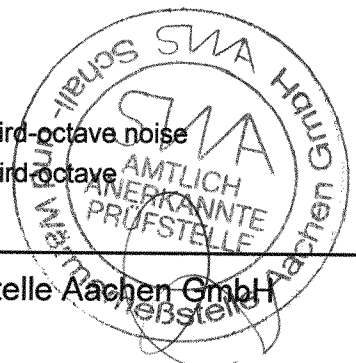
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4. Test results

Enclosure TS

Impact sound insulation of ISO 140-8 : 1998 - 03

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Measurement of impact sound insulation by a floor covering - on a solid strings-floor

Tested material: **article: hl 630 ab**
 Test rooms: 02 u. K2, Hauptstraße 133, 52 477 Alsdorf
 Test area: 4,24 m x 4,15 m Test area of slab
 Date of test: 15.10.2008

Description of the test material:

Total thickness: **8,4 mm**

Mass / area: **2,60 kg/m²**

laid loose on a 140 mm thick reinforced concrete floor slab. Test material: 4 x 1m x 1m

The results are based on tests, which were effected with on artificial source of sound by laboratory conditions.

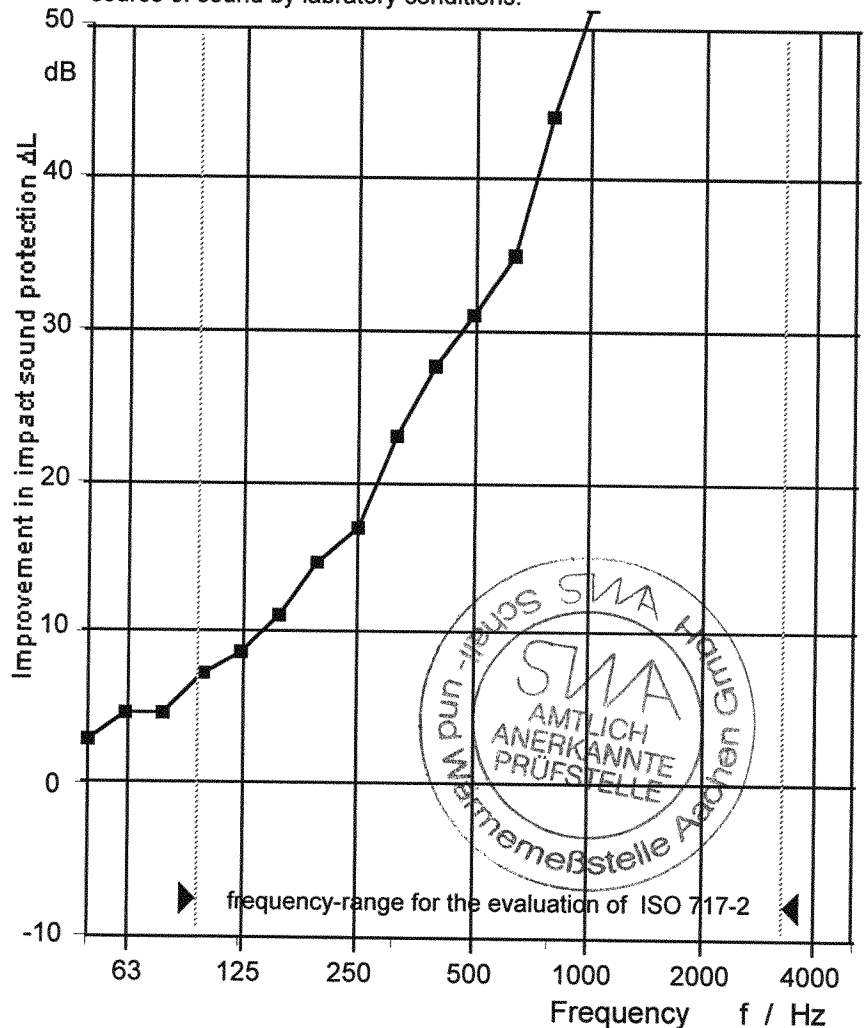
Receiving room:

Volume: 58,9 m³

Temperature: 20 °C

Humidity: 65 %

Frequency	Ln	ΔL
Hz	Bare floor dB	dB
50		2,9
63		4,8
80		4,8
100	61,0	7,4
125	61,4	8,7
160	64,8	11,2
200	63,7	14,7
250	65,4	17,0
315	65,6	23,1
400	66,1	27,7
500	66,0	31,0
630	66,4	34,9
800	66,3	44,0
1000	66,2	51,6
1250	66,6	54,0
1600	67,2	53,2
2000	67,1	53,9
2500	67,0	---
3150	66,4	---
4000		---
5000		---



Reception filter: third-octave
 Calculation according ISO 717-2:

Impact sound improvement index $\Delta L_w = 30 \text{ dB}$ $(VM = 30 \text{ dB})$	non rated reduction of impact sound $\Delta L_{lin} = \Delta L_w + C_{i,\Delta}$ $\Delta L_{lin} = 18 \text{ dB}$	$C_{i,\Delta} = -12 \text{ dB}$ $C_{i,r} = 1 \text{ dB}$ $C_{i,r,50-2500} = 6 \text{ dB}$
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Test report no.:

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15.10.2008

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