

GUT Product Test Criteria and limit values

The GUT Signet can be granted only to members of Gemeinschaft umweltfreundlicher Teppichboden e.V.

(Only manufacturers of textile floorcoverings can become members)



The use of the substances listed below is either forbidden or GUT has specified limit values for the substances that must not be exceeded.

ORGANIC CARRIERS (DYEING ACCELERANTS)

GUT test procedure No. 1

There is a ban on the use of the carriers listed.

Di-, tri-, tetra-, penta- and hexachlorobenzenes; di-, tri-, tetra- and pentachlorotoluenes

AZODYES

GUT test procedure No. 2

There is a ban on the use of dyes and pigments which, under reductive conditions, release carcinogenic amines.

4-aminodiphenyl, benzidine, 4-chloro-o-toluidine, 2-naphthylamine, o-amino-azotoluene, 2-amino-4-nitrotoluene, p-chloroaniline, 2,4-diaminoanisole, 4,4'-diaminodiphenylmethane, 3,3'-dichlorobenzidine, 3,3'-dimethoxybenzidine, 3,3'-dimethylbenzidine, 3,3'-dimethyl-4,4'-diaminodiphenylmethane, p-cresidine, 4,4'-methylene-bis-(2-chloroaniline), 4,4'-oxydianiline, 4,4'-thiodianiline, o-toluidine, 2,4-diaminotoluene, 2,4,5-trimethylaniline, o-anisidine, p-amino-azobenzene*, 2,4-xylidine, 2,6-xylidine, 6-amino-2-ethoxynaphthalene**, 4-amino-3-fluorophenol**
(*not identifiable, **special procedure required)

DISPERSE DYES

GUT test procedure No. 3

There is a ban on the use of the dyes listed, which are classified as "allergising".

C.I. Disperse Blue 1, -3, -7, -26, -35, -102, -106 and -124, C.I. Disperse Orange 1, -3, -37/76, C.I. Disperse Red 1, -11 and -17, C.I. Disperse Yellow 1, -3, -9, -39 and -49

CARCINOGENIC DYES

GUT test procedure No. 4

There is a ban on the use of the dyes listed, which are classified as "carcinogenic".

C.I. Acid Red 26, C.I. Basic Red 9, C.I. Direct Red 28, C.I. Direct Blue 6, C.I. Disperse Blue 1, C.I. Disperse Yellow 3, C.I. Direct Black 38

HEAVY METALS

GUT test procedure No. 5

Dyes and pigments containing the listed heavy metals as ingredients of the dyeing component must not be used to dye the pile material. The limit value for the total heavy metal content of a fitted carpet is 100 mg/kg.

Pb (lead), Cd (cadmium), Hg (mercury), Cr (chromium total) or Cr(VI)

FLAME RETARDANTS

GUT test procedure No. 6

There is a ban on the use of the halogenous and phosphorous flame retardants listed.

PBB, TRIS, TEPA, SCCPs, PeBDE (pentabromodiphenylether)

ACTIVE BIOCIDAL SUBSTANCES

GUT test procedure No. 7

For the biocides listed that may be contained as active substances in respective formulations there is either a ban on their use or a limit value was specified for the respective active substance or group of active substances.

- 1) There is a ban on the use of products containing **TBT**.
- 2) The limit value for the **chlorophenols**, pentachlorophenol and tetrachlorophenol (PCP and TeCP), is 0.1 mg/kg.
- 3) For **orthophenylphenol** (OPP), there is a limit value of 1 mg/kg.
- 4) For the **chlororganic pesticides** listed, there is a limit value of 0.04 mg/kg for each individual substance and of 1 mg/kg for the sum of all components, respectively.
o,p' and p,p' -DDE, -DDD and -DDT, α , β , δ , ϵ -hexachlorocyclohexane, aldrine, dieldrine, endrine, heptachlor, heptachloroepoxide, hexachlorobenzene, lindane, methoxychlor, mirex, toxaphene, * α - and β -endosulphane
- 5) For the **phosphororganic pesticides** listed, there is a limit value of 0.04 mg/kg for each individual substance and of 1 mg/kg for the sum of all components, respectively.
Diazinon, dichlorofenthion, dichlorophos**, malathion**, parathion-ethyl, parathion-methyl*, trifluralin (*special procedures required, **other identification limits).
- 6) For the **herbicides**, 2,4,5-T and 2,4-D, there is a limit value of 0.04 mg/kg for each individual substance and of 1 mg/kg for the sum of all components, respectively.
- 7) Except for permethrine, there is a ban on the use of all **pyrethroids** for the protection of wool against moths and beetles.
- 8) As moth- and beetle-proofing agent for the sole finishing of woollen fitted carpets, **permethrine** may be used up to a maximum limit of 210 mg/kg. Application must be conducted in compliance with a prescribed procedure.

EMISSIONS FROM TEXTILE FLOORCOVERINGS

GUT test procedure No. 8

Volatile organic components from textile floorcoverings are determined in compliance with the test-chamber process. The following limit values are specified for the components listed.

| | | |
|--|------------------------------|---|
| TVOC | 300 $\mu\text{g}/\text{m}^3$ | Test chamber method (EN 13419; 1+2; ISO 16000). The test is performed 72h after $t = 0$. For calculation and evaluation of the R-value, the actual LCI-Value List as published by AgBB* is used. |
| VOC without LCI | 100 $\mu\text{g}/\text{m}^3$ | |
| R-Value | ≤ 1 | |
| SVOC (C ₁₆ to C ₂₂) | 30 $\mu\text{g}/\text{m}^3$ | |
| Cancerogenic Substances (EU-list Class 1 a. 2) | n.n. | |

* Ausschuss zur gesundheitlichen Bewertung von Baumaterialien

ODOUR

GUT test procedure No. 9

The material tested should only have the low-intensity odour typical of a new product.

The test mark following appraisal by a team of 7 persons must be a value < 4 .

REQUIREMENTS ON LATICES

GUT test procedure No. 10

The latices used for coating must meet the following requirements on the residual monomer content.

For the individual substances styrene and 4-PCH, the limit value is 200 mg/kg of latex, and for ethylbenzene and 4-VCH, the limit value for each is 50 mg/kg of latex.

The limit value of the sum for all 4 components is 400 mg/kg of latex.

For the manufacture of foam coatings, there is a ban on the use of the vulcanisation accelerator Zn-diethyldithiocarbamate (ZDEC).



DECLARATION OF PERFORMANCE

DOP: 1011#IE0ACV

1. Unique identification code of the product-type:

1011#IE0ACV

2. Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

E-WEAVE AB - Textile floor covering - pile carpet acc. EN 1307:2014

3. Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

For use as floor covering in buildings (see EN 14041) according to the manufacturer's specifications.

4. Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

Balta Industries NV/Division ITC - Kanegemstraat 15 - B - 8700 Tielt



5. Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2):

6. System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 1

7. In case of the declaration of performance concerning a construction product covered by a harmonised standard: Name of notified certification body that performed the initial inspection of the manufacturing plant and of factory production control, continuous surveillance, assessment and evaluation of factory production control and issued the certificate of constancy of performance.

Centexbel; Wetenschappelijk en technisch centrum voor de belgische textielnijverheid Technologiepark 7 B - 9052 Zwijnaarde

Notified Body

0493-CPR-0093

certificate of constancy of performance

8. In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

not applicable

9. Declared performance

| Essential characteristics | Performance | Harmonised technical specification |
|-----------------------------------|-------------|------------------------------------|
| Reaction to fire | Cfl-s1 | EN 14041:2008-05 |
| Content of Pentachlorophenol | DL PCP | EN 14041:2008-05 |
| Formaldehyd Emissions | NA HCHO | EN 14041:2008-05 |
| Slip resistance | DS | EN 14041:2008-05 |
| Electrical behavior (dissipative) | NPD | EN 14041:2008-05 |
| Electrical behavior (conductive) | NPD | EN 14041:2008-05 |
| Electrical behavior (antistatic) | | EN 14041:2008-05 |
| Thermal conductivity [W/mK] | 0.102 | EN 14041:2008-05 |
| Water-tightness | NPD | EN 14041:2008-05 |

10. The performance of the product identified above is in conformity with the set of declared performance/s.

This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer

Signed for and on behalf of the manufacturer by:

Luc Nelis, Production Manager

(name and function)

19.04.2017, Tielt

(place and date of issue)

(signature)

TFI Report 470373-01

Sound Absorption Impact Sound Insulation

Customer

BALTA Industries N.V.
Division ITC
Kanegemstraat 15
8700 Tielt
BELGIUM

Product

textile floor covering
E-Weave AB

This report includes 2 pages and 2 annex(es)

Responsible at TFI

Dr.-Ing. Heike Kempf
Tel: +49 241 9679 171
h.kempf@tfi-online.de

Aachen, 28.03.2017

Dr. Alexander Siebel
- Head of the testing laboratory -

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This report only applies to the tested samples and has been 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 TFI Aachen GmbH, also with regard to the order execution.

1 Transaction

| | |
|---------------------|--|
| Test order | sound absorption according to EN ISO 354 sound insulation according to EN ISO 10140 |
| Order date | 06.03.2017 |
| Your reference | L. Nelis |
| Product designation | E-Weave AB |
| TFI sample number | 17-03-0012 |

2 Product Specification

| | |
|---------------------|------------------------------|
| Type of manufacture | tufted |
| Type of surface | loop pile |
| Backing | woven textile backing |
| Pattern | tonal effect without pattern |
| Colour | grey, black |

View



| | |
|----------------------------------|-----------------------|
| Thickness [mm] | 5.3* |
| Area density [g/m ²] | 2100* |
| Type of delivery | broadloom |
| | *customer information |

3 Results

| | |
|-------------------------|------------------------------|
| Sound absorption | $\alpha_w = 0,15 (H)$ |
| Impact sound insulation | $\Delta L_w = 18 \text{ dB}$ |

4 Annexes

| | |
|-------------------------|---------------------------|
| Sound absorption | SA 470373-01 ^a |
| Impact sound insulation | TS 470373-01 ^a |

The annexes marked ^a are based on tests accredited in accordance with EN ISO/IEC 17025.

Annex SA - Sound Absorption Coefficient

1 Transaction

| | |
|---------------------|------------|
| Product designation | E-Weave AB |
| TFI sample number | 17-03-0012 |
| Testing period | 16.03.2017 |

2 Test Method / Requirements

| | |
|-----------------------------|--|
| EN ISO 354:2003 | Measurement of sound absorption in a reverberation room |
| EN ISO 11654:1997 | Sound absorbers for use in buildings – Rating of sound absorption |
| Deviation from the standard | None |

3 Remarks

None

4 Measuring Operation

| | |
|-----------------|---|
| Test noise: | broadband pink noise |
| Receive filter: | third octave band filter |
| Measurement: | 2 loudspeaker positions 6 microphone positions |

5 Laboratories

| | |
|----------------|---|
| Test rooms: | laboratory of the TFI Aachen GmbH, Hauptstr. 133, 52477 Alsdorf, Germany |
| Test method: | reverberation room method |
| Volume: | 211 m ³ |
| Total surface: | 213 m ² |
| Floor plan: | trapezoidal |
| Reflectors: | 6 aluminium plates 1.0 m x 2.0 m 7 plywood boards 1.5 m x 1.3 m 1 aluminium plate 1.8 m x 0.9 m |

6 Measuring Devices

| | |
|-----------------------|---|
| Real time analyser: | CESVA INSTRUMENTS, TYPE: SC310, SN: T234359 |
| Microphone: | CESVA INSTRUMENTS, TYPE: C130, SN: 11861 |
| Microphone amplifier: | CESVA INSTRUMENTS, TYPE: PA13, SN: 49649 |
| Calibrator: | CESVA INSTRUMENTS, TYPE: CB006, SN 49649 |
| Loudspeaker: | 2 dodecahedrons |

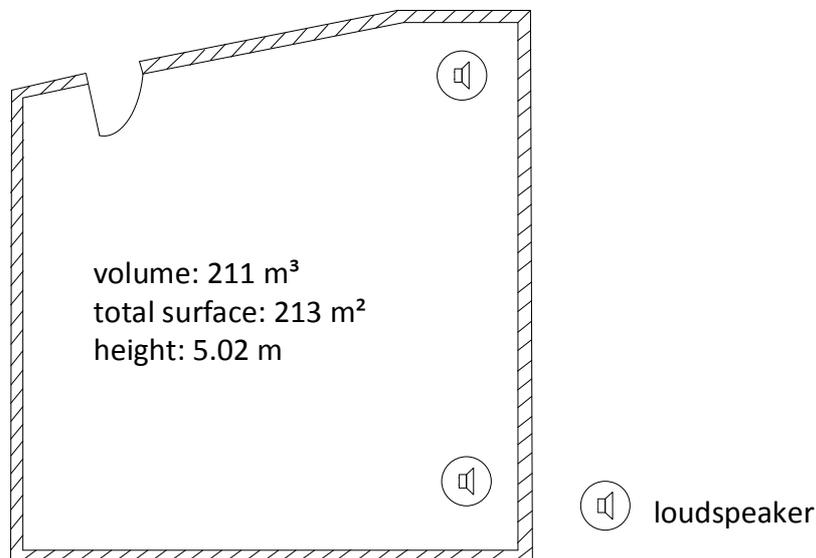
7 Evaluation

The decay curves are determined using the interrupted noise method. Several decay curves measured at one microphone and/or loudspeaker position are averaged in order to reach a sufficient reproducibility. The reverberation time of the room is expressed by the arithmetic mean derived from the total number of all reverberation time measurements in each frequency band.

The equivalent sound absorption area of the test specimen A_T is calculated as the difference between the equivalent sound absorption area of the reverberation room with test specimen A_2 and the equivalent sound absorption area of the empty reverberation room A_1 without test specimen.

The equivalent sound absorption coefficient α_s describes the ratio of the equivalent sound absorption area A_T of a test specimen divided by the area of the test specimen.

The evaluated sound absorption coefficient α_w is a single-number frequency-independent value which equals the value of the reference curve at 500 Hz after shifting it.



Drawing reverberation room

Sound absorption according EN ISO 354

Measurement of sound absorption in a reverberation room

Product name E-Weave AB

TFI sample number 17-03-0012

Construction -
(from top to bottom)

Installation term TYP A

Test area 12.18 m² / 3.98 m x 3.06 m

Installation loose laid on the floor of the reverberation room

Testing period 16.03.2017

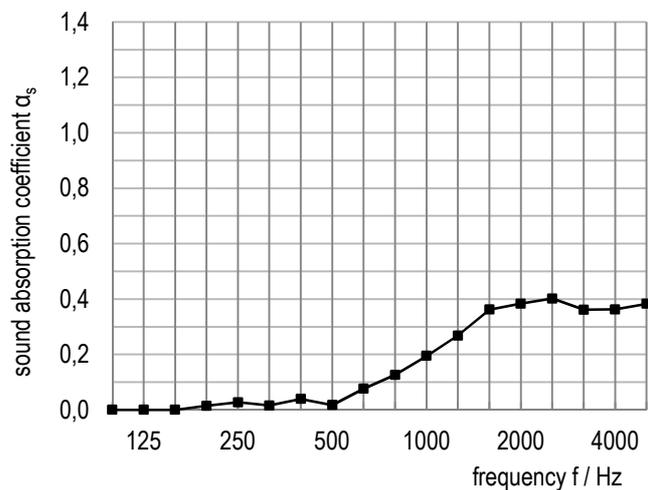
Room Reverberation room

Volume 211 m³

| | Θ [°C] | r. h. [%] | B [kPa] |
|----------------|---------------|-----------|---------|
| without sample | 19,3 | 45,7 | 100,5 |
| with sample | 19,3 | 45,7 | 100,5 |

Note ---

| Frequency [Hz] | T1 [s] | T2 [s] | α_s [-] |
|----------------|--------|--------|----------------|
| 100 | 9,07 | 9,07 | 0,00 |
| 125 | 7,61 | 7,60 | 0,00 |
| 160 | 6,88 | 6,87 | 0,00 |
| 200 | 7,09 | 6,83 | 0,01 |
| 250 | 7,22 | 6,74 | 0,03 |
| 315 | 6,36 | 6,14 | 0,02 |
| 400 | 6,01 | 5,54 | 0,04 |
| 500 | 6,21 | 5,98 | 0,02 |
| 630 | 6,36 | 5,42 | 0,08 |
| 800 | 6,07 | 4,76 | 0,13 |
| 1000 | 5,68 | 4,07 | 0,20 |
| 1250 | 5,50 | 3,60 | 0,27 |
| 1600 | 5,32 | 3,15 | 0,36 |
| 2000 | 4,94 | 2,95 | 0,38 |
| 2500 | 4,22 | 2,63 | 0,40 |
| 3150 | 3,41 | 2,37 | 0,36 |
| 4000 | 2,65 | 1,97 | 0,36 |
| 5000 | 1,98 | 1,56 | 0,38 |



T1 reverberation time (average) / without sample

T2 reverberation time (average) / with sample

α_s sound absorption according EN ISO 354

Sound absorption for the application in buildings according EN ISO 11654

Valuation of sound absorption

Product name E-Weave AB

TFI sample number 17-03-0012

Construction -
(from top to bottom)

Installation term TYP A

Test area 12.18 m² / 3.98 m x 3.06 m

Installation loose laid on the floor of the reverberation room

Testing period 16.03.2017

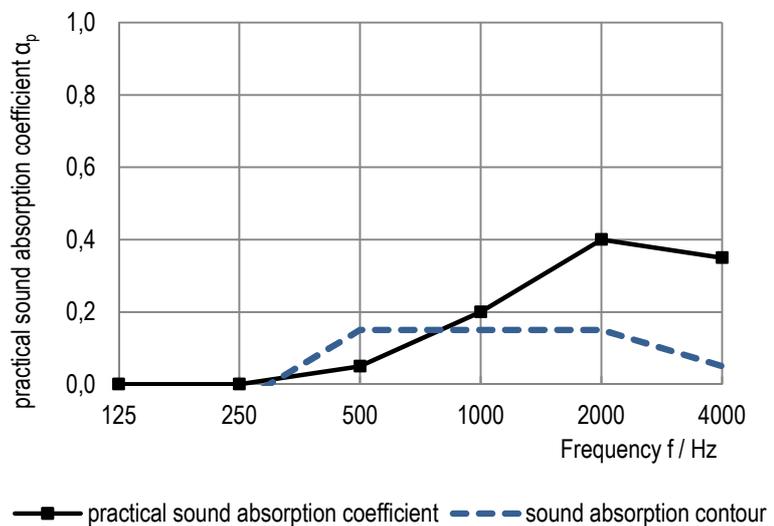
Room Reverberation room

Volume 211 m³

| | Θ [°C] | r. h. [%] | B [kPa] |
|----------------|---------------|-----------|---------|
| without sample | 19,3 | 45,7 | 100,5 |
| with sample | 19,3 | 45,7 | 100,5 |

Note ---

| Frequency [Hz] | α_s [-] | α_p [-] |
|----------------|----------------|----------------|
| 100 | 0,00 | |
| 125 | 0,00 | 0,00 |
| 160 | 0,00 | |
| 200 | 0,01 | |
| 250 | 0,03 | 0,00 |
| 315 | 0,02 | |
| 400 | 0,04 | |
| 500 | 0,02 | 0,05 |
| 630 | 0,08 | |
| 800 | 0,13 | |
| 1000 | 0,20 | 0,20 |
| 1250 | 0,27 | |
| 1600 | 0,36 | |
| 2000 | 0,38 | 0,40 |
| 2500 | 0,40 | |
| 3150 | 0,36 | |
| 4000 | 0,36 | 0,35 |
| 5000 | 0,38 | |



α_s sound absorption according EN ISO 354

α_p practical sound absorption coefficient according EN ISO 11654

Evaluation according EN ISO 11654:

Evaluated sound absorption grade $\alpha_w =$ **0,15** (H)

Sound absorption class: **E**



Annex TS - Impact Sound Insulation

1 Transaction

| | |
|---------------------|------------|
| Product designation | E-Weave AB |
| TFI sample number | 17-03-0012 |
| Testing period | 17.03.2017 |

2 Test Method / Requirements

| | |
|---------------------|--|
| EN ISO 10140-1:2014 | Acoustics - Laboratory measurement of sound insulation of building elements - Part 1: Application rules for certain products |
| EN ISO 10140-2:2010 | Acoustics - Laboratory measurement of sound insulation of building elements - Part 2: Measurement of airborne sound insulation |
| EN ISO 10140-3:2015 | Acoustics - Laboratory measurement of sound insulation of building elements - Part 3: Measurement of impact sound reduction |
| EN ISO 10140-4:2010 | Acoustics - Laboratory measurement of sound insulation of building elements - Part 4: Measurement procedures and requirements |
| EN ISO 10140-5:2014 | Acoustics - Laboratory measurement of sound insulation of building elements - Part 5: Requirements for test facilities and equipment |
| EN ISO 717-1:2013 | Acoustics - Rating of sound insulation in buildings and of building elements - Part 1: Airborne sound insulation |
| EN ISO 717-2:2013 | Acoustics - Rating of sound insulation in buildings and of building elements - Part 2: Impact sound reduction |

3 Remarks

None

4 Measuring Operation

| | |
|---|---|
| Measurement of the impact sound pressure level: | Using with 3 tapping machine position. (The single results of the one-third-octave-bands were averaged on an energy basis) |
| Test surface: | ~1m ² |
| Category: | I |
| Connection with the floor: | loose laid |
| Damage to the sample: | None |

5 Laboratories

| | |
|---|---|
| Test rooms: | Laboratories of the TFI Aachen GmbH, Hauptstrasse 133, 52477 Alsdorf, Germany |
| Sending room (1.04): | $V = 52.4 \text{ m}^3$ (with diffusers) |
| Receiving room (0.01): | $4.05 \text{ m} \times 3.95 \text{ m} \times 3.33 \text{ m} + 2.00 \text{ m} \times 0.98 \text{ m} \times 0.18 \text{ m}$; $V = 53.6 \text{ m}^3$ (cuboid room, mit Diffusoren) (with diffusers) |
| Reference floor: | $4.27 \text{ m} \times 4.46 \text{ m}$; $S = 19.04 \text{ m}^2$ 14 cm concrete slab floor with an area-related mass of $m' \sim 322 \text{ kg/m}^2$ |
| Flanking walls: | Lime sand brick walls with light wall facings (facing shell $d = 12 \text{ cm}$) with an average area-related mass of $m' \sim 330 \text{ kg/m}^2$ |
| Weighted normalized impact sound pressure level | $L_{n,0,w} = 75 \text{ dB}$ |
| Weighted normalized impact sound pressure level | $L_{n,w} = 56 \text{ dB}$ |
| Weighted normalized impact sound pressure level | $L_{n,r,w} = 60 \text{ dB}$ |

6 Measuring Devices

| | |
|-----------------------|--|
| Real time analyser: | CESVA INSTRUMENTS, TYP: SC310, SN: T237102 |
| Microphone: | CESVA INSTRUMENTS, TYP: C130, SN: 13523 |
| Microphone amplifier: | CESVA INSTRUMENTS, TYP: PA13, SN: 4162 |
| Calibrator: | CESVA INSTRUMENTS, TYP: CB006, SN 49649 |
| Tapping machine: | NORSONIC, Type 211, SN: 502 (standard tapping machine with 3 feet and 5 hammers according to ISO 10140) |

7 Evaluation

The impact sound pressure level generated by the standard tapping machine is measured in the receiving room under a bare heavy floor with and without a floor covering. The impact sound reduction is determined on the basis of the measured values as follows:

$$\Delta L = L_{n,0} - L_n \text{ (dB)}$$

$L_{n,0}$ Impact sound pressure level without a floor covering (dB)

L_n Impact sound pressure level with a floor covering (dB)

For the evaluation of the weighted reduction in impact sound pressure level ΔL_w , the relevant reference curve is shifted in increments of 1 dB towards the measured curve until the sum of unfavourable deviations is as large as

possible, but not more than 32 dB.

The linear impact sound level ΔL_{lin} is determined according to the following equation:

$$\Delta L_{lin} = L_{n,r,0,w} + C_{l,r,0} - (L_{n,r,w} + C_{l,r}) = \Delta L_w + C_{l,\Delta}$$

| | |
|---------------|---|
| $L_{n,r,w}$ | is the calculated weighted normalized impact sound pressure level of the reference floor with the floor covering under test |
| $L_{n,r,0,w}$ | 78 dB, calculated from $L_{n,r,0}$ according to Section 4.3.1 of DIN EN ISO 717-2: 2013 |
| $C_{l,r}$ | Spectrum adaptation term for the reference floor with the floor covering to be tested |
| $C_{l,r,0}$ | -11 dB, spectrum adaptation term for the reference floor with $L_{n,r,0}$ determined according to Annex A, Section A.2.1 of DIN EN ISO 717-2:2013 |

8 Note

The results are based on measurements performed under laboratory conditions with artificial excitation (standard procedure). The test results are applicable in due consideration of the national provisions and the local circumstances and/or constructions.

Impact sound insulation according ISO 10140-1

Laboratory measurements of the reduction of transmitted impact noise by floor coverings on a heavyweight reference floor

Product name E-Weave AB

Testing period 17.03.2017

TFI sample number 17-03-0012

Construction
(from top to bottom) -

Installed by TFI

Receiving room

Source room

Volume 53,6 m³Volume 52,4 m³

Air temperature 18,5 °C

Air temperature 19,6 °C

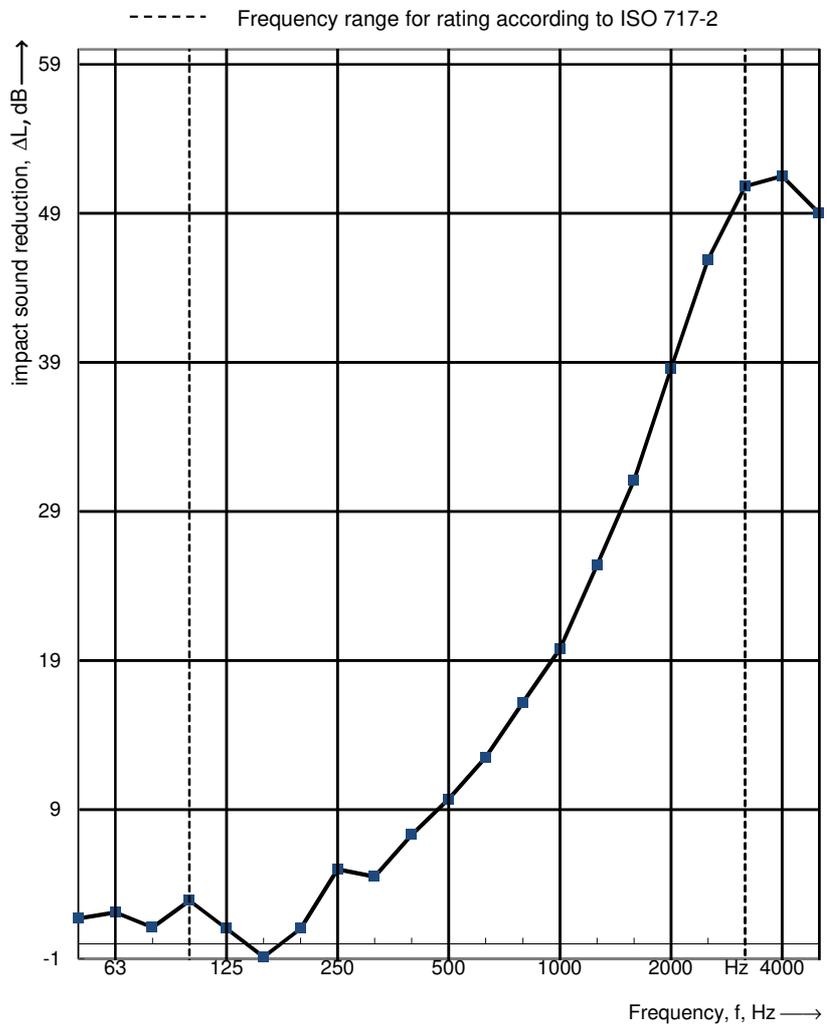
Relative air humidity 51,3 %

Relative air humidity 44,2 %

Static pressure 99,9 kPa

Type of reference floor: Massiv

| Frequency f [Hz] | $L_{n,0}$ 1/3 oct. [dB] | ΔL 1/3 oct. [dB] |
|------------------------|-------------------------------|--------------------------------|
| 50 | 61,7 | 1,7 |
| 63 | 67,4 | 2,1 |
| 80 | 63,9 | 1,1 |
| 100 | 62,8 | 2,9 |
| 125 | 65,3 | 1,0 |
| 160 | 60,0 | -0,9 |
| 200 | 64,3 | 1,0 |
| 250 | 70,4 | 5,0 |
| 315 | 65,1 | 4,5 |
| 400 | 66,6 | 7,3 |
| 500 | 66,1 | 9,7 |
| 630 | 65,9 | 12,5 |
| 800 | 67,3 | 16,2 |
| 1000 | 66,8 | 19,8 |
| 1250 | 67,8 | 25,4 |
| 1600 | 68,3 | 31,1 |
| 2000 | 68,9 | 38,6 |
| 2500 | 69,0 | 45,9 |
| 3150 | 69,3 | 50,8 |
| 4000 | 67,8 | 51,5 |
| 5000 | 64,1 | 49,0 |



Rating according to ISO 717-2

 $\Delta L_w = 18$ dB $C_{l,\Delta} = -11$ dB $C_{l,r} = 0$ dB

The results are based on a test performed with an artificial source under laboratory conditions (engineering method) with the specified reference floor.