



E97D8F8D

SIRIO AB

PRODIS-GUT Certificate

**The article mentioned meets the test criteria of
Gemeinschaft umweltfreundlicher Teppichboden e.V.**

Short description of the textile floor covering

Type of production: pile carpet acc. EN 1307:2014 - tufted
Type of surface: loop pile - loop pile like - multicoloured plain
100% PA6
Type of backing: textile backing - woven - man-made fibres

Harmful substances

The bans on use and thresholds, if applicable, in particular for SVHCs, carriers, azo dyes, allergenic and carcinogenic dyes, heavy metals chlorophenols (e.g. PCP), biocidal substances, phthalates and other softeners, halogenised flame retardants and Sb_2O_3 as well as inorganic fibres specified in the GUT criteria have been met.

Formaldehyde

The ban on the use of adjuvants containing or splitting off formaldehyde have been met.
The formaldehyde emissions are $< 10 \mu\text{g}/\text{m}^3$.

VOC emissions

Threshold in $\mu\text{g}/\text{m}^3$	3 days	28 days
TVOC (C_6-C_{16}):	250	100
VOC without NIK:	100	50
SVOC ($C_{16}-C_{23}$):	30	30
R-value:	1,0	1
HCHO:	10	4
carcinogenics:	not detectable	
benzene:	not detectable	

The limit values for VOC emissions indicated alongside, determined in accordance with the test chamber process (ISO 16000-6 or EN 10580), have been met. The test was made 3 days, or, where required, 28 days after placement into the chamber.

The evaluation of the emissions and the calculation of the R value were based on the then current LCI list of the AgBB.

Odour

The product has passed the odour test with at least the grade 3.
A slight odour of low intensity is permissible in new merchandise.

Shares of recycled materials

The requirements regarding the content of contaminants and the emission behaviour apply unrestrictedly also to products whose manufacture included the use of recycled materials. The use of recycled raw materials (e.g. pile fibres) must be indicated when the manufacturer registers the article.

For a complete list of all limit values and test criteria see

www.gut-ev.de

Aachen, 19.12.2016



This certificate was issued electronically and requires no further signature

Gemeinschaft umweltfreundlicher Teppichboden e.V.,
D-52068 Aachen, Schönebergstrasse 2

PRODIS

**THE COMPREHENSIVE
EUROPEAN PRODUCT
INFORMATION SYSTEM FOR
TEXTILE FLOORCOVERINGS**

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#IE0ACL

1. Unique identification code of the product-type:

1011#IE0ACL

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

SIRIO 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 3

7. In case of the declaration of performance concerning a construction product covered by a harmonised standard: Name of the notified test laboratory, that has issued the certificate of conformity of the factory production control, inspection reports and calculation reports (if relevant).

CRET; Centre de recherches et d'etudes techniques du tapis Rue du vert bois, Zone industrielle, P.O. Box 30 F - 59531 Neuville-en-Ferrain Cedex

Notified Body

2013/084

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]	0.076	EN 14041:2008-05
Water-tightness	NPD	EN 14041:2008-05

10. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 9.

This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4

Signed for and on behalf of the manufacturer by:

Luc Nelis, Production Manager

(name and function)

20.12.2016, Tielt

(place and date of issue)

(signature)



REACTION TO FIRE CLASSIFICATION REPORT

N° 2013/084-1

(English report of classification report RC 2013/084)

According to EN 13501-1 (2007) + A1 (2013)

Notification by the French Government to the European Commission
under n° NB 2401

Sponsor : BALTA INDUSTRIES N.V / DIVISION I.T.C
Kanegemstraat 15
B 8700 TIELT
BELGIUM

Product name : Products group Tufted carpet 100 % polyamide
(Updated)

Description : Textile floor coverings (EN 1307 family)
(see detailed description in paragraph 2)

Date of issue : 23/02/2017

The indicated classification does not prejudice the conformity of marketed materials with the samples submitted to the tests and under no circumstances, this document should not be considered as type approval or certification of the product in the sense of the L 115-27 article of the consumption's code of the law dated June 3rd 1994.

*The reproduction of this classification report is only authorised in its integral form.
It comprise 5 pages*

1. Introduction

This classification report defines the classification assigned to the above-mentioned product (s) in accordance with the procedures given in the NF EN 13501-1 standard: September 2007 & A1 (2013).

2. Details of classified product

2.1. Product standard

NF EN 14041 (2005): “Resilient, textile and laminate floor coverings - Essential characteristics”.

2.2. Product description

Tufted pile carpet 100% polyamide on woven polypropylene backing (EN 1307 family).

Tested loose laid over a fibre-cement board classified A1_n or A2_n with a density (1800 ± 200) kg/m³ and thickness (8 ± 2) mm.

Use surface: 100 % polyamide.

Nominal mass per unit area : 1350 to 2400 g/m²

Nominal effective pile thickness : 2,1 to 5,9 mm

3. Test reports and tests results in support of this classification

3.1. Tests reports

Name of laboratory	Name of sponsor	Test report N°	Test method
C.R.E.T.	BALTA INDUSTRIES N.V / DIVISION I.T.C Kanegemstraat 15 B 8700 TIELT BELGIUM	RL 2017/114 + classification report 2017/032-1 (21/02/2017)	EN ISO 9239-1

Name of laboratory	Name of sponsor	Test report N°	Test method
C.R.E.T.	BALTA INDUSTRIES N.V / DIVISION I.T.C Kanegemstraat 15 B 8700 TIELT BELGIUM	RL 2013/392 + classification report 2013/076-1 (28/11/2013)	EN ISO 9239-1

Name of laboratory	Name of sponsor	Test report N°	Test method
CENTEXBEL (NB 0493)	BALTA INDUSTRIES N.V / DIVISION I.T.C Kanegemstraat 15 B 8700 TIELT BELGIUM	N° 80368/C (23-06-2011)	EN ISO 9239-1

3.2. Tests results

Classes of reaction to fire for textile floor coverings, classified without further testing.

Test method	The floorings « TRIANON AB / TN + dessin AB » - « MASTER AB - MAESTRO AB » - « PROVIDER AB » meet the requirements of table 2 of the standard EN 14041 and are classified without further testing (CWFT)
EN ISO 11925-2	Classification E_n

Test method	Product	Number of tests	Parameters	Results
				Continuous parameters : mean value
EN ISO 9239-1	TRIANON AB / TN + dessin AB (classification report CRET 2017/032-1)	3	Critical heat flux (kW/m ²)	≥ 4,5
			Smoke (% X min)	≤ 750

Test method	Product	Number of tests	Parameters	Results
				Continuous parameters : mean value
EN ISO 9239-1	MASTER AB – MAESTRO AB (classification report CRET 2012/076-1)	3	Critical heat flux (kW/m ²)	≥ 4,5
			Smoke (% X min)	≤ 750

Test method	Product	Number of tests	Parameters	Results
				Continuous parameters : mean value
EN ISO 9239-1	PROVIDER AB (Test report CENTEXBEL 80368/C)	3	Critical heat flux (kW/m ²)	≥ 4,5
			Smoke (% X min)	≤ 750

4. Classification and field of application

4.1. Reference of classification

This classification has been carried out in accordance with EN 13501-1 :2007 & A1 (2013).

4.2. Classification

Fire behaviour		Smoke production
C _n	-	s1

Classification : C_n – s1

4.3. Field of application

This classification is valid for the following end use applications :

Loose laid over fibre-cement A2_n or A1_n class with a density ≥ 1350 kg/m³.

This classification is valid for the following product parameters :

- A nominal mass per unit area of: 1350 to 2400 g/m²
- A nominal effective pile thickness of : 2,1 to 5,9 mm

The classification of the product family is valid for the following trademarks :

AKROPOLIS AB
AKTUA AB
AKZENTO AB
ARISTOCRAT AB
ART DECO AB
ARTE AB / AT + dessin AB
ARTO AB
ARUNDEL AB / AD + dessin AB
BAROQUE AB
BELGRAVIA AB
BELLEVUE AB
BELVEDERE AB
BIRKDALE AB
BRIDGFORD AB
CAVALLI AB
CHABLIS AB
CHAMBORD AB
CHIC AB
COLUMN AB
CONSUL AB / CS + dessin AB
CORONET AB
CRYSTAL PALACE AB
FLOXIMO AB
FORTISSIMO AB
GALLERIA AB
GRANATA AB
HERCULES AB
HERITAGE NEW AB
KREA AB
MAESTRO AB
MARQUIS AB / MQ + dessin AB
MASTER AB
MONOGRAM AB / MG + dessin AB
PAGEANT AB
PALACE NEW AB
PODIUM AB
PROGRESSA AB / PG + dessin AB
PROJECTA AB / PJ + dessin AB
PROMENADE AB / PM + dessin AB
PROMINENT AB
PROSPECTA (NEW) AB / PP (NEW) + dessin AB
PROVIDER AB / PV + dessin AB
RICHELIEU AB
RIVELLO AB / RV + dessin AB (= LOVE VINTAGE COLLECTION)
ROCCA AB
ROCKET AB
SHERINGTON AB
SIRIO AB
SPIRIT AB
SPLENDID AB
SPONTINI AB
TOSCANA AB

TFI Report 462128-01

Sound Absorption Impact Sound Insulation

Customer

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

Product

textile floor covering
Sirio 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, 03.01.2017

Dr. Alexander Siebel
- Head of the testing laboratory -

The present document is provided with an advanced electronic signature



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	30.11.2016
Your reference	L. Nelis
Product designation	Sirio AB
TFI sample number	16-11-0301

2 Product Specification

Type of manufacture	tufted
Type of surface	loop pile
Backing	woven textile backing
Pattern	tonal effect without pattern
Colour	grey, brown, beige
View	



Thickness [mm]	6.1*
Area density [g/m ²]	1795*
Type of delivery	broadloom
	*customer information

3 Results

Sound absorption	$\alpha_w = 0,15 (H)$
Impact sound insulation	$\Delta L_w = 24 \text{ dB}$

4 Annexes

Sound absorption	SA 462128-01 ^a
Impact sound insulation	TS 462128-01 ^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	Sirio AB
TFI sample number	16-11-0301
Testing period	07.12.2016

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

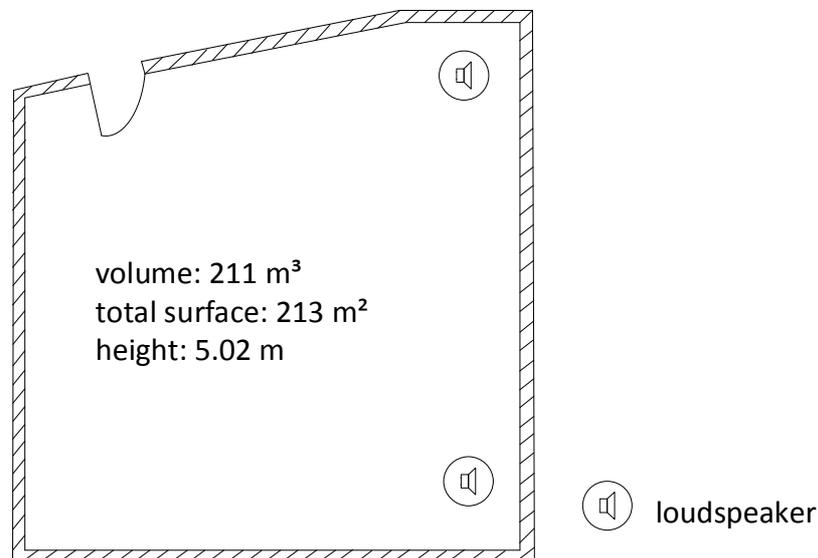
7 Evaluation

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 Sirio AB
TFI sample number 16-11-0301

Construction -
 (from top to bottom)

Installation term TYP A
 Test area 11.89 m² / 3.99 m x 2.98 m
 Installation loose laid on the floor of the reverberation room

Testing period 07.12.2016

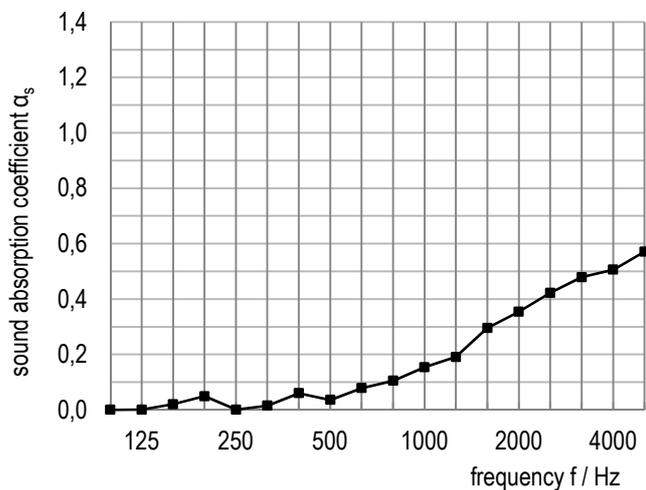
Room Reverberation room

Volume 211 m³

	Θ [°C]	r. h. [%]	B [kPa]
without sample	18,9	43,3	101,3
with sample	18,9	43,3	101,3

Note ---

Frequency [Hz]	T1 [s]	T2 [s]	α_s [-]
100	8,67	8,66	0,00
125	7,18	7,17	0,00
160	7,42	7,04	0,02
200	8,47	7,39	0,05
250	6,98	6,96	0,00
315	5,99	5,81	0,02
400	6,31	5,57	0,06
500	5,94	5,53	0,04
630	6,33	5,39	0,08
800	6,11	4,99	0,11
1000	5,79	4,41	0,15
1250	5,64	4,10	0,19
1600	5,26	3,41	0,30
2000	4,73	2,98	0,35
2500	3,94	2,49	0,42
3150	3,21	2,09	0,48
4000	2,51	1,74	0,51
5000	1,81	1,33	0,57



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 Sirio AB
TFI sample number 16-11-0301

Construction -
 (from top to bottom)

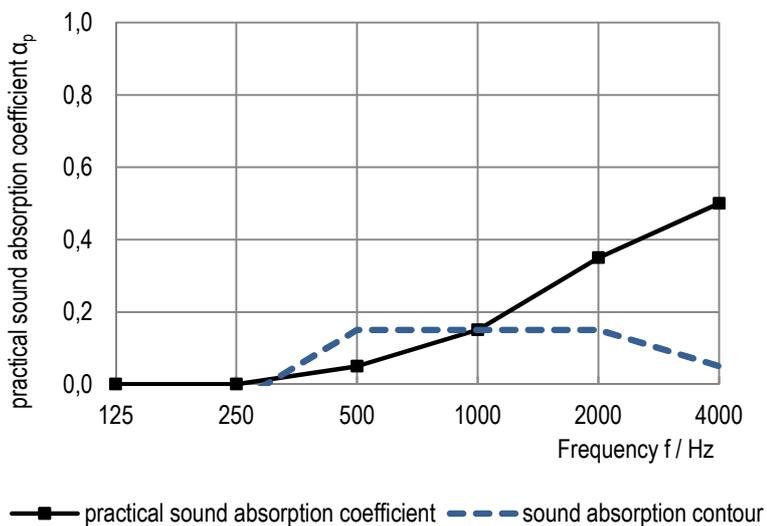
Installation term TYP A
 Test area 11.89 m² / 3.99 m x 2.98 m
 Installation loose laid on the floor of the reverberation room

Testing period 07.12.2016
 Room Reverberation room
 Volume 211 m³

	Θ [°C]	r. h. [%]	B [kPa]
without sample	18,9	43,3	101,3
with sample	18,9	43,3	101,3

Note ---

Frequency [Hz]	α_s [-]	α_p [-]
100	0,00	
125	0,00	0,00
160	0,02	
200	0,05	
250	0,00	0,00
315	0,02	
400	0,06	
500	0,04	0,05
630	0,08	
800	0,11	
1000	0,15	0,15
1250	0,19	
1600	0,30	
2000	0,35	0,35
2500	0,42	
3150	0,48	
4000	0,51	0,50
5000	0,57	



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	Sirio AB
TFI sample number	16-11-0301
Testing period	07.12.2016

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:	~0.5m ²
Category:	I
Connection with the floor:	loose laid
Damage to the sample:	None

5 Laboratories

Test rooms:	Laboratories of the TFI Aachen GmbH, Hauptstrasse133, 52477 Alsdorf, Germany
Sending room (1.04):	V = 52.4 m ³ (with diffusers)
Receiving room (0.01):	4.05 m x 3.95 m x 3.33 m + 2.00 m x 0.98 m x 0.18 m; V = 53.6 m ³ (cuboid room, with diffusers)
Reference floor:	4.27 m x 4.46 m; S = 19.04 m ² 14 cm concrete slab floor with an area-related mass of m' ~ 322 kg/m ²
Flanking walls:	Lime sand brick walls with light wall facings (facing shell d= 12cm) with an average area-related mass of m' ~ 330 kg/m ²

Weighted normalized impact sound pressure level	$L_{n,0,w}$	=	75	dB
Weighted normalized impact sound pressure level	$L_{n,w}$	=	51	dB
Weighted normalized impact sound pressure level	$L_{n,r,w}$	=	54	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 Sirio AB Testing period 07.12.2016

TFI sample number 16-11-0301

Construction
(from top to bottom) -

Installed by TFI

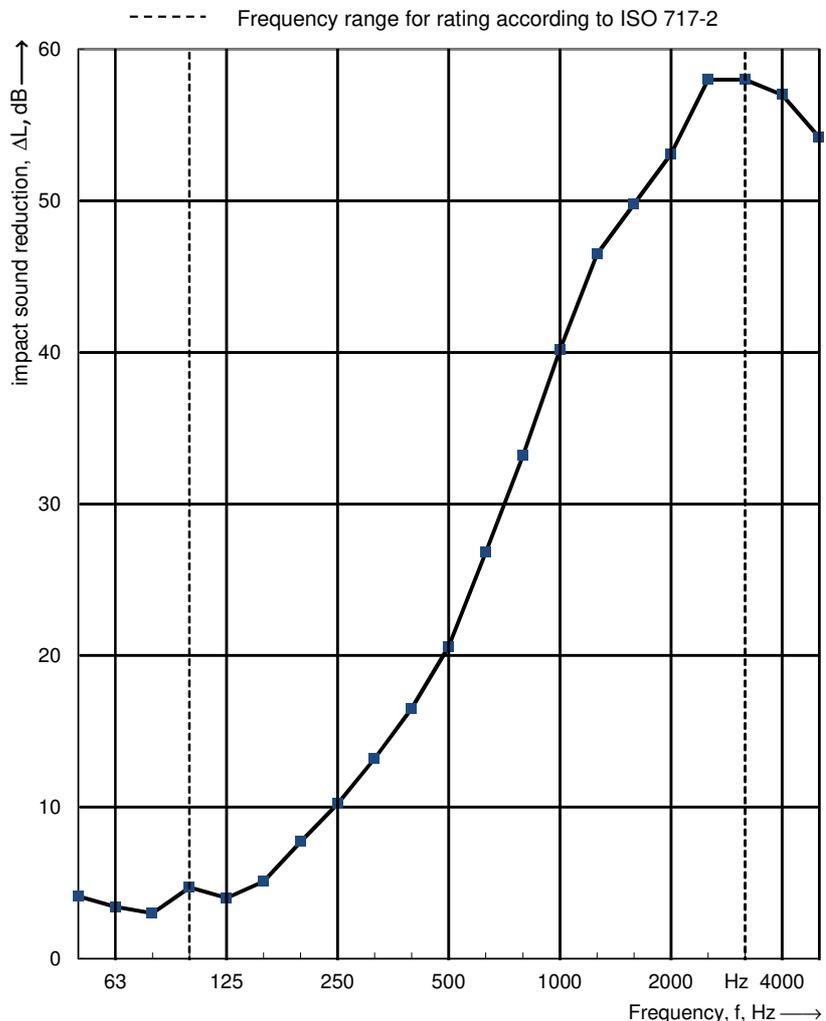
Receiving room

Volume 53,6 m³
Air temperature 18,8 °C
Relative air humidity 43,3 %
Static pressure 101,2 kPa

Source room

Volume 93,1 m³
Air temperature 19,9 °C
Relative air humidity 39,7 %
Type of reference floor: Massiv

Frequency f [Hz]	L _{n,0} 1/3 oct. [dB]	ΔL 1/3 oct. [dB]
50	64,7	4,1
63	63,2	3,4
80	65,7	3,0
100	61,9	4,7
125	65,4	4,0
160	62,1	5,1
200	63,5	7,7
250	70,5	10,2
315	65,9	13,2
400	67,7	16,5
500	65,6	20,6
630	67,5	26,8
800	67,8	33,2
1000	67,8	40,2
1250	67,8	46,5
1600	68,4	49,8
2000	69,1	53,1
2500	68,9	58,0
3150	69,0	58,0 ¹
4000	67,6	57,0 ¹
5000	63,8	54,2 ¹

¹ correction basic noise

Rating according to ISO 717-2

 $\Delta L_w = 24$ 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.

CERTIFICATE

Permission to use the test mark

MATERIAL TEST – SUITABLE FOR ALLERGIC PEOPLE –

TÜV NORD Systems GmbH & Co. KG, Hamburg (Germany), hereby confirms that exclusive articles^{*)} of the wall-to-wall-carpet groups

- Polyamid
- Polyamid/Polypropylen
- Polypropylen and
- Sorona

conform to the requirements set by TÜV NORD Systems GmbH & Co. KG.

BALTA INDUSTRIES NV, Sint-Baafs-Vijve (Belgium),

is therefore granted the right to use the test mark shown below in connection with the exclusive articles of the wall-to-wall-carpet groups.

^{*)} see back of the page

TÜV NORD Systems GmbH & Co. KG
Indoor Air Hygiene Product Testing



Dipl.-Ing. Vera Gräff

Essen, 20 May 2016



BALTA INDUSTRIES NV, Sint-Baafs-Vijve (Belgium), is granted the right by TÜV NORD Systems, Hamburg (Germany), to use the TÜV NORD Test Mark “Wall-to-wall-carpet of allergen-tested material – Suitable for Allergic People” for the articles of wall-to-wall-carpet groups listed below:

Wall-to-wall-carpet group “Polyamid”

AKTUA UX, AKZENTO TR, ALTONA UX FR, ANGELO UX, APOLLO SDE NEW TR, AREZZO WFB, ARISTOCRAT TR, ARTO TR, AVELINO WFB, BLITZ TR, CAPRICE UX, CARPE DIEM UX, CAVIAR WFB, CELESTE WFB, CHAMBORD TR, CHAMBORD UX, CHIC UX, CORSA TR, CORSA UX, DIVINO WFB, DIVO WFB, DUETTE WFB, DURANA TR, ELITE WFB, EVOLVE TR, EXCLUSIVO WFB, FIGARO NEW UX, FORTESSE SDE NEW TR, FRIVOLA WFB, GALLERIA TR, GRANATA TR, HARMONY UX, HARMONY WFB, HERCULES TR, LUCIDO WFB, LUMINA WFB, MAESTRO TR, MASTER TR, NAMIBIA UX, NEPTUNUS UX, OPTIMA SDE NEW TR, PARMA WFB, PERUGIA UX, PROGRESSA PB (=PG+productname PB), PROGRESSA TR (=PG+productname TR), PROGRESSA UX (=PG+productname UX), PROJECTA TR (=PJ+productname TR), PROJECTA UX (=PJ+productname UX), PROMENADE PB (=PM+productname PB), PROMENADE TR (=PM+productname TR), PROMENADE UX (=PM+productname UX), PROSPECTA TR (=PP+productname TR), PROSPECTA UX (=PP+productname UX), PRECIOSA WFB, PROMINENT TR, PROVIDER TR (=PV+productname TR), PROVIDER UX (=PV+productname UX), QUARTIER TR, QUARTZ NEW TR, RIVOLI TR, ROCCA TR, ROCKET TR, ROSSINI TR, ROXANE TR, ROXANE UX, RIVELLO TR (=RV+productname TR – Love Vintage Collection), SAN MARINO WFB, SATINO CASANOVA WFB, SATINO DOLCE WFB, SATINO ROMANTICA WFB, SATINO ROMEO WFB, SATINO ROSARIO WFB, SATINO ROYALE WFB, SATINO ROYCE WFB, SERENO UX, SIERRA UX, SIRIO TR, SONOS UX, SPLENDID TR, SPONTINI TR, SUBLIMO UX, TOSCANA TR, TWEED TR

Wall-to-wall-carpet group “Polyamid/Polypropylen”

CAPE TOWN WFB, CORAL UX, DESERT TWIST DELUXE WFB, DURBAN WFB, FORUM UX, RADIUS UX, ROBUST UX, STAR QUEST WFB, STAR TR FR, STAR UX, TESSINO UX, TESSUTO UX, TIGRA UX

Wall-to-wall-carpet group “Polypropylen”

ACE TF, AIM HIGH TF, ANTIGUA UX, BRAZIL TF, CADENCE TF, CASABLANCA TR, CASABLANCA UX, CASADESIGN UX, CASADESIGN WFB, CHIANTI TF, DESERT ROCK WFB, EAGLE TF, EUPHORIA WFB, GALA DESIGN CABLE TR, GALA DESIGN CABLE UX, GALA DESIGN SUPER TR, GALA DESIGN SUPER UX, GALA EDITION UX, GALA STRIPES TR, GALA STRIPES UX, GALA TR, GALA UX, GOAL TF, GOLD FIELDS TF, GRAND CRU WFB, INVERNESS TF, JAMAICA TF, KOMPAKT TR, LINUS WFB, LUCKY TWIST TF, LUNA TF, MAGNUM WFB, MONTE CRISTO TR, MOON SHADOW TF, NATURE, NATURE DESIGN, NEW BAHIA UX, NEW HEATHER TWIST TF, NEW HEATHER TWIST TR, NEW SCORPIO TF, OPUS TF, PASSAT TF, PRIMA TF, PRIMA TR, PRISMA NEW TF, PURE, RAPID TR, RIO DESIGN UX, RUSTIC TF, SENSIT HEATHERS TR, SENSIT SUPREME TR, SENSIT TWIST TR, SERENITY TF, STAINSAFE MOORLAND STRIPES TF, STAINSAFE MOORLAND STRIPES TR, STAINSAFE MOORLAND TWIST TF, STAINSAFE MOORLAND TWIST TR, STAINSAFE SHEPHERD HEATHERS TR, STAINSAFE SHEPHERD TWIST TR, STAINSAFE WOODLANDS UX, STORMOND TWIST TF, STRIKE TF, SUPERNOVA TF, SUPERSTAR TF, SUPERSTAR TR, TAMPA UX, TIMELESS TR, TRINITY TF, TYNE DALE TWIST TR, UTOPA WFB, VERSAILLES TR, VERSAILLES UX, WEAVE DECO TF, WEAVE DESIGN TF, WEAVE TEC TF, WONDERWEAVE TR, WONDERWEAVE UX

Wall-to-wall-carpet group “Sorona”

BEAUFORT WFB, DA VINCI WFB, EDISON WFB, HERON WFB, NOBEL WFB