

استانداردهای جذب صدا

Laboratory Standards and Certifications

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Mr. Upendra R. Oza
STANDARD CARPETS IND LLC
Industrial Area no.1 PO Box 27977
AE- SHARJAH
VERENIGDE ARABISCHE EMIRATEN

your delivery of
2009-05-12

your reference

our reference
PW/5484

date
Zwijnaarde, 2009-06-11

Analysis Report 68886

Required tests :

Determination of the electrical resistance
Assessment of static electrical propensity - walking test
Determination of sound absorption
Determination of impact sound insulation
Determination of thermal resistance by the guarded hot plate apparatus

Identification number	Information given by the client	Date of receipt
T905007	FRS Loop Pile Polypropylene Carpet Tile (Tetris)	2009-05-12

Petra Wittevrinkel
order responsible

For further information, please contact our sectorial adviser Jo Wynendaele

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The results of the analysis cover the received samples. Centexbel is not responsible for the representativeness of the samples.



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Analysis Report 68886

our reference date page
PW/5484 2009-06-11 2 / 6

Reference : T905007 - FRS Loop Pile Polypropylene Carpet Tile (Tetris)

Determination of the electrical resistance

1. Method:

Applied standard : ISO 10965 (year: 1998)
Deviations of the standard : -
Testing atmosphere : 23°C and 25 % relative humidity
Applied voltage : 500 Volt
Number of specimens : 3
Number of measurements : 6 (2 measurements per specimen)

2. Results:

Date of ending the test: 25-05-2009

test specimen	surface resistance in Ω	vertical resistance in Ω
1	$1,67 \times 10^{12}$	$9,43 \times 10^{11}$
2	$5,00 \times 10^{12}$	$1,35 \times 10^{12}$
3	$5,00 \times 10^{12}$	$1,28 \times 10^{13}$
4	$3,33 \times 10^{12}$	$6,58 \times 10^{11}$
5	$4,55 \times 10^{12}$	$1,28 \times 10^{12}$
6	$2,50 \times 10^{12}$	$1,25 \times 10^{12}$
geometrical mean value	$3,41 \times 10^{12} \Omega$	$1,61 \times 10^{12} \Omega$

Performed in the physical lab under the responsibility of Petra Wittevrongel.



Analysis Report 68886

our reference date page
PW/5484 2009-06-11 3 / 6

Reference : T905007 - FRS Loop Pile Polypropylene Carpet Tile (Tetris)

Assessment of static electrical propensity - walking test

1. Method:

Applied standard : ISO 6356 (year: 2000)
method by walking
Deviations of the standard : dimensions of the carpet 200 cm x 100 cm (assembly of 8
pieces of 50 cm x 50 cm)
Atmosphere for conditioning : 23°C and 25% relative humidity
Conditioning time : at least 7 days
Number of measurements : 3

2. Results:

Date of ending the test: 25-05-2009

	body voltage (kVolts)
measurement	with Neolite sole
1	0.0
2	0.1
3	0.2
average	0.1

Performed under accreditation in the physical lab under the responsibility of Philippe Lemaire.



Analysis Report 68886

our reference	date	page
PW/5484	2009-06-11	4 / 6

Reference : T905007 - FRS Loop Pile Polypropylene Carpet Tile (Tetris)

Determination of sound absorption

1. Method:

Performed in the external lab : Schall- und Wärmemeßstelle Aachen GmbH

2. Results:

Date of ending the test : 27-05-2009

See analysis report enclosed.

Centexbel is not responsible for the test results.



Analysis Report 68886

our reference	date	page
PW/5484	2009-06-11	5 / 6

Reference : T905007 - FRS Loop Pile Polypropylene Carpet Tile (Tetris)

Determination of impact sound insulation

1. Method:

Performed in the external lab : Schall- und Wärmemeßstelle Aachen GmbH

2. Results:

Date of ending the test : 27-05-2009

See analysis report enclosed.

Centexbel is not responsible for the test results.



Analysis Report 68886

our reference	date	page
PW/5484	2009-06-11	6 / 6

Reference : T905007 - FRS Loop Pile Polypropylene Carpet Tile (Tetris)

Determination of thermal resistance by the guarded hot plate apparatus

1. Method:

Performed in the external lab : Ghent University, Faculty of Engineering (Department of Textiles)

2. Results:

Date of ending the test : 29-05-2009

See analysis report enclosed.

Centexbel is not responsible for the test results.



Schall- und Wärmemeßstelle Aachen GmbH

Institut für schalltechnische und wärmetechnische Prüfungen - Beratung - Planung

SWA GmbH

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Geschäftsführung:

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Dr.-Ing. Lothar Siebel

Amtsgericht Aachen HRB 2706

Labor: Hauptstr. 133 52 477 Alsdorf

VMPA: Schallschutzprüfstelle DIN 4109
Staatlich anerkannte Sachverständige
für den Schall- u. Wärmeschutz K-Bau NRW

Bankverbindung: Sparkasse Aachen
(BLZ 390 500 00) Kto.-Nr. 11 011 194

27.05.2009

TEST REPORT NO. : CT190509B TS

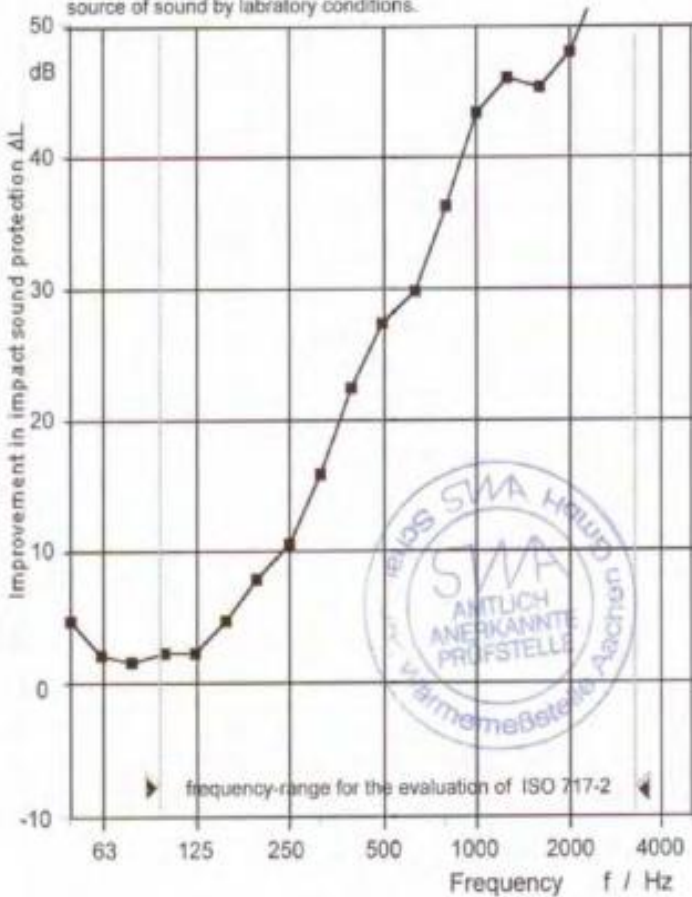
Impact sound insulation of ISO 140-8 : 1998 - 03

Date of test: 19.05.2009

Customer: CENTEXBEL

Tested material: T905007

laid loose on a 140 mm thick reinforced concrete floor slab

Test results		Enclosure TS																																																																								
Impact sound insulation of ISO 140-8 : 1998 - 03		Page 2 of 2																																																																								
Measurement of impact sound insulation by a floor covering - on a solid strings-floor																																																																										
Customer: CENTEXBEL																																																																										
Tested material: T905007																																																																										
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: 19.05.2009																																																																										
Description of the test material:																																																																										
Total thickness: - mm																																																																										
Mass / area: - kg/m²																																																																										
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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 %																																																																										
<table border="1"><thead><tr><th>Frequency</th><th>Ln</th><th>ΔL</th></tr><tr><th>Hz</th><th>Bare floor</th><th></th></tr><tr><th></th><th>dB</th><th>dB</th></tr></thead><tbody><tr><td>50</td><td></td><td>4,9</td></tr><tr><td>63</td><td></td><td>2,3</td></tr><tr><td>80</td><td></td><td>1,8</td></tr><tr><td>100</td><td>61,0</td><td>2,5</td></tr><tr><td>125</td><td>61,4</td><td>2,4</td></tr><tr><td>160</td><td>64,8</td><td>4,9</td></tr><tr><td>200</td><td>63,7</td><td>8,0</td></tr><tr><td>250</td><td>65,4</td><td>10,7</td></tr><tr><td>315</td><td>65,6</td><td>16,0</td></tr><tr><td>400</td><td>66,1</td><td>22,4</td></tr><tr><td>500</td><td>66,0</td><td>27,3</td></tr><tr><td>630</td><td>66,4</td><td>29,8</td></tr><tr><td>800</td><td>66,3</td><td>36,4</td></tr><tr><td>1000</td><td>66,2</td><td>43,4</td></tr><tr><td>1250</td><td>66,6</td><td>46,0</td></tr><tr><td>1600</td><td>67,2</td><td>45,3</td></tr><tr><td>2000</td><td>67,1</td><td>47,9</td></tr><tr><td>2500</td><td>67,0</td><td>53,7</td></tr><tr><td>3150</td><td>66,4</td><td>54,2</td></tr><tr><td>4000</td><td></td><td>---</td></tr><tr><td>5000</td><td></td><td>---</td></tr></tbody></table>			Frequency	Ln	ΔL	Hz	Bare floor			dB	dB	50		4,9	63		2,3	80		1,8	100	61,0	2,5	125	61,4	2,4	160	64,8	4,9	200	63,7	8,0	250	65,4	10,7	315	65,6	16,0	400	66,1	22,4	500	66,0	27,3	630	66,4	29,8	800	66,3	36,4	1000	66,2	43,4	1250	66,6	46,0	1600	67,2	45,3	2000	67,1	47,9	2500	67,0	53,7	3150	66,4	54,2	4000		---	5000		---
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Calculation according ISO 717-2:																																																																										
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Test report no.: CT190509B TS		SWA Schall- und Wärmemeßstelle Aachen GmbH																																																																								
Aachen 27.05.2009		(Dr.-Ing. A. Siebel) (Dr.-Ing. C. Siebel)																																																																								



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Bankverbindung: Sparkasse Aachen
(BLZ 390 500 00) Kto.-Nr. 11 011 194

27.05.2009

TEST REPORT NO. : CT190509B SA

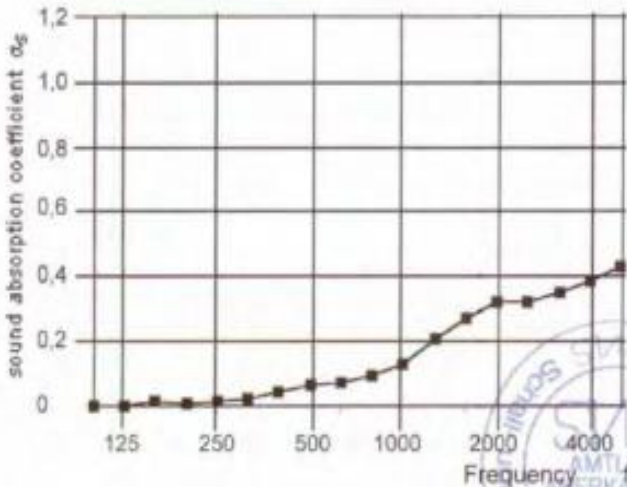
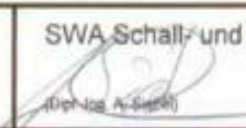
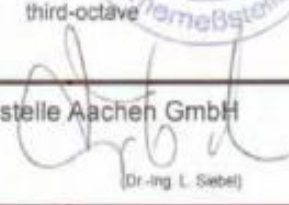
Sound absorption of DIN EN ISO 354 : 2003 - 12

Date of test: 19.05.2009

Customer: CENTEXBEL

Tested material: T905007

laid loose on the floor of the reverberation room

4. Test results		Enclosure SA														
Sound absorption DIN EN ISO 354 : 2003 - 12 Measurement of sound absorption in a reverberation room Customer: CENTEXBEL		Page 2 of 4														
Tested material: article: T905007 Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf Test area: 12,0 m ² Test method: method of reverberation room Date of test: 19.05.2009 Description of the test material: Total thickness: - mm Mass / area: - kg/m ² laid loose on the floor of the reverberation room Dimension of the test area: length: 4,00 m width: 3,00 m Reverberation room: Basic plan: trapezoid <table border="1"> <tr> <td>f / Hz</td> <td>125</td> <td>250</td> <td>500</td> <td>1000</td> <td>2000</td> <td>4000</td> </tr> <tr> <td>α_s</td> <td>0,00</td> <td>0,01</td> <td>0,06</td> <td>0,13</td> <td>0,32</td> <td>0,39</td> </tr> </table> Volume: 211 m ³ Temperature: 20 °C Humidity: 65 % Surface areas of reverberation room: 213 m ² Surface areas of reflectors in reverberation room: 54,5 m ² 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			f / Hz	125	250	500	1000	2000	4000	α_s	0,00	0,01	0,06	0,13	0,32	0,39
f / Hz	125	250	500	1000	2000	4000										
α_s	0,00	0,01	0,06	0,13	0,32	0,39										
Test report no.: CT190509B SA Aachen 27.05.2009	SWA Schall- und Wärmemeßstelle Aachen GmbH   (Dr.-Ing. A. Sauer) (Dr.-Ing. L. Seibel)															

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		Page 3 of 4														
Customer: CENTEXBEL																
Tested material: article: T905007 Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf Test area: 12,0 m² Test method: method of reverberation room Date of test: 19.05.2009 Description of the test material: Total thickness: - mm Mass / area: - kg/m² laid loose on the floor of the reverberation room																
frequency - range of the "shapeindicators" L M M H H		<table border="1"> <thead> <tr> <th>Frequency in Hz</th> <th>practical sound absorption coefficient</th> </tr> </thead> <tbody> <tr> <td>125</td> <td>0,00</td> </tr> <tr> <td>250</td> <td>0,00</td> </tr> <tr> <td>500</td> <td>0,05</td> </tr> <tr> <td>1000</td> <td>0,15</td> </tr> <tr> <td>2000</td> <td>0,30</td> </tr> <tr> <td>4000</td> <td>0,40</td> </tr> </tbody> </table>	Frequency in Hz	practical sound absorption coefficient	125	0,00	250	0,00	500	0,05	1000	0,15	2000	0,30	4000	0,40
Frequency in Hz	practical sound absorption coefficient															
125	0,00															
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Results: ———— Relation - curve: ————																
Reverberation room: Basic plan: trapezoid Volume: 211 m³ Temperature: 20 °C Humidity: 65 %																
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Evaluated sound absorptions grade α_w $\alpha_w: 0,15 (- - H) ^*)$																
*) It is recommended insistently to use this singular valuation with complete curve of sound absorption garde.																
Test report no.: CT190509B SA Aachen 27.05.2009		SWA Schall- und Wärmemeßstelle Aachen GmbH (Dipl.-Ing. A. Siebel) (Dipl.-Ing. L. Siebel)														

4.2 Test results		Enclosure SA																																																									
Reverberation times Measurement of sound absorption in a reverberation room Customer: CENTEXBEL		Page 4 of 4																																																									
Tested material: article: T905007 Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf Test area: 12,0 m² Test method: method of reverberation room Date of test: 19.05.2009 Description of the test material: Total thickness: - mm Mass / area: - kg/m² laid loose on the floor of the reverberation room Dimension of the test area: length: 4,00 m width: 3,00 m Reverberation times: <table border="1"> <thead> <tr> <th>f / Hz</th> <th>T1 / s</th> <th>T2 / s</th> </tr> </thead> <tbody> <tr><td>100</td><td>9,96</td><td>9,91</td></tr> <tr><td>125</td><td>7,82</td><td>7,79</td></tr> <tr><td>160</td><td>6,73</td><td>6,48</td></tr> <tr><td>200</td><td>7,29</td><td>7,10</td></tr> <tr><td>250</td><td>7,20</td><td>6,98</td></tr> <tr><td>315</td><td>6,22</td><td>5,95</td></tr> <tr><td>400</td><td>6,57</td><td>6,02</td></tr> <tr><td>500</td><td>6,89</td><td>6,00</td></tr> <tr><td>630</td><td>6,93</td><td>5,87</td></tr> <tr><td>800</td><td>6,55</td><td>5,39</td></tr> <tr><td>1000</td><td>6,48</td><td>5,00</td></tr> <tr><td>1250</td><td>6,31</td><td>4,34</td></tr> <tr><td>1600</td><td>5,93</td><td>3,79</td></tr> <tr><td>2000</td><td>5,42</td><td>3,38</td></tr> <tr><td>2500</td><td>4,65</td><td>3,05</td></tr> <tr><td>3150</td><td>3,99</td><td>2,68</td></tr> <tr><td>4000</td><td>3,24</td><td>2,26</td></tr> <tr><td>5000</td><td>2,59</td><td>1,86</td></tr> </tbody> </table> Number of loudspeaker positions: 2 Test sound: third-octave noise Number of microphone positions: 2 x 6 Reception filter: third-octave			f / Hz	T1 / s	T2 / s	100	9,96	9,91	125	7,82	7,79	160	6,73	6,48	200	7,29	7,10	250	7,20	6,98	315	6,22	5,95	400	6,57	6,02	500	6,89	6,00	630	6,93	5,87	800	6,55	5,39	1000	6,48	5,00	1250	6,31	4,34	1600	5,93	3,79	2000	5,42	3,38	2500	4,65	3,05	3150	3,99	2,68	4000	3,24	2,26	5000	2,59	1,86
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Test report no.: CT190509B SA Aachen 27.05.2009		SWA Schall- und Wärmemeßstelle Aachen GmbH 																																																									



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T.a.v. Hilde Depypere
Centexbel
Technologiepark 7
9052 Zwijnaarde

contact
Didier Van Daele

e-mail
didier.vandaele@UGent.be

date
29/05/2009

TEST REPORT 09-297 B

Samples received :

Order 7489: T905007
Received on 12/05/09

Aim of the test :

determination of applicability with floorheating

Test conditions :

Applicability with floorheating by means of TECOSY : one plate method

Standard: DIN 52 612 part 1 (1979)* in accordance with ISO 8302 (1991)*
Method: A sample is placed between a cold and a warm plate. The cold and the warm plate are kept at the same temperature. The quantity of energy needed to keep the warm and cold plate on temperature, is an indication for the heat transmission of the sample.
Number of tests: 2 samples (3 measurements per sample)
Test conditions: $20 \pm 2^{\circ}\text{C}$ and $65 \pm 4\%$ relative humidity

The tests were ended in week 22/2009

The test results only apply to materials that correspond to the tested sample. Forgery will be legally prosecuted, just like partial reproduction without prior written permission. Tests that are marked * are accredited, those marked * are not accredited. Advices and interpretations are not covered by the accreditation.
The department of Textiles is Notified laboratory n°1611 for the European Products directive 89/106/EC.

p. 1/2
09-297 B



Schall- und Wärmemeßstelle Aachen GmbH

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Geschäftsführung:

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Dr.-Ing. Lothar Siebel

Amtsgericht Aachen HRB 2708

Labor: Hauptstr. 133 52 477 Alsdorf

VMPA Schallschutzprüfstelle DIN 4109
Staatlich anerkannte Sachverständige
für den Schall- u. Wärmeschutz (K-Bau NRW)

Bankverbindung: Sparkasse Aachen
(BLZ 390 500 00) Kto.-Nr. 11 011 194

01.06.2010

TEST REPORT NO. : CT310510 SA

Sound absorption of DIN EN ISO 354 : 2003 - 12

Date of test: 31.05.2010

Customer: CENTEXBEL

Tested material: T004993 (non glued)

laid loose on the floor of the reverberation room

4. Test results		Enclosure SA														
Sound absorption DIN EN ISO 354 : 2003 - 12		Page 2 of 4														
Measurement of sound absorption in a reverberation room																
Customer: CENTEXBEL																
Tested material: article: T004993 (non glued) Test room: reverberation room, Hauptstraße 133, 52 477 Alsdorf Test area: 12,0 m² Test method: method of reverberation room Date of test: 31.05.2010 Description of the test material: Total thickness: - mm Mass / area: - kg/m² laid loose on the floor of the reverberation room Dimension of the test area: length: 4,00 m width: 3,00 m																
Reverberation room: Basic plan: trapezoid Volume: 211 m³ Temperature: 20 °C Humidity: 65 %																
<table border="1"> <thead> <tr> <th>f / Hz</th> <th>125</th> <th>250</th> <th>500</th> <th>1000</th> <th>2000</th> <th>4000</th> </tr> </thead> <tbody> <tr> <td>α_s</td> <td>0,00</td> <td>0,05</td> <td>0,07</td> <td>0,18</td> <td>0,36</td> <td>0,46</td> </tr> </tbody> </table>			f / Hz	125	250	500	1000	2000	4000	α_s	0,00	0,05	0,07	0,18	0,36	0,46
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α_s	0,00	0,05	0,07	0,18	0,36	0,46										
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																
sound absorption coefficient α_s frequency f / Hz Test sound: third-octave Reception filter: third-octave																
Test report no.: CT310510 SA Aachen 01.06.2010 SWA Schall- und Wärmemeßstelle Aachen GmbH (Dr. Ing. A. Sören) (Dr. Ing. S. Seifert)																

4.2 Test results		Enclosure SA																																																									
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Number of loudspeaker positions: 2 Number of microphone positions: 2 x 6 Test sound: third-octave noise Reception filter: third-octave																																																											
Test report no.: CT310510 SA Aachen 01.06.2010		SWA Schall- und Wärmemeßstelle Aachen GmbH 