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### Report

Project number : T11-33626  
Report number : T11.33626.04br

**Date**  
19-10-2011

### **Received:**

A sample of floor covering, entrance mat, marked as: “**Coral Welcome FR**”;  
TÜV sample reference: MT11-33626.02.

**Project number**  
T11-33626

**Report number**  
T11.33626.04br

### **Request:**

Classification of burning behaviour according to EN 13501-1:2007; tested while the specimen is glued to the substrate with Eurocol 540.

**Phone number client**  
+31 75 627 3273

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+31 75 627 3274

### **Test method:**

Identification parameters : EN 1307.  
Ignitability (direct impingement of flame) : EN ISO 11925-2.  
Reaction to fire (radiant panel) : EN ISO 9239-1.

**Article**  
Coral Welcome FR  
Tested glued.

### **Results:**

See page two up to and including three.

**Appendix**  
I : Flooring Radiant Panel Single  
Specimen Report – 8 pages

### **Appendix:**

See page four up to and including eleven.

TRN applies General Terms & Conditions  
which are filed at the office of the Clerk for  
civil affairs at the Court in Zutphen (the  
Netherlands) under number 35/2010,  
dated November 17th 2010.

**TEST RESULTS**
**Date**  
 19-10-2011

**Project number**  
 T11-33626

**Report number**  
 T11.33626.04br

**Article**  
 Coral Welcome FR  
 Tested glued.

**Page**  
 2/11

 ➤ *Identification parameters EN 1307:2008*

Type of manufacture : tufted  
 Type of pile : cut pile  
 Type of use surface : patterned (stripes)  
 Type of secondary backing : latex backing (synthetic)  
 Pile Fibre : 100% PA\*  
 Total mass per unit area g/m<sup>2</sup> : 2726  
 Effective pile mass, g/m<sup>2</sup> : 625  
 Total thickness, mm : 7.6  
 Thickness of the pile, mm : 4.4  
 Pile density, g/cm<sup>3</sup> : 0.14  
 Gauge (G), inch : 9/64  
 Stitches/10 cm : 29  
 Number of tufts/m<sup>2</sup> : 81,200

\* = manufacturer's declaration

 ➤ *Ignitability EN-ISO 11925-2:2010*

Conditioning time, climate : min. 3 days, 23 ± 2 °C and 50 ± 5 %  
 Date of testing : 26-09-2011  
 Description of substrate : 6 mm. Fibre cement board, 1800 kg/m<sup>3</sup>.  
 Flame application : Surface.  
 Application time : 15 seconds.

Direction:	In production			Across production		
Total burning time <sup>1</sup> (15 s)	15	15	15	15	15	15
Flame tip reaches 150 mm (s)	no	no	no	no	no	no
Extent of damaged area, length (mm)	73	71	70	69	72	70
Extent of damaged area, width (mm)	15	15	15	14	14	15
Material melts (yes/no)	yes	yes	yes	yes	yes	yes
Shrinks away <sup>2</sup> (yes/no)	no	no	no	no	no	no
Glowing <sup>3</sup> (sec)	no	no	no	no	no	no
Flaming debris (yes/no)	no	no	no	no	no	no
Ignition of filter paper (yes/no)	no	no	no	no	no	no

1 Inclusive a flame application time of 15 or 30 seconds with surface or edge impingement

2 Shrinks away from flame without being ignited

3 The time at which it occurs and its duration

## TEST RESULTS – follow-up

➤ *Radiant Panel test ISO 9239-1:2010*

Date of testing : 04-10-2011(1+2) and 17-10-2011 (3+4)  
Conditioning time, climate : 5 days, 23 ± 2 °C and 50 ± 5 %  
Description of substrate : Fibre cement board, 8±2 mm ,1800±200 kg/m<sup>3</sup>  
conforming to EN 13238.  
Sampling procedure : by contractor.  
Description of cleaning used : none.  
Fixing method : fixed with Eurocol 540.

Date  
19-10-2011

Project number  
T11-33626

Report number  
T11.33626.04br

Article  
Coral Welcome FR  
Tested glued.

Page  
3/11

Test specimen, orientation	Flame spread (cm)	CRF (kW/m <sup>2</sup> )	Peak light attenuation (%)	Smoke production (%.min)
1, ⊥	5.0	≥10.9	0.8	3
2, ↑	5.0	≥10.9	0.8	4
3, ↑	6.0	≥10.9	1.5	6
4, ↑	5.0	≥10.9	0.9	4
<b>Mean</b>	<b>5.3</b>	<b>≥10.9</b>	<b>1.1</b>	<b>5</b>

Remarks: no flashing, transitory- or sustained flaming,  
\* specimen extinguished naturally

## CONCLUSION

According to EN 13501:2007 the tested sample of the aforementioned quality **Coral Welcome FR fixed with Eurocol 540** meets the requirements of **Class B<sub>fl</sub> - s1**.

### Statement

The test results relate to the behaviour of the test specimens of the examined product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

The validity of this report will expire five years after its issue or directly after alterations or modifications of the examined product (combination)(s) and/or the criteria. This report shall not be reproduced, except in full, without the written approval of the testing laboratory.

Author:  
Mrs. I. Pierik

Review: *b.a. R. Boerboom*  
Mr. J. Brinks

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## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

**Project number**  
T11-33626

Report produced with the Fire Testing Technology FRPSoft software

Page 1  
**Report number**  
T11.33626.04br

### Flooring Radiant Panel Single Specimen Report

**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
4/11

Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : Forbo Flooring Coral - Welcome FR - T11-33626 -  
glued with Eurocol 540 @ 27-10-2011  
Date of test : Oct. 04 2011  
Specimen description : MT11-33626.02  
Test name : Prod #1  
File name : D:\FRPFILES\11100007.CSV  
Test number in series : 4  
Flux calibration file name : C:\FRPSOFT\CALIB\FLX11004.CSV  
Thickness (mm) :  
Density (kg/m<sup>3</sup>) :  
Test duration : 12 minutes 17 seconds (737 s)  
Substrate used? : Yes  
Substrate : Calcium silicate  
Fixing method : adhesive  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 14 seconds (134 s)  
Time to flameout : 12 minutes 15 seconds (735 s)  
Extent of burning (mm) : 50  
Critical flux at extinguishment (kW/m<sup>2</sup>) : >= 10.9  
HF-10 (kW/m<sup>2</sup>) : >= 10.9  
HF-20 (kW/m<sup>2</sup>) : >= 10.9  
HF-30 (kW/m<sup>2</sup>) : >= 10.9  
Flame spread at 10 minutes (mm) : 50  
Flame spread at 20 minutes (mm) : -1  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 0.78  
Time to peak light attenuation : 8 minutes 15 seconds (495 s)  
Total integrated smoke (%.min) : 3.02  
**Potential classification** : A2(f1)/B(f1)  
**Smoke production classification** : s1

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

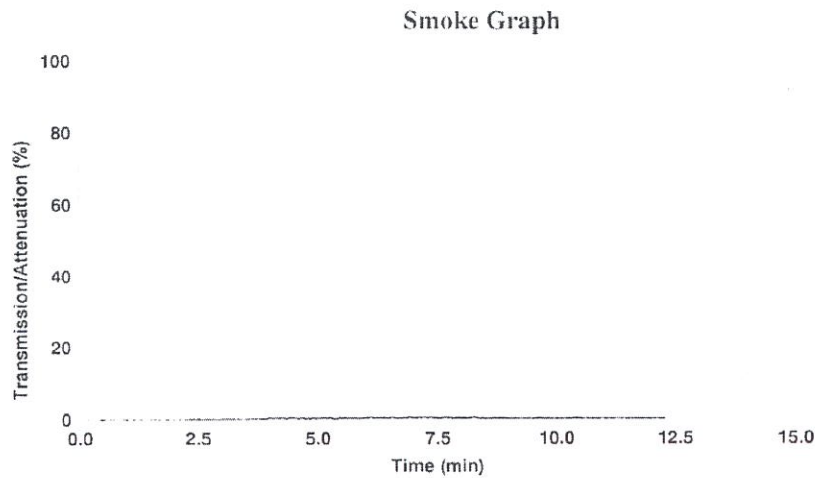
**Project number**  
T11-33626

Report produced with the Fire Testing Technology FRPSoft software

page 1 **Report number**  
T11.33626.04br

**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
5/11



Test name : Prod #1  
File name : D:\FRPFILES\11100007.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	-	11.3	-	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	9.9	-	610	-	2.6	-
210	-	9.1	-	660	-	2.2	-
260	-	8.1	-	710	-	1.8	-
310	-	7.1	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.3	-	910	-	1.2	-

### Comments

Specimen extinguished naturally.

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

## APPENDIX I: Flooring Radiant Panel Single Specimen Report

Report produced with the Fire Testing Technology FRPSoft software

page 1

**Date**  
19-10-2011

**Project number**  
T11-33626

**Report number**  
T11.33626.04br

**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
6/11

### Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002  
Laboratory : TÜV Rheinland Nederland B.V.  
Sponsor : Forbo Flooring Coral - Welcome FR - T11-33626 -  
glued with Eurocol 540 @ 27-10-2011  
Date of test : Oct. 04 2011  
Specimen description : MT11-33626.02  
Test name : Across #1  
File name : D:\FRPFILES\11100008.CSV  
Test number in series : 4  
Flux calibration file name : C:\FRPSOFT\CALIB\FLX11004.CSV  
Thickness (mm) :  
Density (kg/m<sup>3</sup>) :  
Test duration : 12 minutes 42 seconds (762 s)  
Substrate used? : Yes  
Substrate : Calcium silicate  
Fixing method : adhesive  
Conditioned? : Yes  
Conditioning temp. (°C) : 23  
Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 03 seconds (123 s)  
Time to flameout : 12 minutes 36 seconds (756 s)  
Extent of burning (mm) : 50  
Critical flux at extinguishment (kW/m<sup>2</sup>) : >= 10,9  
HF-10 (kW/m<sup>2</sup>) : >= 10,9  
HF-20 (kW/m<sup>2</sup>) : >= 10,9  
HF-30 (kW/m<sup>2</sup>) : >= 10,9  
Flame spread at 10 minutes (mm) : 50  
Flame spread at 20 minutes (mm) : -1  
Flame spread at 30 minutes (mm) : -1  
Peak light attenuation (%) : 0,79  
Time to peak light attenuation : 8 minutes 03 seconds (483 s)  
Total integrated smoke (%.min) : 4,36  
**Potential classification** : **A2(f1)/B(f1)**  
**Smoke production classification** : **s1**

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

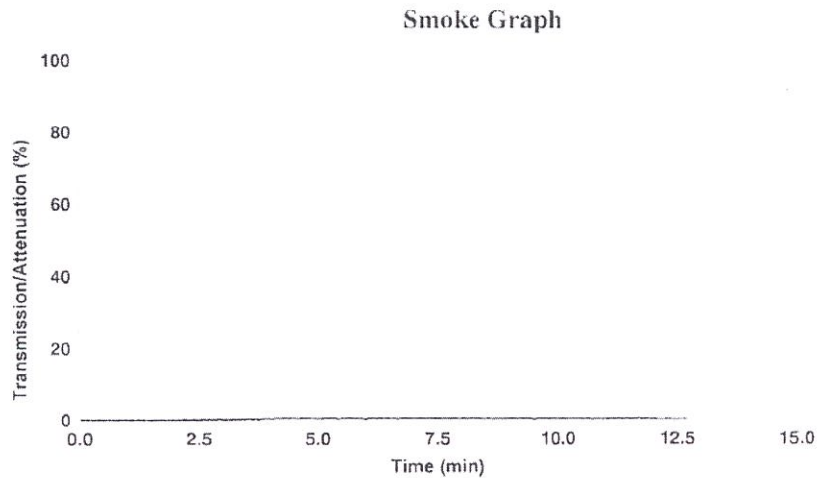
**Project number**  
T11-33626

Report produced with the Fire Testing Technology FRPSoft software

**Report number**  
T11.33626.04br

**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
7/11



Test name : Across #1  
File name : D:\FRPFILES\11100008.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	-	11.3	-	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	9.9	-	610	-	2.6	-
210	-	9.1	-	660	-	2.2	-
260	-	8.1	-	710	-	1.8	-
310	-	7.1	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.3	-	910	-	1.2	-

### Comments

Specimen extinguished naturally.

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## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

**Project number**  
T11-33626

Report produced with the Fire Testing Technology FRPSoft software

page 1

**Report number**  
T11.33626.04br

### Flooring Radiant Panel Single Specimen Report

**Article**  
Coral Welcome FR  
Tested glued.

Standard : EN ISO 9239-1:2002  
 Laboratory : TÜV Rheinland Nederland B.V.  
 Sponsor : Forob Flooring Coral - Coral Welcome FR - T11-33626 -  
 GLUED  
 Date of test : Oct. 17 2011

**Page**  
8/11

Specimen description : MT11.33626.02  
 Test name : Across #2  
 File name : D:\FRPFILES\11100015.CSV  
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX11004.CSV

Thickness (mm) :  
 Density (kg/m<sup>3</sup>) :

Test duration : 12 minutes 08 seconds (728 s)  
 Substrate used? : Yes  
 Substrate : Calcium silicate  
 Fixing method : adhesive  
 Conditioned? : Yes  
 Conditioning temp. (°C) : 23  
 Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 01 seconds (121 s)  
 Time to flameout : 12 minutes 06 seconds (726 s)  
 Extent of burning (mm) : 60  
 Critical flux at extinguishment (kW/m<sup>2</sup>) : >= 10.9  
 HF-10 (kW/m<sup>2</sup>) : >= 10.9  
 HF-20 (kW/m<sup>2</sup>) : >= 10.9  
 HF-30 (kW/m<sup>2</sup>) : >= 10.9  
 Flame spread at 10 minutes (mm) : 60  
 Flame spread at 20 minutes (mm) : -1  
 Flame spread at 30 minutes (mm) : -1  
 Peak light attenuation (%) : 1.47  
 Time to peak light attenuation : 5 minutes 32 seconds (332 s)  
 Total integrated smoke (%.min) : 6.29  
**Potential classification** : A2(f)/B(f)  
**Smoke production classification** : s1

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test, they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.



## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

**Project number**  
T11-33626

**Report number**  
T11.33626.04br

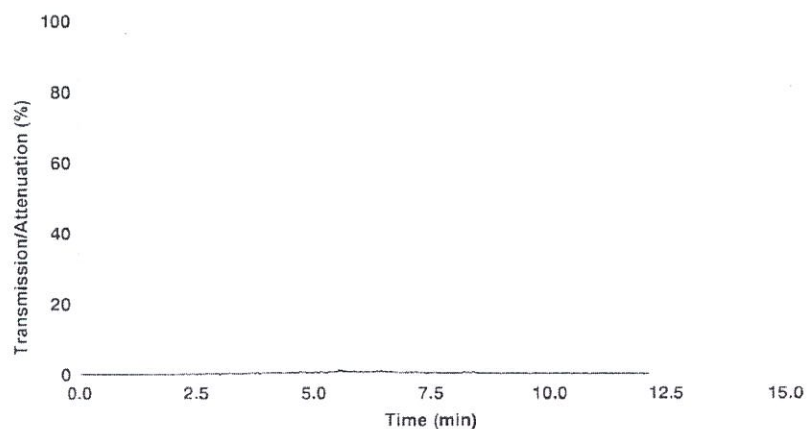
**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
9/11

Report produced with the Fire Testing Technology FRTSoft software

page 1

### Smoke Graph



Test name : Across #2  
File name : D:\FRPFILES\11100015.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	501	11.3	5.282	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	9.9	-	610	-	2.6	-
210	-	9.1	-	660	-	2.2	-
260	-	8.1	-	710	-	1.8	-
310	-	7.1	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.3	-	910	-	1.2	-

### Comments

Specimen extinguished naturally.

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## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

**Project number**  
T11-33626

**Report number**  
T11.33626.04br

**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
10/11

Report produced with the Fire Testing Technology FRPSoft software

page 1

### Flooring Radiant Panel Single Specimen Report

Standard : EN ISO 9239-1:2002  
 Laboratory : TÜV Rheinland Nederland B.V.  
 Sponsor : Forob Flooring Coral - Coral Welcome FR - T11-33626 -  
 GLUED  
 Date of test : Oct. 17 2011

Specimen description : MT11.33626.02  
 Test name : Across #3  
 File name : D:\FRPFILES\11100016.CSV  
 Test number in series : 4

Flux calibration file name : C:\FRPSOFT\CALIB\FLX11004.CSV

Thickness (mm) :  
 Density (kg/m<sup>3</sup>) :

Test duration : 12 minutes 10 seconds (730 s)  
 Substrate used? : Yes  
 Substrate : Calcium silicate  
 Fixing method : adhesive  
 Conditioned? : Yes  
 Conditioning temp. (°C) : 23  
 Conditioning RH (%) : 50

#### Test Results

Time to ignition : 2 minutes 01 seconds (121 s)  
 Time to flameout : 12 minutes 08 seconds (728 s)  
 Extent of burning (mm) : 50  
 Critical flux at extinguishment (kW/m<sup>2</sup>) : >= 10.9  
 HF-10 (kW/m<sup>2</sup>) : >= 10.9  
 HF-20 (kW/m<sup>2</sup>) : >= 10.9  
 HF-30 (kW/m<sup>2</sup>) : >= 10.9  
 Flame spread at 10 minutes (mm) : 50  
 Flame spread at 20 minutes (mm) : -1  
 Flame spread at 30 minutes (mm) : -1  
 Peak light attenuation (%) : 0.91  
 Time to peak light attenuation : 4 minutes 31 seconds (271 s)  
 Total integrated smoke (%.min) : 4.25  
**Potential classification** : **A2(fl)/B(fl)**  
**Smoke production classification** : **s1**

These results relate only to the behaviour of the specimens of the product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.

## APPENDIX I: Flooring Radiant Panel Single Specimen Report

**Date**  
19-10-2011

**Project number**  
T11-33626

**Report number**  
T11.33626.04br

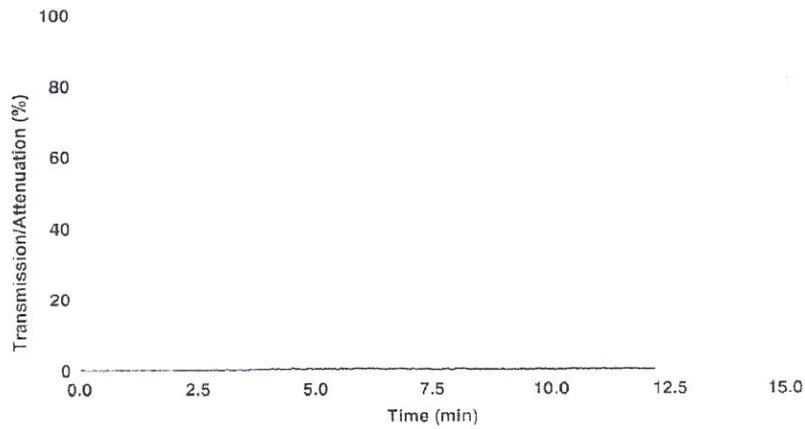
**Article**  
Coral Welcome FR  
Tested glued.

**Page**  
11/11

Report produced with the Fire Testing Technology FRFSOft software

page 1

### Smoke Graph



Test name : Across #3  
File name : D:\FRPFILES\11100016.CSV

### Rake Results

Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )	Position (mm)	Time (s)	Flux (kW/m <sup>2</sup> )	Qsb (MJ/m <sup>2</sup> )
60	-	11.3	-	510	-	3.7	-
110	-	10.5	-	560	-	3.1	-
160	-	9.9	-	610	-	2.6	-
210	-	9.1	-	660	-	2.2	-
260	-	8.1	-	710	-	1.8	-
310	-	7.1	-	760	-	1.6	-
360	-	6.1	-	810	-	1.4	-
410	-	5.2	-	860	-	1.3	-
460	-	4.3	-	910	-	1.2	-

### Comments

Specimen extinguished naturally.

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