



TEST REPORT

No. : XMIN190902230CCM

Date : Sep.29, 2019

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CUSTOMER NAME: A. BERGER GMBH
ADDRESS: WEYERHOFSTRAÙE 68/E49, 47803 KREFELD, GERMANY

Sample Name : 4280-2665-BB BE.TEX® ZEBRA BLACKBACK FR
Product Specification : 245 g/m²
0.38mm thickness white with black back
Manufacturer : A. Berger GmbH
Buyer : A. Berger GmbH
Material and Mark : 100% Polyester with PA & FR coating

Above information and sample(s) was/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No. : SDFS1909005935FF
Date of Receipt : Sep.16, 2019
Testing Start Date : Sep.17, 2019
Testing End Date : Sep.29, 2019
Test result(s) : For further details, please refer to the following page(s)
(Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Test Result Summary

No.	Test(s) Requested	Result(s)
1	DIN 4102-1:1998-05	The sample tested meets the requirements of class B1 of DIN 4102-1:1998-05 Clause 6.
2	EN 13501-1:2018 Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests	Classification: B-s1, d0

For further details, please refer to the following page(s)

***** To be continued*****

Signed for
SGS-CSTC Standards Technical
Services Co., Ltd Xiamen Branch
Testing Center

Civi Huang
Authorized signatory



SGS-CSTC Standards Technical Services Co., Ltd.
Xiamen Branch Testing Center Commercial Construction Material Laboratory

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Test 1

TESTS AND RESULTS

Test Conducted:

These tests are conducted in DIN 4102-1:1998-05 Clause 6 Class B building materials according to the application.

Conditioning:

Temperature: (23±2)°C; Relative Humidity: (50±6)%; Duration:240 h;

Test Requirement:

All materials, except flooring, may be classed as B1 materials if they
 – withstand the test specified in DIN 4102-16 using the 'Brandschacht' apparatus specified in DIN 4102-15, and
 – meet the requirements for class B2 materials.

The test using the 'Brandschacht' apparatus described in DIN 4102-15 (cf. subclause 6.1.3.1) shall be deemed passed if

- the mean value for the residual length (portion of specimen that has not burned or charred; cf. subclause 9.1 of DIN 4102-16) of each specimen is at least 15 cm and no individual values are lower than 0 cm,
- the mean effluent temperature does not exceed 200 °C in any test,
- the requirement for the residual length of each specimen is met even where there is afterflame, afterglow, or smouldering.

Test Results:

1.DIN 4102-1 B2 Test Result

Parameter	Results									
	Bottom edge ignition					Surface ignition				
	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Specimen ignition (Yes/No)	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*	Yes*
Ignition ceased time(s)	-	-	-	-	-	-	-	-	-	-
If flame tip reached 150mm line/40,190mm line(Yes/No)	No	No	No	No	No	No	No	No	No	No
Ignition time to reached 150mm line/40,190mm line(s)	-	-	-	-	-	-	-	-	-	-
Filter paper ignition (Yes/No)	No	No	No	No	No	No	No	No	No	No
Smoke developments	Slight smoke					Slight smoke				

Remark: *--The specimen was ignited but self-extinguished after removed the burner.

***** To be continued*****



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Class B2 Test requirement:

This test shall be deemed passed if, for any of the five specimens tested, flaming does not reach the gauge mark within 20 seconds after flame application, either with bottom edge ignition or surface ignition.

Sub-conclusion: Pass

2.Additional DIN4102-16 Test Result

Group 1:

Parameter	Results				
	#1	#2	#3	#4	Average value
Remaining length (cm)	62	59	60	59	60
Max. flue gas temperature (°C)	89				
After flame / after glow (s)	0				
Other observation	Charring				

Remark: According to DIN 4102-16 Clause 5.2, if the residual length measured after the first test is 45cm or greater, further tests are not required.

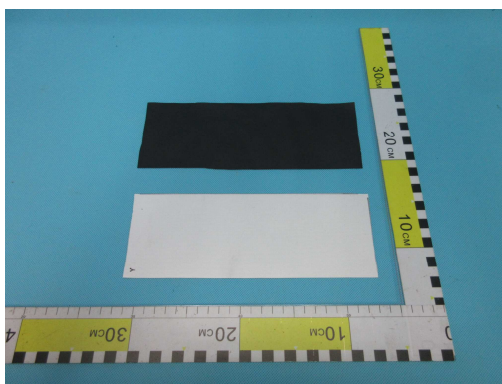
Sub-conclusion: Pass

Conclusions:

The sample tested meets the requirements of class B1 of DIN 4102-1:1998-05 Clause 6.

SAMPLE INFORMATION AND PICTURES

Area Density: About 242g/m²



***** To be continued*****



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Test 2

TESTS AND RESULTS

Test Conducted:

This test is conducted as per EN 13501-1:2018 Fire classification of construction products and building elements-Part 1: Classification using data from reaction to fire tests. And the test methods as following:

1. EN 13823:2010+A1:2014 Reaction to fire tests for building products-Building products excluding floorings exposed to the thermal attack by a single burning item.
2. EN ISO 11925-2:2010+AC:2011 Reaction to fire tests-Ignitability of building products subjected to direct impingement of flame-Part 2: Single-flame source test.

Mounting and fixing (For EN 13823:2010+A1:2014):

Test sample is installed on the substrate by glue (test substrates for calcium silicate board, the density of 900 kg/m³ Use glue brand: RUBSTIK; Applying the amount: About 200g/m²).

Test Results:

Test method	Parameter	Number of tests	Results
EN 13823:2010+A1:2014	FIGRA _{0.2MJ} (W/s)	3	41.6
	FIGRA _{0.4MJ} (W/s)		32.6
	THR _{600s} (MJ)		0.4
	SMOGRA (m ² /s ²)		2.5
	TSP _{600s} (m ²)		11.8
	LFS < edge of specimen		Yes
	Flaming particles or droplets		No
EN ISO 11925-2:2010+AC:2011 Exposure = 30 s	F _s ≤ 150 mm	12	Yes
	Ignition of the filter paper		No

Remark:

FIGRA-Fire growth rate index used for classification purposes [W/s]

For the classes A2 and B, FIGRA_{0.2MJ}

For the classes C and D, FIGRA_{0.4MJ}

LFS-Lateral flame spread [m]

THR_{600s}-Total heat release within 600 s [MJ]

SMOGRA-Smoke growth rate [m²/s²]

TSP_{600s}-Total smoke production within 600 s [m²]

Classification and direct field of application:

This classification has been carried out in accordance with **EN 13501-1:2018**.

***** To be continued*****



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Classification:

Fire behaviour		Smoke production			Flaming droplets	
B	—	s	1	,	d	0

Remark:

The classes with their corresponding fire performance are given in Table 1.
Reaction to fire classification is based on the 7-step scale of A1 to F, where A1 is good and F is bad

Statement:

The test results relate to the behaviour of the test specimens of a 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.

Warning:

This classification report does not represent type approval or certification of the product.
The test laboratory has, therefore, play no part in sampling the product for the test, although it holds appropriate references to the manufacturer's factory production control that is aimed to be relevant to the samples tested and that will provide for their traceability.

***** To be continued*****



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Table 1 — Classes of reaction to fire performance for construction products excluding floorings and linear pipe thermal insulation products.

Class	Test method(s)	Classification criteria	Additional classification
A1	EN ISO 1182 ^a and	$\Delta T \leq 30^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f = 0$ (i.e. no sustained flaming)	-
	EN ISO 1716	$PCS \leq 2.0 \text{ MJ/kg}$ ^a and $PCS \leq 2.0 \text{ MJ/kg}$ ^{b,c} and $PCS \leq 1.4 \text{ MJ/m}^2$ ^d and $PCS \leq 2.0 \text{ MJ/kg}$ ^e	-
A2	EN ISO 1182 ^a or	and $\Delta T \leq 50^\circ\text{C}$, and $\Delta m \leq 50\%$, and $t_f \leq 20 \text{ s}$ $PCS \leq 3.0 \text{ MJ/kg}$ ^a and $PCS \leq 4.0 \text{ MJ/m}^2$ ^b and $PCS \leq 4.0 \text{ MJ/m}^2$ ^d and $PCS \leq 3.0 \text{ MJ/kg}$ ^e	-
	EN ISO 1716		-
	EN 13823	$FIGRA \leq 120 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5 \text{ MJ}$	Smoke production ^f and Flaming droplets/particles ^g
B	EN 13823 and	$FIGRA \leq 120 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 7.5 \text{ MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150 \text{ mm}$ within 60 s	
C	EN 13823 and	$FIGRA \leq 250 \text{ W/s}$ and $LFS < \text{edge of specimen}$ and $THR_{600s} \leq 15 \text{ MJ}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150 \text{ mm}$ within 60 s	
D	EN 13823 and	$FIGRA \leq 750 \text{ W/s}$	Smoke production ^f and Flaming droplets/particles ^g
	EN ISO 11925-2 ⁱ Exposure = 30s	$F_s \leq 150 \text{ mm}$ within 60 s	

***** To be continued *****



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Class	Test method(s)	Classification criteria	Additional classification
E	EN ISO 11925-2 ⁱ Exposure =15s	Fs≤150mm within 20 s	flaming droplets/particles ^h
F	EN ISO 11925-2 ⁱ Exposure =15s	Fs>150mm within 20 s	-

^a For homogeneous products and substantial components of non-homogeneous products.
^b For any external non-substantial component of non-homogeneous products.
^c Alternatively, any external non-substantial component having a PCS ≤ 2,0 MJ/m², provided that the product satisfies the following criteria of EN 13823: FIGRA ≤ 20 W/s, and LFS < edge of specimen, and THR_{600s} ≤ 4,0 MJ, and s1, and d0.
^d For any internal non-substantial component of non-homogeneous products.
^e For the product as a whole.
^f In the last phase of the development of the test procedure, modifications of the smoke measurement system have been introduced, the effect of which needs further investigation. This may result in a modification of the limit values and/or parameters for the evaluation of the smoke production.
s1 = SMOGRA ≤ 30m²/s² and TSP_{600s} ≤ 50m²; s2 = SMOGRA ≤ 180m²/s² and TSP_{600s} ≤ 200m²; s3 = not s1 or s2
^g d0 = No flaming droplets/ particles in EN 13823 within 600 s;
d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s;
d2 = not d0 or d1.
Ignition of the paper in EN ISO 11925-2 results in a d2 classification.
^h Pass = no ignition of the paper (no classification);
Fail = ignition of the paper (d2 classification).
ⁱ Under conditions of surface flame attack and, if appropriate to the end-use application of the product, edge flame attack.

Note: The above test was carried out by SGS-CSTC Standards Technical Services Co., Ltd. Shunde Branch.

***** To be continued *****



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SAMPLE INFORMATION AND PICTURES

Mass per unit area: About 242g/m²



Before Test (EN 13823)



After Test (EN 13823)

SGS authenticate the photos on original report only

***** End of report*****



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