for the proof of fire behaviour according to DIN 4102-1

FIRE LABS
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PÜZ-Stelle (LBO): BRA09

Reference: FLT 3770722 (Translation of the German Prüfzeugnis - no guarantee for translation of technical terms)

Client: Antalis GmbH
Europaallee 19
D - 50226 Frechen

Order: 2022-01-20 **Arrived:** 2022-01-24

Description of sample: On one side coated fleece to be used as wall-covering, named "**COALA Walldesign Ultimatt 130**".
(for details see page 2)

Delivered: 2022-01-20

Content of request: Proof of flammability to classify building materials to class B1 "schwerentflammbar" according to DIN 4102-1

Assessment: The examined material, bonded to solid mineral substrates or to gypsum plaster boards, meets the requirements of class B1 for "schwerentflammbare" (not easily flammable) building materials according to DIN 4102-1.
(For details see page 5.)

Validity of report: 2027-02-27

Sampling: The sample material was sent to the laboratory by the client.

Remark: If the above-mentioned building material is not used as product according to MBO § 2, there is no need for a general building supervisory test certificate.

This test certificate is not regarded as the sole proof if the tested building material is used as building product within the meaning of state building prescriptions (MBO § 17).

This test certificate does not replace an eventually necessary proof of applicability concerning building supervisory or building laws in the meaning of state building prescriptions.
This has to be verified by:

- "allgemeine bauaufsichtliche Zulassung" (general building inspectorate approval) or by
- "allgemeines bauaufsichtliches Prüfzeugnis (general building inspectorate certificate) or by
- "Zustimmung im Einzelfall (exceptional approval).

This test certificate can serve as a basis for building supervisory procedures for:

- regulated building products for the pre scribed proofs of conformity
- non-regulated building products for the needed proofs of applicability.

TEST CERTIFICATE

This test certificate comprises 5 pages and 2 enclosures.

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1 Test material

1.1 Description according to the client

The material provided is a spunbonded nonwoven, mainly consisting of cellulose fibers and textile fibers with a printable coating on one side. The material is intended to be used inside of buildings, glued with a wallpaper paste based on methyl cellulose, on solid mineral substrates or on gypsum plasterboards, as printable wall covering. The material was named by the client with the trade name "COALA Walldesign Ultimatt 130".

1.2 Description of the delivered material

For the tests, a sample roll of a one-sided colour-coated nonwoven material of approx. 2.2 m in length and 0.92 cm in width was sent to the laboratory by the client. The sample was marked with the trade and sample width.

Colour: White, white coated outside of roll.
Characteristic values: see table 1; photos: see enclosures.
Other specifications are not known to the laboratory, a sample is stored.

2 Preparation of samples

For the tests in the fire shaft ("Brandschacht") 2 specimens were assembled. The samples (dimensions 1000 mm x 190 mm) of test specimen A were taken in the longitudinal direction, the samples for the test specimen B in transverse direction of the coated material. The tests were carried out glued on one side to 12.5 mm thick gypsum plasterboards (GKB, class DIN 4102-A2). A commercial wallpaper paste (methyl cellulose, 50 g/l water) with a wet application quantity of approx. 190 g/m^2 was applied to the gypsum plasterboards and the uncoated side of the material was glued to the boards.

For the small burner tests ("Brennkastenprüfungen") samples for edge flame exposure (dimensions 190 mm x 90 mm) and samples for surface flame exposure (dimensions 230 mm x 90 mm) have been cut in longitudinal and transverse direction of the coated material and were glued onto one side to gypsum plasterboards (GKB, thickness 12.5 mm, class DIN 4102-A2) of the same size in the same procedure.
All samples were kept in a climate chamber acc. DIN 50014-23/50-2 until they reached constant weight before testing.

3 Test procedure

The tests in the fire shaft ("Brandschacht") have been performed acc. DIN 4102-1 and -16 (building materials class B1). The small burner tests ("Brennkastenprüfungen") have been performed acc. DIN 4102-1, chapter 6.2.5 (building materials class B2).

Test period: February 2022.

4 Results

- section 4.1 Material characteristics
- section 4.2.1 Test results of the small burner tests
- section 4.2.2 Test results of the tests in the fire shaft

4.1 Material characteristics

Table 1

Trade name	Manufacturer's data		Measured values (m.v.)		
	Thickness [mm]	Mass per unit area [g/m^2]	Thickness [mm] (m.v.)	s	Mass per unit area [g/m^2]
COALA Walldesign Ultimatt 130	0.165	130	0.18	0.004	133

m.v. mean value (n=10)
s standard deviation

4.2 Results of the fire behaviour

4.2.1 Test results class B2 (Brennkasten)

According DIN 4102-1 all building materials class B1 must also meet the requirements of materials class B2 (low flammable). The material, tested in "Brennkasten" acc. DIN 50 050 meets the requirements class B2; the material did not show burning particles / droplets (Results: see enclosure 2).

4.2.2 Test results class B1 (Brandschacht)

Table 3

Test results "Brandschachtprüfung" (part 1)						
line no.	Measurement	Test results				require-ments
		A	B	C	D	
1	Number of specimen arrangement acc. DIN 4102 –15 Table 1	7	7	-	-	
2	Maximal flame height above bottom edge ..... cm	50	50	-	-	
3	Time [1] ..... min	1	1			*)
4	Burning / melting through Time [1] .....min	./.	./.	-	-	
5	Back side of the specimens: Flames / glowing Time [1] .....min	./.	./.	-	-	
6	Discolouring Time [1] .....min	./.	./.	-	-	
7	Falling of burning droplets Begin [1].....min:s	No	No	-	-	
8	Extend: Sporadic falling of burning droplets					
9	Continuous falling of burning droplets					
10	Falling of burning parts Begin [1].....min:s	No	No	-	-	
11	Extend: Sporadic falling of burning parts					
12	Continuous falling of burning parts					
13	Afterflame time at the bottom of thesieve (max.). .....min:s	./.	./.	-	-	
14	Impairment of the burner flames by dropping or falling Material Time [1] .....min:s	No	No	-	-	
15	Premature end of test Final occurrence of burning at the specimen [1].....min	No 10	No 10	-	-	
16	Time of eventually end of test [1] .....min:s	./.	./.			

[1] Indication of time: from the beginning of testing procedure
- Not tested
. /. Not occurred
*) No cause for complaint

Test results "Brandschachtprüfung" (part 2)						
line no.	Measurement	Test results				require-ments
		A	B	C	D	
	Afterflame after end of test	No	No	-	-	
17	Time .....min:s					
18	Number of specimen					
19	Front side of specimen					
20	Back side of specimen					
21	Flame length .....cm					
	Afterglow after end of test	No	No	-	-	
22	Time .....min:s					
23	Number of specimen					
	Place of appearance:					
24	Lower half of specimen					
25	Upper half of specimen					
26	Front side of specimen					
27	Back side of specimen					
	Smoke density					
28	≤ 400 % min	0.7	1.7	-	-	
29	≥ 400 % min (very strong smoke density)	./.	./.			
30	Diagram fig. no.	1	3			
	Residual length					
31	Individual value .....cm	57	53	-	-	
		54	54	-	-	> 0
		52	57	-	-	
		54	55	-	-	
32	Average value .....cm	**54**	**54**	-	-	≥ 15
33	Photo of the test specimen fig. no.	2	4			
	Flue gas temperature					
34	Maximum of average value...°C	106	105	-	-	≤ 200
35	Time [1] .....min:s	9:36	9:54	-	-	
36	Diagram fig. no.	1	3			
37	Remarks: line 32: Due to the residual length of the samples of ≥ 45 cm no additional tests were proceeded (DIN 4102-16: 2015-09, 5.2 b)). Diagrams and photos see enclosure 1.					

1) indication of time: from the beginning of testing procedure
- not tested
. /. not occurred
*) no cause for complaint

Specimen	Test-No.	Trade name	Orientation of samples	Substrate
A	770722-001	COALA Walldesign Ultimatt 130	longitudinal	Gypsum boards
B	770722-002		transversal	

5 Assessment

According to the test results in section 4.2 the material, described in section 1 and 4.1, fulfils the requirements of a building material class B1 according to DIN 4102-1, if the material is used on solid mineral substrates with a gross density ≥ 650 kg/m^3 and a thickness ≥ 11 mm or gypsum plaster boards (non-perforated).

The requirements of building materials class B2 are also fulfilled. No falling of burning parts or droplets occurred during these tests.

This test report is not valid

- for the exposure to outdoor climate conditions
- with printed surface.

This test certificate does not apply if the material described in section 1 is used in a freely suspended arrangement.

6 Special remarks

This certificate is only valid for the material as described under paragraph 1 and 4.1. In combination with other materials or additional coatings or surfaces etc. the burning behaviour may differ.
This test certificate is not regarded as the sole proof if the tested building material is used as building product within the meaning of state building prescriptions (MBO § 17).
This test certificate is no substitute for a General Building Inspectorate Certificate and is granted without prejudice to the rights of third parties, or particular private proprietary rights.

This test certificate can serve as a basis for building supervisory procedures for:

- regulated building products for the pre scribed proofs of conformity
- non-regulated building products for the needed proofs of applicability.

The explanations given in DIN 4102-1 app. D, especially concerning an external production control have to be considered.
This test certificate is valid until 2027-02-27, provided that the test methods, the classification rules and the technology do not change during this period.

Borkheide, 28th February 2022

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Head of the test laboratory
(Dipl.-Ing. Uwe Kühnast)

This translation was issued the 28th February 2022, in a case of doubt the German version is valid solely.

Test results small burner test

Table 2

	longitudinal						transversal						dim.	require-ments
Sample-No.	1	2	3	4	5	6	1	2	3	4	5	6	-	-
Ignition of the sample	8	3	5	4	3	./.	3	2	2	4	6	./.	s	-
Maximum flame height	2	2	2	2	2	./.	2	2	2	2	2	./.	cm	-
Time of the maximum	15	15	15	15	15	./.	15	15	15	15	15	./.	-	-
Flame tip has reached the 150 mm mark	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	s	≥ 20
Flames extinguished	16	16	16	16	16	./.	16	16	16	16	16	./.	s	-
Ignition of filter paper	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	s	[1]
Smoke density (visual)	very low						very low						-	./.
Afterburning time	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	s	-
View of the samples after the test (20 seconds after exposure the flame): The samples were destroyed in the area of the flame attack point and on the surface up to a height of approx. 3 mm and a width of approx. 1 cm, discolored above about 2.5 cm														

Samples 1-5: edge flame exposure
Samples 6: surface flame exposure

[1] No ignition within 20 seconds
./. Not occurred
dim. Dimension
Indication of time: from the beginning of testing procedure
Indication of measurements: from reference line of the flame

Test specimen A

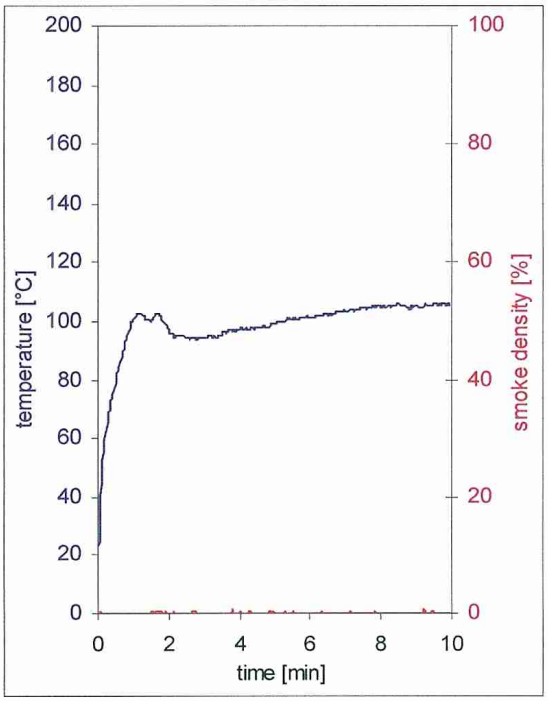

fig. 1
Graphs of the flue gas temperature and the smoke density

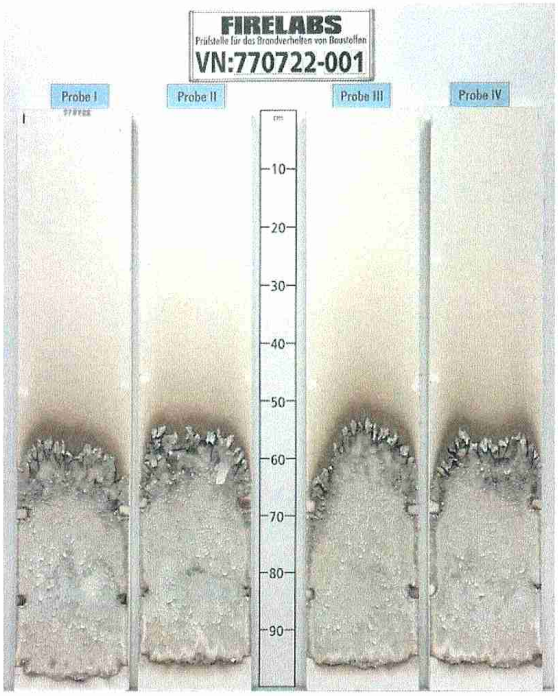

fig. 2
Photo of the test specimen after the test

Test specimen B

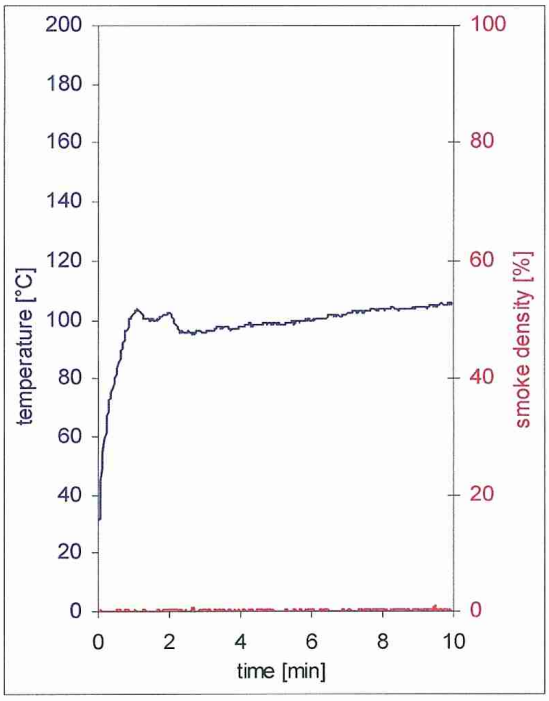

fig. 3
Graphs of the flue gas temperature and the smoke density

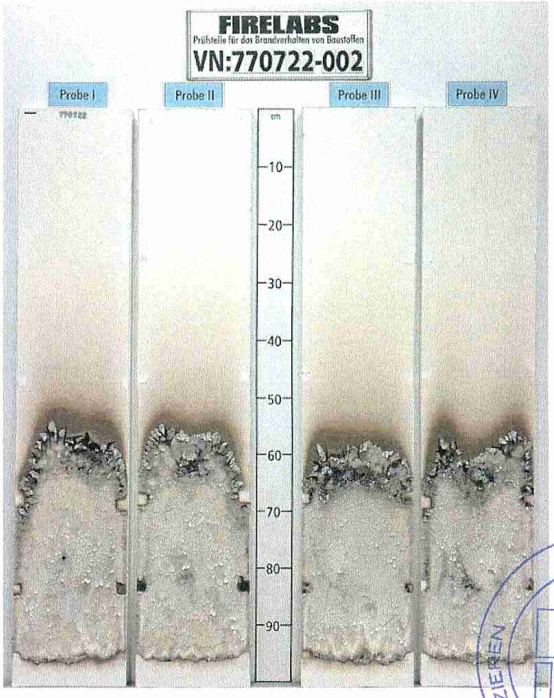

fig. 4
Photo of the test specimen after the test