MFPA Leipzig GmbH

Leipzig Institute for Materials Research and Testing

Testing, Inspection and Certification Authority for Construction Products and Constructions Types

Business Division III:
Structural Fire Protection
Head of Division:
Dipl.-Ing. Michael Juknat
Tel.: +49 (0) 341-6582-134
Fax: +49 (0) 341-6582-197
brandschutz@mfpa-leipzig.de

Work Group 3.1
Fire Behaviour of Building Products

Contact Person:
Katja Thomas
Tel.: +49 (0) 341-6582-268
k.thomas@mfpa-leipzig.de

Test Certificate No. PZ 3.1/25-106-1

24 April 2025
No. Copy 1

This is a translation of the German test certificate PZ3.1/25-106-1 from 24th April 2025

Order:	Fire shaft test and flammability test cabinet test to prove the building material class DIN 4102-B1
Subject matter:	PE flame retardant tarpaulin fabric Standard FR "COVER" colour white
Date of order:	27. March 2025
Samples received on:	1. April 2025 (DZ3.1/25-088)
Sampling:	By client
Identification:	None
Date of testing:	15. April 2025 (test in the fire shaft) 9. April 2025 (test in the flammability test cabinet)
Person in charge:	Katja Thomas

This document consists of 6 pages and 2 Annexes.

In case of doubt the German version shall apply.

In German construction supervision procedures, this test certificate serves as a basis for the prescribed certificate of usability and does not replace the general appraisal verification certificate.

1 Material description

According to the information provided by the client, the construction product to be tested was a PE flame retardant tarpaulin fabric Standard FR for use as a cover sheet with the designation “COVER”. According to the client, the product is made of polyethylene and is coated on both sides with LDPE. The colour of the material was white. According to the client's specifications, the product is used indoors and outdoors as a covering and protective material or tarpaulin and, when used in the building industry, is not backed with other building materials.

According to the client, this building product is not subject to any harmonised European product standard.

Additional information on the building product was not provided to the test centre.

2 Material parameters

Parameters according to the client:

- Thickness of the product: 0.3 mm
- Mass per unit area of the product: 140 g/m^2
- Colour of the product: white

By MFPA Leipzig, the following parameters were determined:

- Thickness of the product: (0.30 ± 0.05) mm
- Mass per unit area of the product: (140.0 ± 0.1) g/m^2
- Colour of the product: white

3 Conditioning

Prior to the tests in the fire shaft, the samples were stored in accordance with DIN 4102-16, section 6.1.

Prior to the tests in the flammability test cabinet, the samples were stored in accordance with DIN 4102-1, section 6.2.3.2.

4 Tests in the fire shaft in accordance with DIN 4102-1, section 6.1.3

4.1 Sample production

The sample material delivered by the client was cut to the necessary dimensions of 1000 mm x 190 mm x sample thickness by employees of the fire test centre.

The samples were produced without support panel.

4.2 Test execution

The tests were performed in the fire test centre of MFPA Leipzig GmbH, MFPA-Allee 1, 04509 Laue bei Delitzsch, Germany, in accordance with DIN 4102-1:1998-05, DIN 4102-15:1990-05 and DIN 4102-16:2015-09.

The samples were tested in a freely suspended sample arrangement.

4.3 Test results

The results of the tests in the fire shaft are summarised in Table 1.

Table 1: Test of PE flame retardant tarpaulin fabric Standard FR "COVER" in the fire shaft in accordance with DIN 4102-1, section 6.1.3.

Sample A: Samples from longitudinal direction,
Sample B: Samples from transverse direction,
Sample C: Samples from longitudinal direction,
Sample D: Samples from longitudinal direction;

Line no.			Measured values for sample			
			A	B	C	D
1	No. of sample arrangement acc. to DIN 4102-15, table 1		1	1	1	1
2	Maximum flame height above lower edge of sample	[cm]	50	50	50	50
3	Time*)	[min:s]	0:02	0:02	0:02	0:02
4	Melting/burning through Time*)	[min:s]	0:04	0:04	0:02	0:02
5	Observations at the back of the sample Flaming/smouldering Time*)	[min:s]	./.	./.	./.	./.
6	Discolourations Time*)	[min:s]	./.	./.	./.	./.
7	Flaming droplets Start*)	[min:s]	./.	./.	./.	./.
8	Extent: individual droplets of the sample material		-	-	-	-
9	continuous droplets of the sample material		-	-	-	-
10	Flaming sample particles Start*)	[min:s]	./.	./.	./.	./.
11	Extent: falling of individual sample particles		-	-	-	-
12	continuous falling of sample particles		-	-	-	-
13	Duration of continued burning on the sieve bottom (max.)	[min:s]	-	-	-	-
14	Impairment of the burner flame due to flaming droplets/particles Time*)	[min:s]	./.	./.	./.	./.
15	Premature end of test End of burning of the samples*)	[min:s]	./.	./.	./.	./.
16	Time of test discontinuation, if applicable*)	[min:s]	./.	./.	./.	./.

**) Time expired since the test started.*
./. No occurrence of the event.
- Not specified.

Table 1 continued.

Line no.			Measured values for sample			
			A	B	C	D
	Continued burning after end of test					
17	Duration	[min:s]	./.	./.	./.	./.
18	Number of samples		-	-	-	-
19	Front of sample		-	-	-	-
20	Back of sample		-	-	-	-
21	Flame length	[cm]	-	-	-	-
	Afterglow after end of test					
22	Duration	[min:s]	./.	./.	./.	./.
23	Number of samples		-	-	-	-
	Place of occurrence:					
24	Bottom half of sample		-	-	-	-
25	Top half of sample		-	-	-	-
26	Front of sample		-	-	-	-
27	Back of sample		-	-	-	-
	Smoke density					
28	max. 400% min	[%min]	0.5	0.4	0.7	0.1
29	> 400% min (very strong smoke development)	[%min]	./.	./.	./.	./.
30	Diagram in Annex no.		2	2	2	2
	Residual lengths					
31	Single values	[cm]	20; 30 24; 16	20; 20 24; 30	18; 23 38; 26	29; 30 21; 18
32	Mean value	[cm]	23	24	26	25
33	Photo of the sample in Annex no.		1	1	1	1
	Flue gas temperature					
34	Maximum of the mean value	[°C]	105	103	108	109
35	Time*)	[min:s]	9:58	9:58	9:52	8:46
36	Diagram in Annex no.		2	2	2	2
37	Remarks: - None					

**) Time expired since the test started.*
./. No occurrence of the event.
- Not specified.

4.4 Deviations

There were no deviations from the test procedure according to DIN 4102-1:1998-05, DIN 4102-15:1990-05 and DIN 4102-16:2015-09.

5 Tests in the flammability test cabinet in accordance with DIN 4102-1, section 6.2.5

5.1 Sample production

The sample material which was delivered by the client was cut to the required dimensions of 190 mm x 90 mm x sample thickness or 230 mm x 90 mm x sample thickness by employees of the fire test centre.

The samples were produced without support panel.

5.2 Test execution

The tests were performed at the fire test centre of MFPA Leipzig GmbH, MFPA-Allee 1, 04509 Laue bei Delitzsch in accordance with DIN 4102-1:1998-05.

Flame impingement was carried out in accordance with DIN 4102-1, section 6.2.5.2 (edge flame impingement) and section 6.2.5.3 (surface flame impingement).

The samples were tested in a freely suspended sample arrangement.

5.3 Test results

The results of the tests in the flammability test cabinet are summarised in Table 2.

Table 2: Tests of PE flame retardant tarpaulin fabric Standard FR "COVER" in the flammability test cabinet in accordance with DIN 4102-1, section 6.2.5.2 (edge flame impingement) and section 6.2.5.3 (surface flame impingement).
Sample 1 to 6: Edge flame impingement
Sample 7 and 8: Surface flame impingement
Sample 1, 3, 5 and 7: Samples of material longitudinal to the direction of production
Sample 2, 4, 6 and 8: Samples of material transverse to the direction of production

Information acc. to DIN 4102-1		**Test results Sample no.**							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Ignition	[s]	1	1	1	1	1	1	2	2
Highest flame height	[mm]	30	40	50	70	30	40	50	50
Time of occurrence	[s]	2	4	5	7	3	3	3	2
Flame tip at measuring mark	[s]	./.	./.	./.	./.	./.	./.	./.	./.
Flame dies before reaching the measuring mark	[s]	3	4	6	8	4	4	14	12
Continued burning after end of the test	[s]	./.	./.	./.	./.	./.	./.	./.	./.
Ignition of the filter paper	[s]	./.	./.	./.	./.	./.	./.	./.	./.
Appearance of samples after fire tests: The samples were damaged on the side exposed to the flames up to a maximum length of 80 mm and at the bottom edge up to a maximum width of 20 mm.									
Development of smoke (visual):		low		moderate		strong		very strong	

./. No occurrence of the event
- not specified.

5.4 Deviations

There were no deviations from the test procedure according to DIN 4102-1:1998-05.

6 Assessment

6.1 Requirements for building material class B1 according to DIN 4102-1, section 6.1.2.2

The PE flame retardant tarpaulin fabric Standard FR called "COVER" with a sample thickness of 0.30 ± 0.05 mm and a mass per unit area of 140.0 ± 0.1 g/m² passed the tests in the fire shaft in accordance with DIN 4102-1, section 6.1.2.2 in a freely suspended sample arrangement.

In the test in accordance with DIN 4102-16, section 9.3., the material did not produce flaming particles (droplets).

This means that the tested building product can be assigned to building material class DIN 4102-B1 under the following conditions:

- The building product must have a distance > 40 mm to equivalent or different flat building materials.
- If used as a building product with building material class DIN 4102-B1, the material may be exposed to the weather outdoors for a maximum of 2 years.
- This assessment applies to the material in white.
- The construction product must be flame-retardant in accordance with the data deposited with the MFPA Leipzig.

6.2 Requirements for building material class B2 according to DIN 4102-1, section 6.2.2

The PE flame retardant tarpaulin fabric Standard FR called "COVER" with a sample thickness of 0.30 ± 0.05 mm and a mass per unit area of 140.0 ± 0.1 g/m² fulfilled the requirements for building materials of the building material class DIN 4102-B2 in a freely suspended sample arrangement.

In the test in accordance with DIN 4102-1, section 6.2.6, the material did not produce flaming particles (droplets).

7 Notes

In German construction supervision procedures, this test certificate serves as a basis for the prescribed certificate of usability.

The test certificate does not replace a general appraisal verification certificate of usability that may be required according to German construction supervision procedures. It only serves as a basis for the issue of a general appraisal verification certificate.

This test certificate is not a certificate of usability approved by the building authorities.

The validity of this test certificate will expire on 14. April 2030.

This document does not replace a certificate of conformity or suitability according to national and European building codes.

Leipzig, 24 April 2025

MFPA Leipzig GmbH
SAC 02
NB 0800

Dipl.-Ing. M. Jukner
Head of Business Division

K. Thomas
Project Coordinator

Annex 1 Photos of the tests in the fire shaft

Photo 1:Damage to the fire shaft samples:
Sample DZ3.1/25-088A „COVER“

Sample thickness: 0.30 ± 0.05 mm
Mass per unit area: 140.0 ± 0.1 g/m²
Sample from longitudinal direction,
Freely suspended sample arrangement;

Photo 2:Damage to the fire shaft samples:
Sample DZ3.1/25-088B „COVER“

Sample thickness: 0.30 ± 0.05 mm
Mass per unit area: 140.0 ± 0.1 g/m²
Sample from transverse direction,
Freely suspended sample arrangement;

Photo 3:Damage to the fire shaft samples:
Sample DZ3.1/25-088C „COVER“

Sample thickness: 0.30 ± 0.05 mm
Mass per unit area: 140.0 ± 0.1 g/m²
Sample from longitudinal direction,
Freely suspended sample arrangement;

Photo 4:Damage to the fire shaft samples:
Sample DZ3.1/25-088D „COVER“

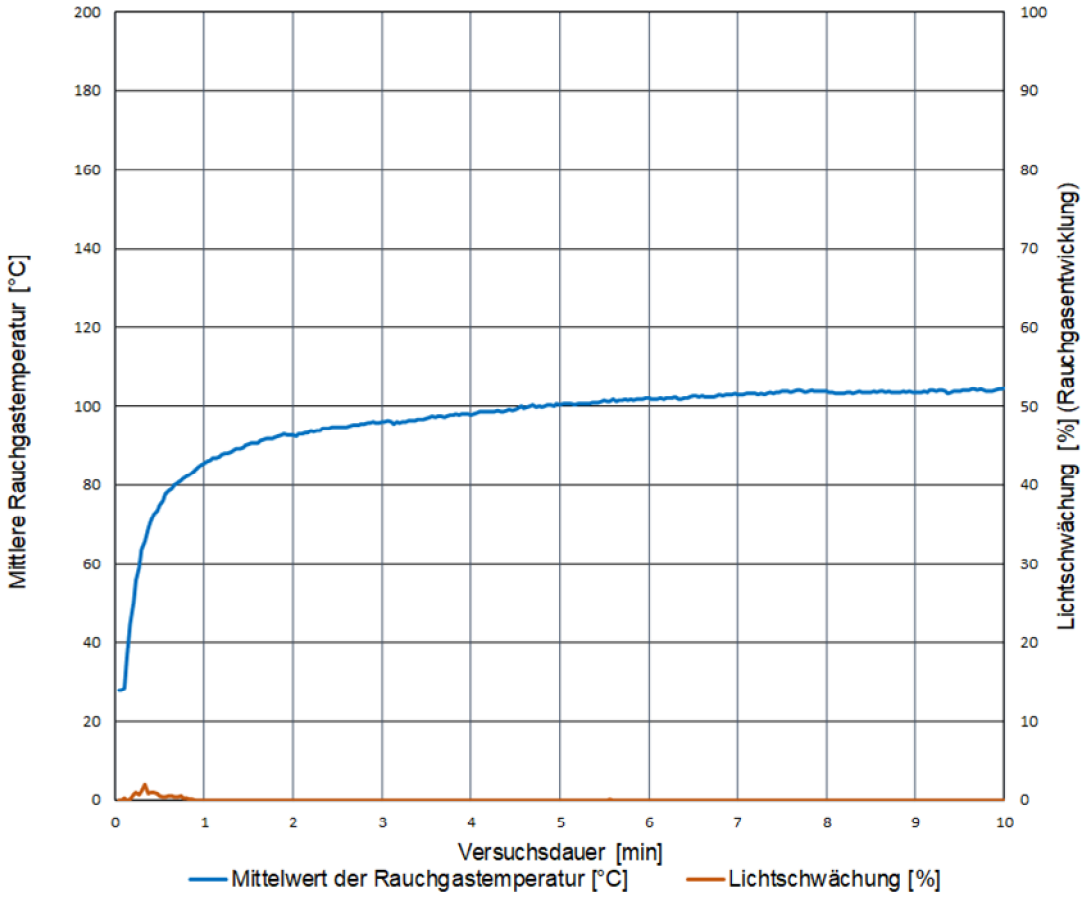
Sample thickness: 0.30 ± 0.05 mm
Mass per unit area: 140.0 ± 0.1 g/m²
Sample from longitudinal direction,
Freely suspended sample arrangement;

Annex 2 Diagrams and parameters of the tests in the fire shaft in accordance with DIN 4102-1

Rauchgastemperaturen und Rauchentwicklung

Brandschachtversuch am:	14.04.2025
Probekörper:	DZ25081A
Produktname:	"COVER"
Produktbeschreibung:	PE Bändchengewebe Abdeckplane Standard B1
Eigenschaften:	Dicke: 0,3 mm; Flächenmasse: 140 g/m²; Farbe: weiß
Prüfanordnung:	freihängend
Versuch abgebrochen nach:	./.
Maximum der mittleren Rauchgastemperatur:	105 °C nach 09:58 min:s
Flächenintegral der Rauchdichte:	0,5 %min

Restlängen:	20 cm	30 cm
	24 cm	16 cm
Mittelwert:	23 cm	



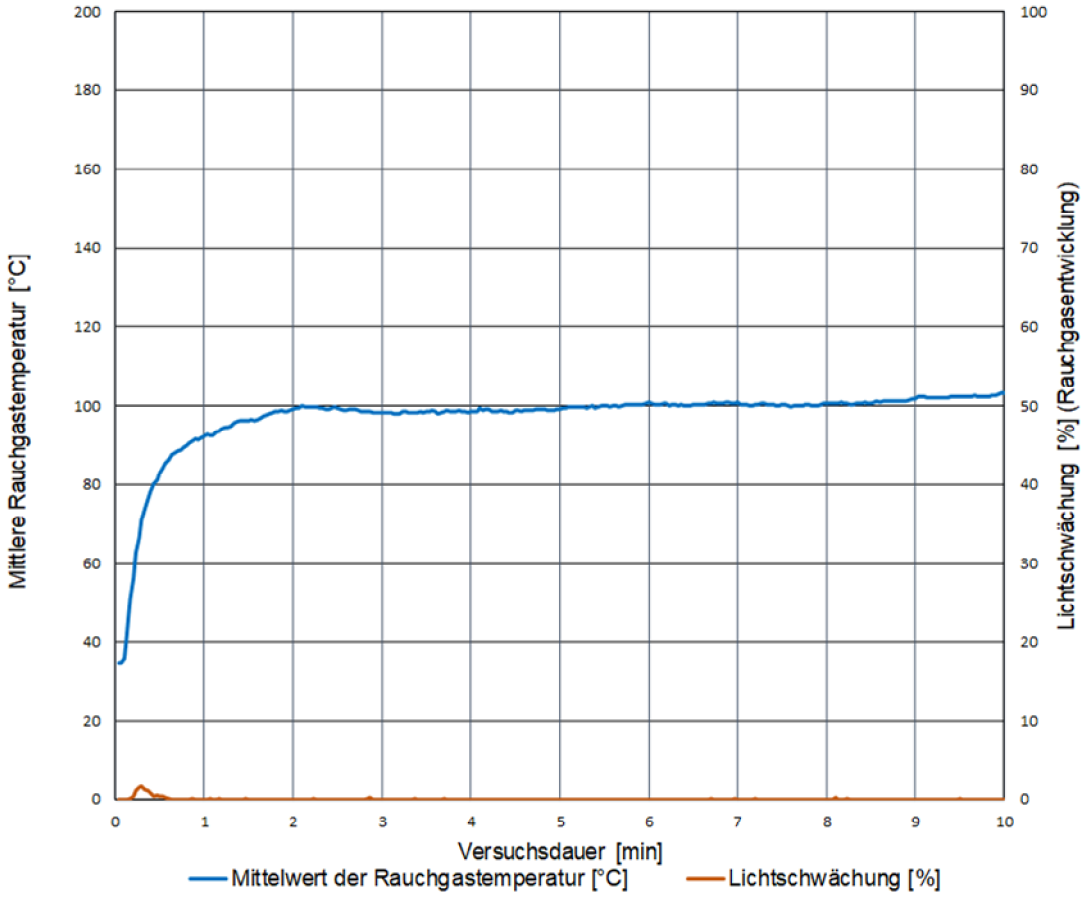
Rauchgastemperaturen und Rauchentwicklung

Brandschachtversuch am:	14.04.2025
Probekörper:	DZ25081B
Produktname:	"COVER"
Produktbeschreibung:	PE Bändchengewebe Abdeckplane Standard B1
Eigenschaften:	Dicke: 0,3 mm; Flächenmasse: 140 g/m²; Farbe: weiß
Prüfanordnung:	freihängend

Versuch abgebrochen nach: ./.

Maximum der mittleren Rauchgastemperatur:	103 °C nach 09:58 min:s
Flächenintegral der Rauchdichte:	0,4 %min

Restlängen:	20 cm	20 cm
	24 cm	30 cm
Mittelwert:	24 cm	



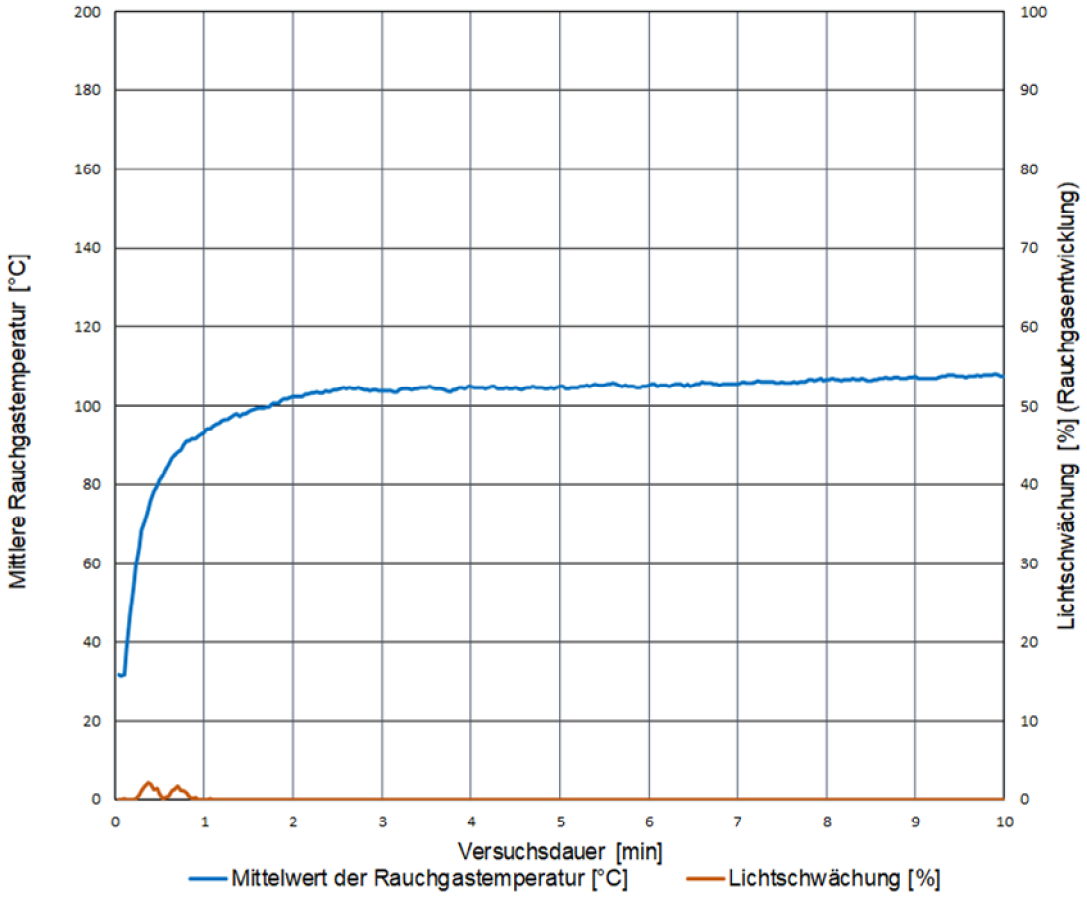
Rauchgastemperaturen und Rauchentwicklung

Brandschachtversuch am:	15.04.2025
Probekörper:	DZ25081C
Produktname:	"COVER"
Produktbeschreibung:	PE Bändchengewebe Abdeckplane Standard B1
Eigenschaften:	Dicke: 0,3 mm; Flächenmasse: 140 g/m²; Farbe: weiß
Prüfanordnung:	freihängend

Versuch abgebrochen nach: ./.

Maximum der mittleren Rauchgastemperatur:	108 °C nach 09:52 min:s
Flächenintegral der Rauchdichte:	0,7 %min

Restlängen:	18 cm	23 cm
	38 cm	26 cm
Mittelwert:	26 cm	



Rauchgastemperaturen und Rauchentwicklung

Brandschachtversuch am:	15.04.2025
Probekörper:	DZ25081D
Produktname:	"COVER"
Produktbeschreibung:	PE Bändchengewebe Abdeckplane Standard B1
Eigenschaften:	Dicke: 0,3 mm; Flächenmasse: 140 g/m²; Farbe: weiß
Prüfanordnung:	freihängend

Versuch abgebrochen nach: ./.

Maximum der mittleren Rauchgastemperatur:	109 °C nach 08:46 min:s
Flächenintegral der Rauchdichte:	0,1 %min

Restlängen:	29 cm	30 cm
	21 cm	18 cm
Mittelwert:	25 cm