

Test laboratory for the fire behavior of building materials, Dipl.-Ing. (FH) Andreas Hoch
Testing, supervising and certifying body, authorized by the building supervision authority

TEST REPORT PZ-Hoch-250335

for the proof of fire behaviour according to DIN 4102, part 1

Translation of the German test report – no guarantee for translation of technical terms

company	Neschen Coating GmbH Hans-Neschen-Straße 1 D-31675 Bückeburg
description of samples	transparent self-adhesive film, glued on aluminium panels
name of the material	„filmolux easy clear sand“
sampling	by the company itself
content of request	Proof of flammability to classify building materials to class B1 („schwerentflammbar“) according to DIN 4102, part 1
validity of test report	31.07.2026
result	The examined product meets the requirements of class B1 for „schwerentflammbare“ (hardly flammable) building materials according to DIN 4102, part 1 (May 1998), if glued on metallic substrates with a density of $\geq 2.025 \text{ kg/m}^3$, a melting point of $\geq 500^\circ\text{C}$ and a thickness of $\geq 0,8\text{mm}$.

This test report includes 4 pages and 5 enclosures.

Remark: If the building material mentioned above is not used as a product according to MBO § 2, Abs. 9, Ziffer 1, there is no need for a general building supervisory test report.

This test report is not valid if the examined building material is used as product as defined by State Building Prescriptions (MBO § 17, Abs. 3).

This test report does not replace an eventually necessary proof of applicability concerning building supervisory or building laws as defined by State Building Prescriptions. This has to be certified instead 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 report can underlie building supervisory procedures

- for regular building products for the prescribed proofs of conformity
- for irregular building products for the required proofs of applicability.

Without written consent of the test laboratory, this test report may only be published or duplicated during its denoted period of validity, providing that no changes to appearance or content are made.

1. Description of test material in condition as delivered

material I	"filmolux easy clear sand"
	transparent self-adhesive plastic film with adhesive on one side and a protective paper
	<u>characteristic values determined by the test laboratory:</u>
	thickness adhesive film: about 0,20 mm
	thickness protective paper: about 0,06 mm
	total area weight about 281 g/m ²

The testing laboratory is not provided with further details concerning composition of the tested building materials. Samples are deposited.

2. Preparation of samples

Samples with a size of 1000 mm height and 190 mm width where cut from the material for fire testing. The samples were kept in climate chamber 23/50 until they reached constant weight. The tests underlying this report were carried out by FIRELABS, Borkheide.

3. Arrangement of samples mounting: glued on aluminium panels

#754621-001 flaming in machine direction

#754621-002 flaming in transverse direction

#754621-003 flaming in machine direction

#754621-004 flaming in transverse direction

4. Date of test August in 2021

5. Results

The test has been performed according to DIN 4102 (Mai 1998)

line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#754621-001	#754621-002	#754621-003	#754621-004	
	flaming direction	machine	transverse	machine	transverse	
1	Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1	7	7	7	7	
2	Maximum flame height	70	70	70	70	cm
3	Time ¹⁾	01:00	01:00	01:00	01:00	min:s
4	Burn-through / melting ¹⁾	-/-	-/-	-/-	-/-	min:s
	Observations on the back side					
5	Flames / Glowing ¹⁾	-/-	-/-	-/-	-/-	min:s
6	Change of colour ¹⁾	03:00	03:00	03:00	03:00	min:s
7	Falling of burning droplets ¹⁾	-/-	./.	./.	./.	
8	sporadic falling of burning droplets ²⁾	--	--	--	--	min:s
9	continuous falling of burning droplets ²⁾	--	--	--	--	min:s
10	Falling of burning parts ¹⁾	-/-	./.	./.	./.	min:s
11	sporadic falling of burning parts ²⁾	--	--	--	--	
12	continuous falling of burning parts ²⁾	--	--	--	--	
13	Burning duration at sieve plate (max.)	-/-	./.	./.	./.	min:s
14	Impairment of burner by material ¹⁾	-/-	./.	./.	./.	min:s
15	End of burning at the specimen ¹⁾	10:00	10:00	10:00	10:00	min:s
16	Time of eventually end of test ¹⁾	-/-	./.	./.	./.	min:s
17	Afterburning after end of test ¹⁾	-/-	-/-	-/-	-/-	min:s
18	Number of specimen	--	--	--	--	
19	Front side / Rear side of specimen ²⁾	--	--	--	--	
20	flame length	--	--	--	--	cm
21	Afterglow after end of test ¹⁾	-/-	-/-	-/-	-/-	min:s
22	Number of specimen	--	--	--	--	
23	Lower / Upper half of the specimen ²⁾	--	--	--	--	
24	Front side / Rear side of specimen ²⁾	--	--	--	--	
25	Density of smoke $\leq 400 \% \cdot \text{min}$	38,0	39,6	38,8	38,4	%min
26	$> 400 \% \cdot \text{min}^{4)}$	--	--	--	--	%min
27	Residual lengths: Specimen 1 individual values ³⁾ Specimen 2 Specimen 3 Specimen 4	41 39 42 42	40 41 40 40	40 42 42 43	41 42 39 41	cm cm cm cm
28	Average residual length ³⁾	41	40	41	40	cm
29	Maximum smoke temperature	126	119	117	122	°C
30	Time ¹⁾	01:24	01:20	01:28	01:28	min:s
31	Diagram and Photo of specimen in enclosure no.	1	2	3	4	
32	Remarks: - none -					

¹⁾ indication of times relative to beginning of test

²⁾ checked if applicable

³⁾ indication of carrier/foam layer separated in case of fire-proofing agents

⁴⁾ very strong development of smoke

6. Explanations concerning the testing procedure

The remaining tests could be skipped as the residual lengths exceeded 45 cm.

7. Summary of results and additional establishments to Fire Behaviour

lineo	Measurement	Messwert für Probekörper				dmension
	test-no.	#754621-001	#754621-002	#754621-003	#754621-004	
Beflam-mung	direction	transverse	machine	transverse	machine	
1	residual length	41	40	41	40	cm
2	max. smoke temperature	126	119	117	122	°C
3	integral of smoke density	38,0	39,6	38,8	38,4	%min
4	remarks: none					

According to DIN 4102, pt. 1, hardly flammable ("schwerentflammbare") building materials must meet the requirements of class B2.

After performing additional tests in the ignitability apparatus, this could be verified (encl. 5).

8. Special remarks

- This report is only valid for the material as described in paragraph 1. In combination with other materials or with additional coatings or primers etc., the burning behaviour may differ.
- This test report is not valid for the exposure to outdoor climate conditions, washing or cleaning with chemicals.
- This test report is not valid if the material is used as a building product in the sense of the State Building Regulations ("Landesbauordnungen", MBO § 17, par. 3).
- This test report is no substitute for a General Building Inspectorate Certificate.
- This test report is granted without prejudice to the rights of third parties, in particular private proprietary rights.
- For legal interests, only the German original version is relevant.
- In General Building Inspectorates procedures, this test report can be used for
 - regular building materials for the required proof of accordance
 - for not regular building materials for the required proof of applicability

9. Validity

This test report is valid until the denoted date on page 1. The test report becomes invalid in case the standards on which these tests are based are changed.

Fladungen, 25.03.2025

Clerk in charge:



(Silke Biendara)

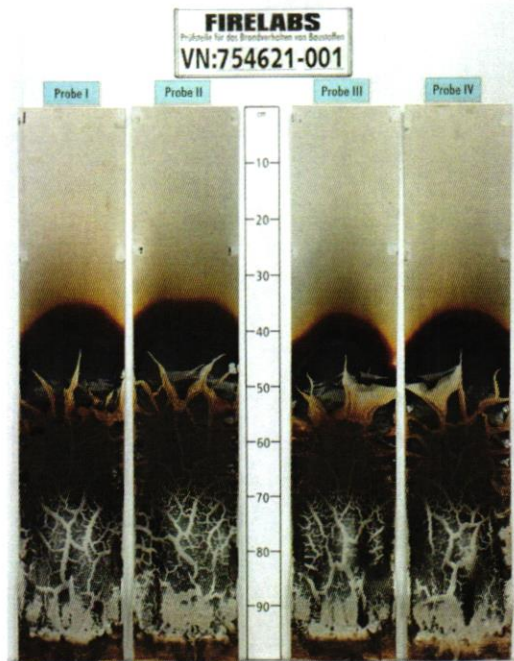


Head of test laboratory:

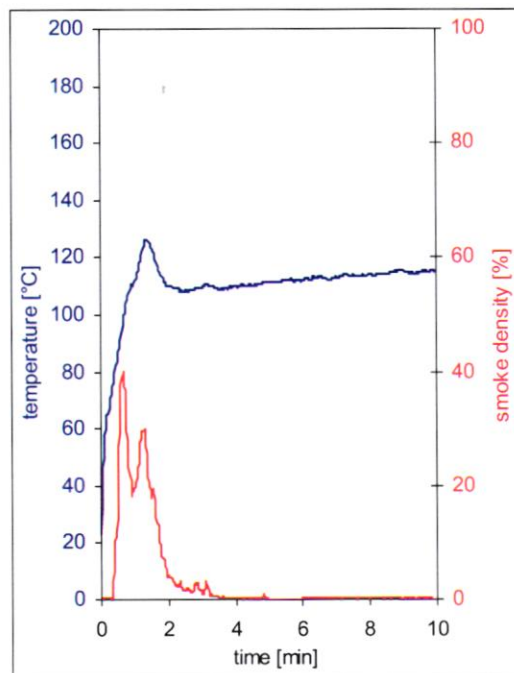


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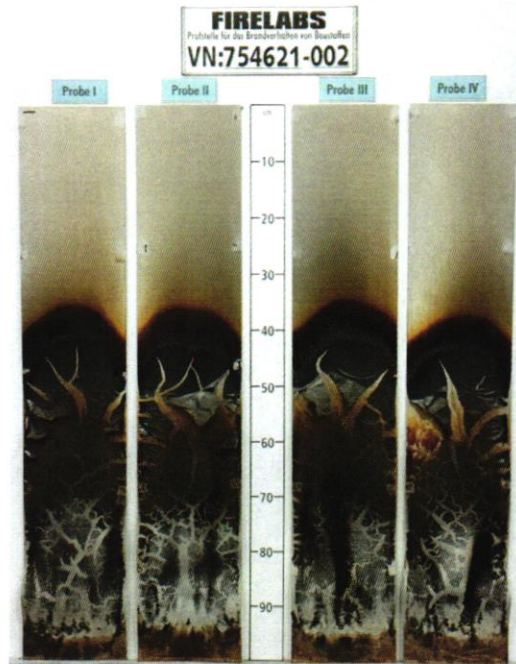
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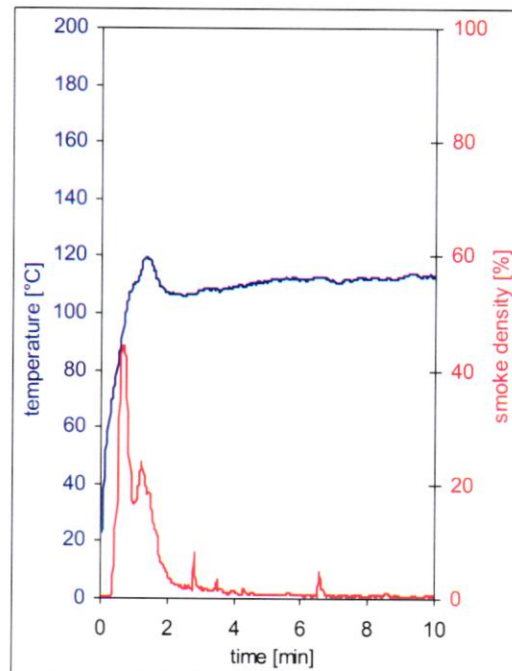
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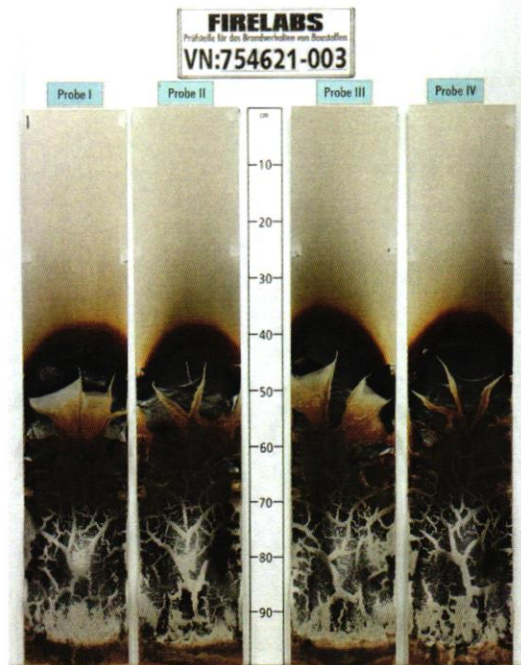
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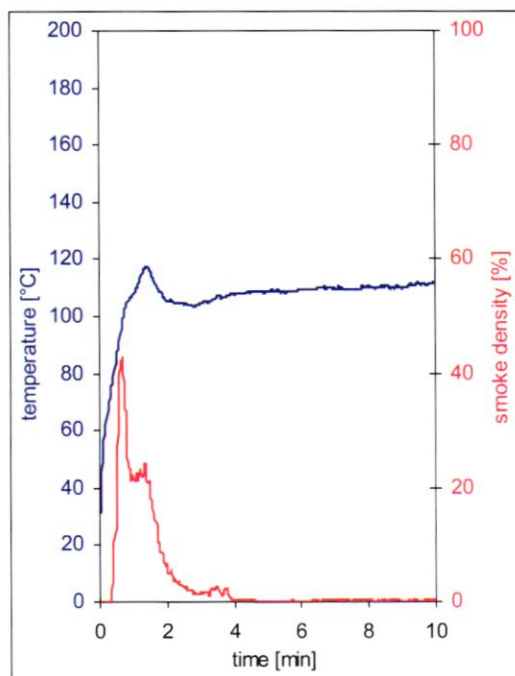
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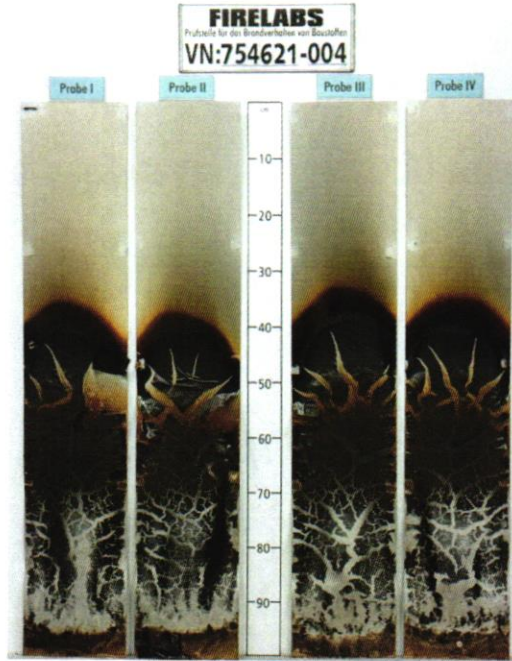
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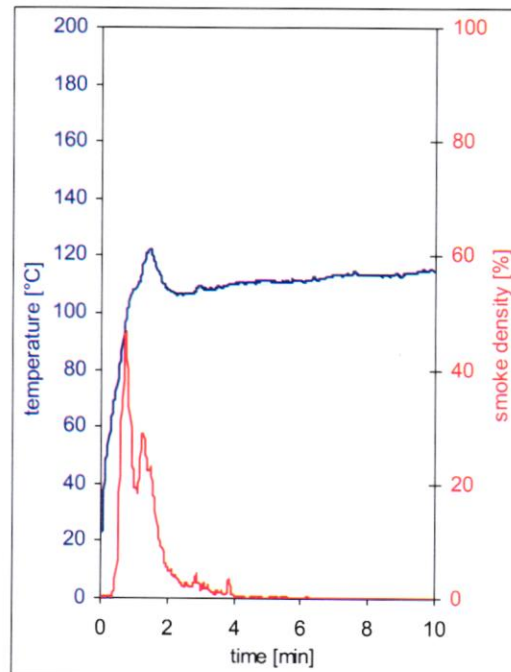
measurement



fire shaft test #754621-004



measurement



Test for normal flammability
classifying B2 according to DIN 4102

1. Description of test material in condition as delivered cf. page 2

2. Preparation of samples

Samples for the ignitability apparatus were cut from the sample. The samples were kept in a climate 23/50 until they reached constant weight.

3. Arrangement of samples

glued on aluminium panels

4. Date of test August in 2021

5. Results

	longitudinal						transversal						dim.	requirements
Sample-No.	1	2	3	4	5	6	1	2	3	4	5	6	-	-
Ignition of the sample	./.	./.	3	3	4	./.	./.	./.	2	3	./.	./.	s	-
Maximum flame height	./.	./.	1	1	1	./.	./.	./.	1	1	./.	./.	cm	-
Time of the maximum	./.	./.	4	3	4	./.	./.	./.	3	3	./.	./.	-	-
Flame tip has reached the 150 mm mark	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	./.	s	≥ 20
Flames extinguished	./.	./.	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 specimens were superficially destroyed in the area of the flame impingement point up to a height of about 0.2 cm and a width of about 1 cm, above approx. 1 cm discoloured.														

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

6. Remarks and explanations to the testing procedure - none -

7. Opinion concerning the dropping of burning material

The test for normal flammability shows no dropping burning material.

----- End of enclosures -----