

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-240849-2

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	Silent Gliss Fabrics & Components GmbH Rheinauenstraße 8 D – 79415 Bad Bellingen
description of samples	latticed polyester fabric, coated on both sides with PVC, also aluminium vapourised on one side in different colours
name of the material	„Aluscreen Futura”
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	30.06.2029
result	The examined products meet in any colour the requirements of class B1 for “schwerentflammbare” (hardly flammable) building materials according to DIN 4102, part 1 (May 1998), suspended freely or with distance of >40 mm to same or other plain materials.

This test report includes 5 pages and 8 enclosures.

Remark: If the above-mentioned building material is not used as 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 in the meaning of 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 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 report can underlie building supervisory procedures

- for regular building products for the prescribed proofs of conformity
- for non-regular building products for the needed proofs of applicability.

This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.

1. Description of test material in condition as delivered

- PN 39463:** “Aluscreen Futura” colour: silver / white
-lattice polyester fabric, coated on both sides with PVC and vapourised with aluminium on one side-
side A: aluminium vapourised side B: white
characteristic values determined by the test laboratory:
thickness: about 0,45 mm
area weight: about 327 g/m²
- PN 39464:** “Aluscreen Futura” colour: silver / black
-lattice polyester fabric, coated on both sides with PVC and vapourised with aluminium on one side-
side A: aluminium vapourised side B: black
characteristic values determined by the test laboratory:
thickness: about 0,46 mm
area weight: about 331 g/m²
- PN 39465:** “Aluscreen Futura” colour: silver / grey-beige
-lattice polyester fabric, coated on both sides with PVC and vapourised with aluminium on one side-
side A: aluminium vapourised side B: grey-beige
characteristic values determined by the test laboratory:
thickness: about 0,44 mm
area weight: about 339 g/m²
- PN 39467:** “Aluscreen Futura” colour: black
-lattice polyester fabric, coated on both sides with PVC-
There is no difference between side A and side B.
characteristic values determined by the test laboratory:
thickness: about 0,49 mm
area weight: about 329 g/m²

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

2. Preparation of samples

The samples were kept in climate chamber 23/50 until they reached constant weight.

3. Arrangement of samples mounting: freely suspended

- | | | |
|--------|----------------------------------|-----------------|
| #7914: | flaming side A in warp direction | PN 39464 |
| #7915: | flaming side B in warp direction | PN 39464 |
| #7916: | flaming side B in weft direction | PN 39464 |
| #7917: | flaming side B in weft direction | PN 39463 |
| #7918: | flaming side B in weft direction | PN 39465 |
| #7919: | flaming side B in weft direction | PN 39467 |

4. Date of test CW 26 in 2024

5. Results The test has been examined according to DIN 4102 (Mai 1998)

line no.	Measurement	Result with the tested specimen						Dim.
	Test number	#7914	#7915	#7916	#7917	#7918	#7919	
	flaming direction / side	warp A	warp B	weft B	weft B	weft B	weft B	
	<u>sample no.</u>	PN 39464		PN 39463	PN 39465	PN 39467		
1	<u>Number of specimen arrangement</u> acc. to. DIN 4102/T15, schedule 1	1	1	1	1	1	1	
2	<u>Maximum flame height above bottom</u> edge of the specimen	50	50	50	50	50	50	cm
3	Time ¹⁾	0:07	0:05	0:10	0:06	0:05	0:05	min:s
4	<u>Burn through / melting</u> Time ¹⁾	0:06	0:05	0:05	0:05	0:05	0:05	min:s
5	<u>Observations on the back side of the</u> <u>specimen</u> Flames / Glowing Time ¹⁾	---	---	---	---	---	---	min:s
6	Change of colour Time ¹⁾	./.	./.	./.	./.	./.	./.	min:s
7	<u>Falling of burning droplets</u> Start ¹⁾	./.	./.	./.	./.	./.	./.	min:s
8	<u>Extent</u> sporadic falling of burning droplets ²⁾	---	---	---	---	---	---	min:s
9	continuous falling of burning droplets ²⁾	---	---	---	---	---	---	min:s
10	<u>Falling of burning droplets</u> Start ¹⁾	./.	./.	X 0:30	X 0:22/1:02	X 0:28/0:41	./.	min:s
11	<u>Extent</u> sporadic falling of burning droplets ²⁾	---	---	X	X	X	---	min:s
12	continuous falling of burning droplets ²⁾	---	---	---	---	---	---	min:s
13	<u>After flame time at the bottom of the</u> <u>sieve (max.)</u>	./.	./.	0:07	0:09/0:08	0:04/0:07	./.	min:s
14	<u>Impairment of the burner by dropping</u> <u>or falling material:</u> Time ¹⁾	./.	./.	./.	./.	./.	./.	min:s
15	<u>Premature end of test</u> Final occurrence of burning at the specimen ¹⁾	0:40	0:55	1:35	2:40	0:50	1:26	min:s
16	Time of eventually end of test ¹⁾	./.	./.	./.	./.	./.	./.	min:s
17	<u>After flame after end of test</u> Time ¹⁾	./.	./.	./.	./.	./.	./.	min:s
18	Number of specimen	./.	./.	./.	./.	./.	./.	
19	Front side of specimen ²⁾	./.	./.	./.	./.	./.	./.	
20	Back side of specimen ²⁾	./.	./.	./.	./.	./.	./.	
21	flame length	./.	./.	./.	./.	./.	./.	cm

line no.	Measurement	Result with the tested specimen						Dim.
	Test number	#7914	#7915	#7916	#7917	#7918	#7919	
	flaming direction / side	warp A	warp B	weft B	weft B	weft B	weft B	
22	<u>Afterglow after end of test</u> Time ¹⁾	./.	./.	./.	./.	./.	./.	min:s
23	Number of specimen	./.	./.	./.	./.	./.	./.	
	<u>Place of appearance</u>	./.	./.	./.	./.	./.	./.	
24	Lower half of the specimen ²⁾	./.	./.	./.	./.	./.	./.	
25	Upper half of the specimen ²⁾	./.	./.	./.	./.	./.	./.	
26	Front side of specimen ²⁾	./.	./.	./.	./.	./.	./.	
27	Back side of specimen ²⁾	./.	./.	./.	./.	./.	./.	
28	<u>Density of smoke</u> ≤ 400 % * min	19	19	24	30	31	14	% * min
29	> 400 % * min ⁴⁾	./.	./.	./.	./.	./.	./.	% * min
30	Diagram: encl. no.	1	2	3	4	5	6	
31	<u>Residual lengths: individual value³⁾</u>							
	Specimen 1	67	61	63	58	59	66	cm
	Specimen 2	61	60	55	57	60	62	cm
	Specimen 3	66	65	59	58	58	61	cm
	Specimen 4	67	66	64	56	63	65	cm
32	<u>Average value, individual test ³⁾</u>	65	63	60	57	60	64	
33	<u>Photo of specimen in enclosure no.</u>	1	2	3	4	5	6	
34	<u>Flue gas temperature</u>	113	115	116	115	117	117	°C
35	Maximum of average value Time ¹⁾	08:07	08:50	10:00	09:52	09:57	09:42	min:s
36	Diagram: encl. no.	1	2	3	4	5	6	
37	Remarks: - none -							

¹⁾ indication of times: from the begin of testing procedure ²⁾ checked off 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

There were no additional tests proceeded because of the residual length of more than 45 cm.

7. Summary of results and additional establishments to Fire Behaviour

lineno	measurement	Result with the tested specimen						Dim.
	test-no.	#7914 warp/A	#7915 warp/B	#7916 weft/B	#7917 weft/B	#7918 weft/B	#7919 weft/B	
	sample no.	PN 39464		PN 39463	PN 39465	PN 39467		
1	residual length	65	63	60	57	60	643	cm
2	max. smoke temperature	113	115	116	115	117	117	°C
3	density of smoke - integral	19	19	24	30	31	14	%min
4	remarks: -none-							

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

Pursuant to additional tests in the ignitability apparatus this can be determined (appendix 7 & 8).

8. Special remarks

- This report is only valid for the material as described under paragraph 1. In combination with other materials or with additional coatings or grounds etc. the burning behaviour may differ.
- This test report is not valid for the exposure to outdoor climate conditions.
- This test report is not valid, as soon as the fabric is used as a building product in the sense of the "Landesbauordnungen" (state building requirements, 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 based 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 mentioned date on page 1. The test report becomes invalid in case the standards on which the tests are based are changed.

Fladungen, 08.07.2024

clerk in charge:



(Silke Biendara)

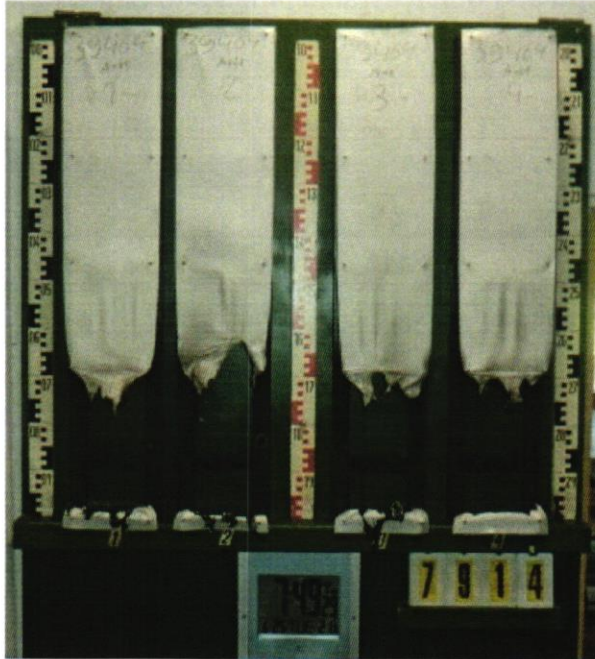


Head of the test laboratory:



(Dipl.-Ing.(FH) Andreas Hoch)

„Brandschacht“-test #7914

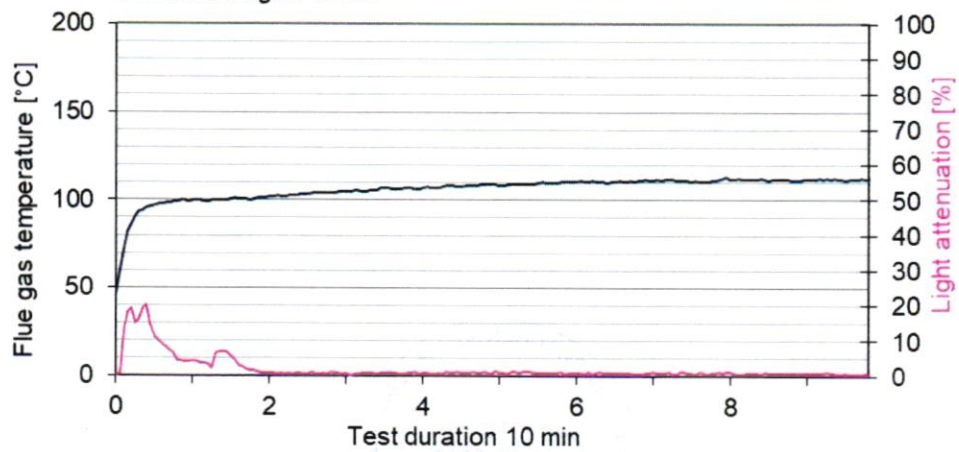


measurement

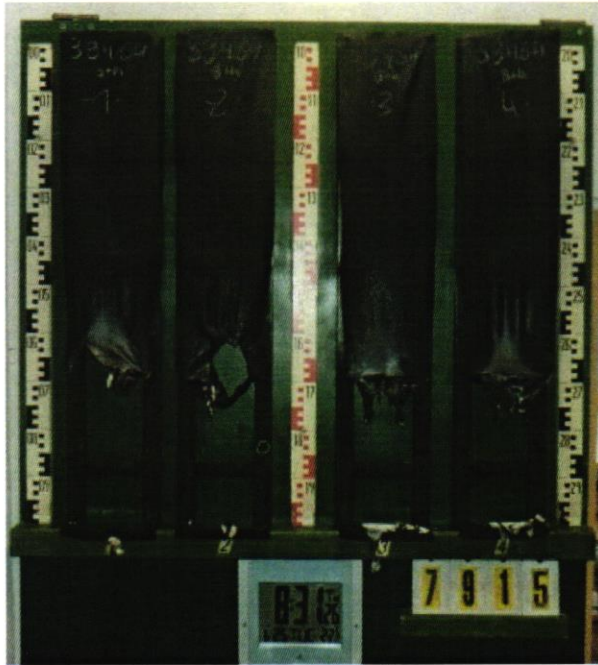
#7914, PN39464: A + K

Max. flue temperature: 113°C, Smoke density integral: 19%min

Residual length: 65 cm



„Brandschacht“-test #7915

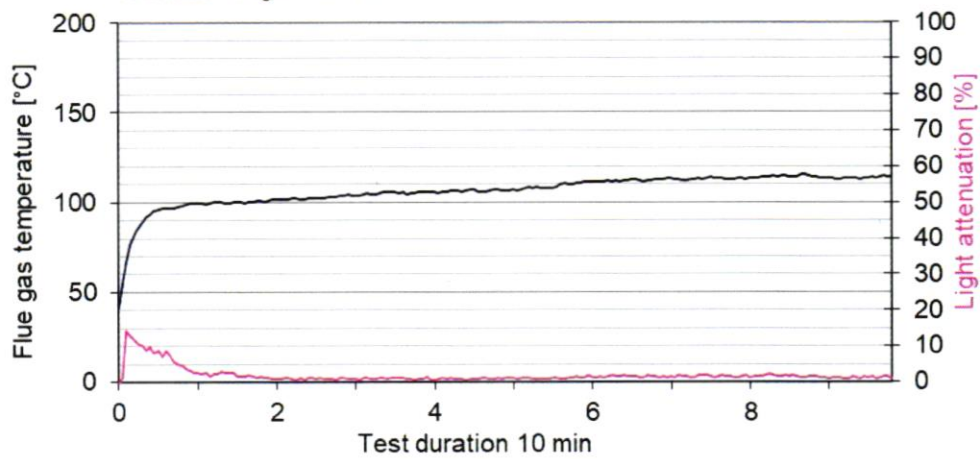


measurement

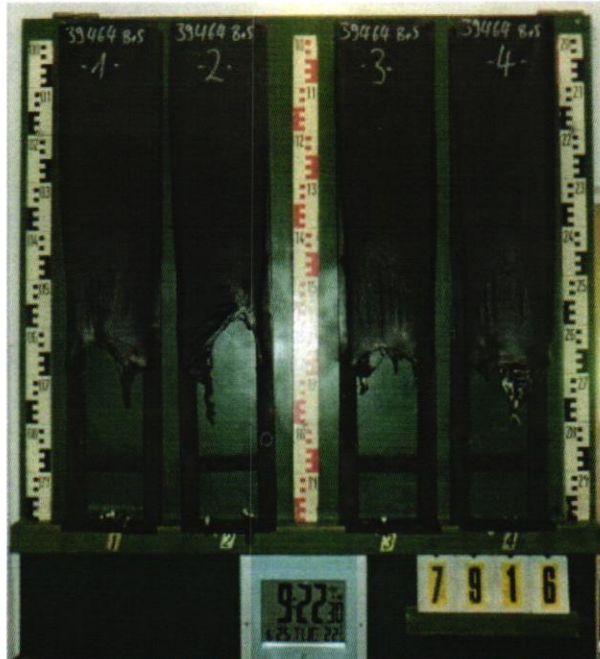
#7915, PN39464: B + K

Max. flue temperature: 115°C, Smoke density integral: 19%min

Residual length: 63 cm



„Brandschacht“-test #7916

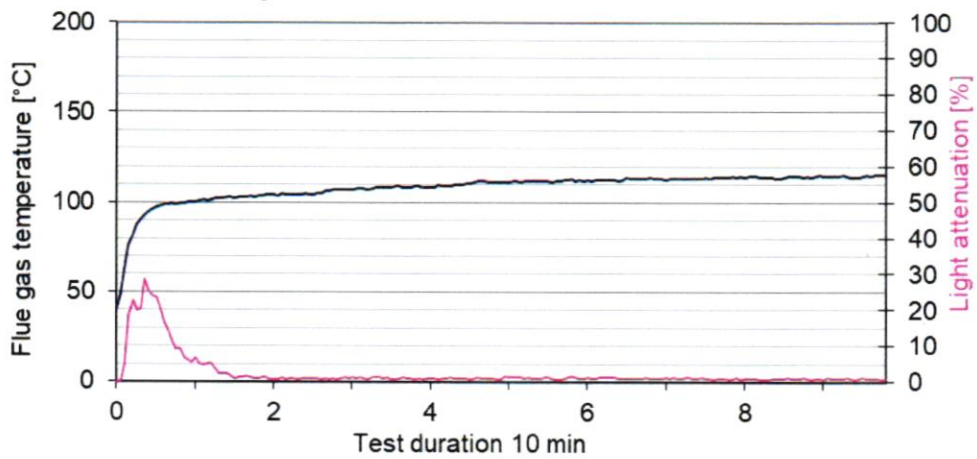


measurement

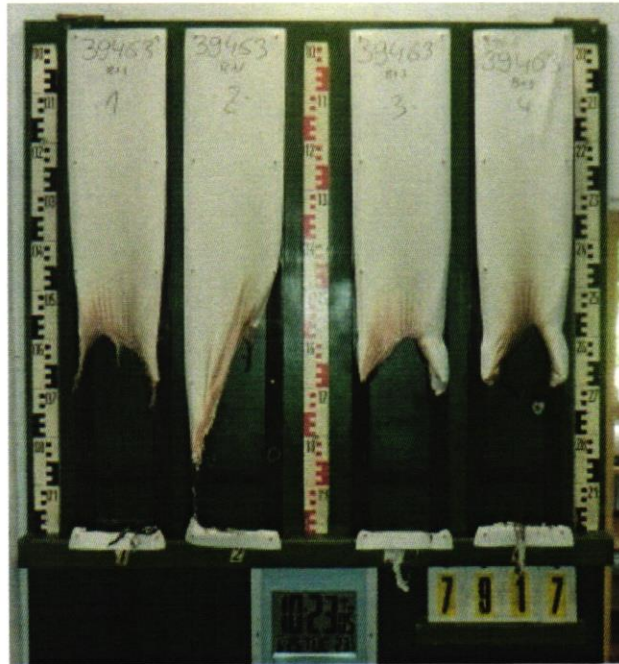
#7916, PN39464: B + S

Max. flue temperature: 116°C, Smoke density integral: 24%/min

Residual length: 60 cm



„Brandschacht“-test #7917

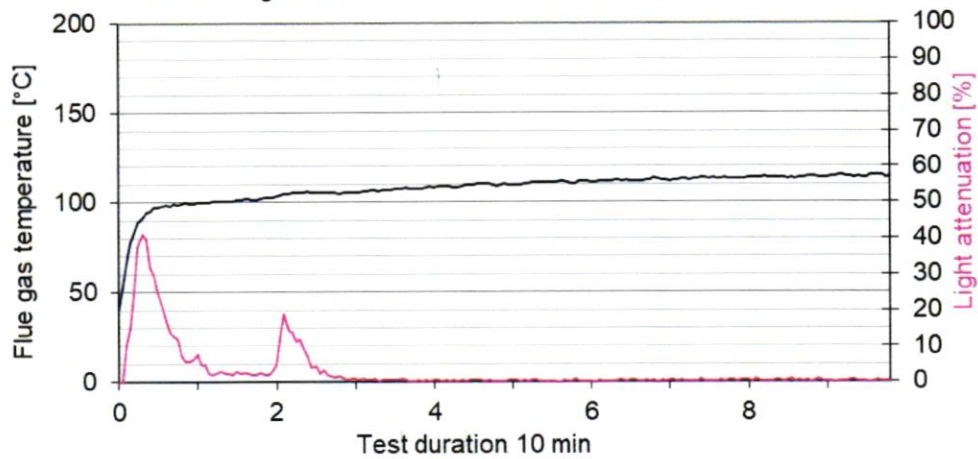


measurement

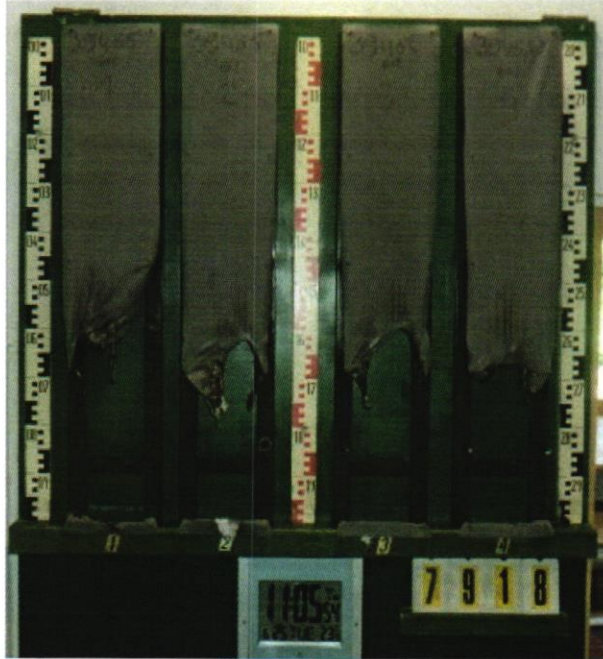
#7917, PN39463: B + S

Max. flue temperature: 115°C, Smoke density integral: 30%/min

Residual length: 57 cm



„Brandschacht“-test #7918

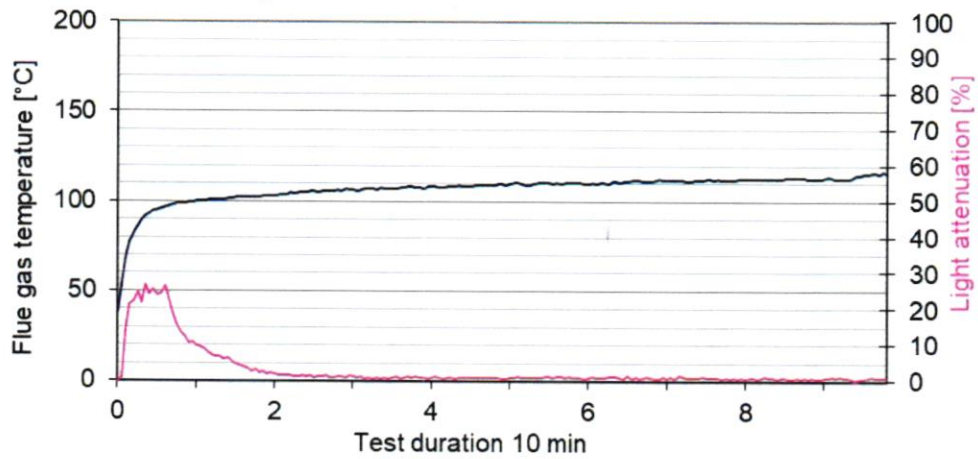


measurement

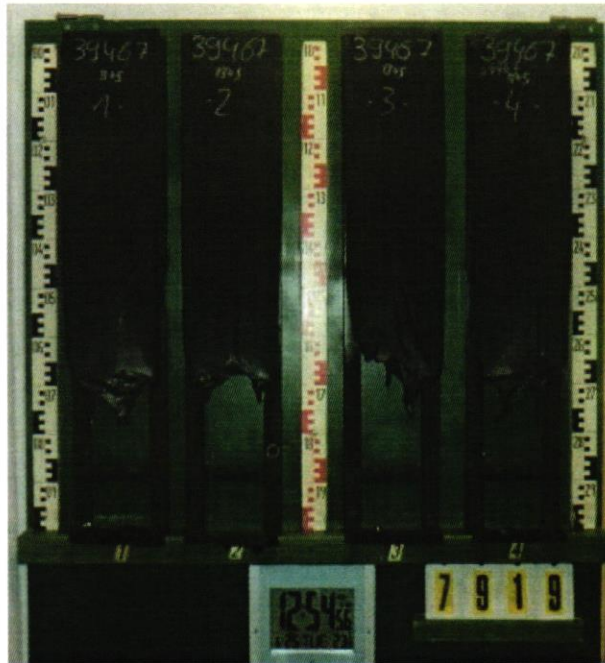
#7918, PN39465: B + S

Max. flue temperature: 117°C, Smoke density integral: 31%min

Residual length: 60 cm



„Brandschacht“-test #7919

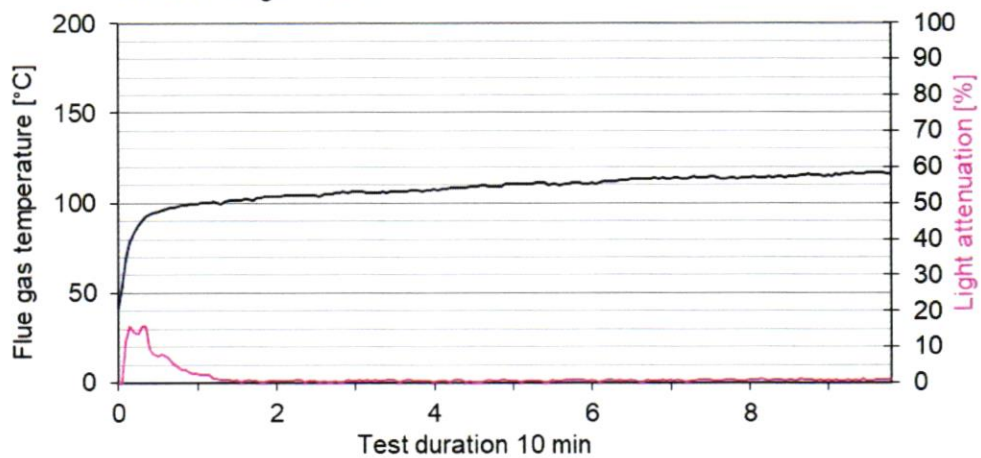


measurement

#7919, PN39467: B + S

Max. flue temperature: 117°C, Smoke density integral: 14%/min

Residual length: 64 cm



**Test for normal flammability
 classifying B2 according to DIN 4102**

1. Description of test material in condition as delivered look at page 2
2. Preparation of samples
 Out of the material there have been cut samples for the ignitability apparatus.
 The samples were kept in a climate 23/50 until they reached constant weight.
3. Arrangement of samples -freely suspended-
 Flaming in warp and in weft direction / Flaming side A and side B
4. Date of test CW 25 in 2024
5. Results

PN 39467: flaming side A in weft direction	surface-test						edge-test						Dim
	1	2	3	4	5	6	1	2	3	4	5	6	
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition ¹⁾	2	2	2	2	2	--	1	--	--	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
max. flame height	14	14	14	14	14	--	14	--	--	--	--	--	cm
time ¹⁾	13	15	13	13	15	--	10	--	--	--	--	--	s
self-cessation of the flames end of afterflame ¹⁾	16	17	16	15	15	--	12	--	--	--	--	--	s
end of glowing ¹⁾	22	26	22	27	21	--	18	--	--	--	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
Appearance after test: burned out till max. height 12 cm x width 3 cm													

PN 39467: additional tests	edge-test						surface-test						Dim
	1	2	3	4	5	6	1	2	3	4	5	6	
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
arrangement of samples side / direction	A/K	B/K	B/S	--	--	--	A/K	B/K	B/S	--	--	--	
ignition ¹⁾	1	1	1	--	--	--	2	2	1	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	13	12	13	--	--	--	14	14	14	--	--	--	cm
time ¹⁾	10	12	10	--	--	--	15	15	15	--	--	--	s
self-cessation of the flames end of afterflame ¹⁾	15	15	12	--	--	--	20	18	19	--	--	--	s
end of glowing ¹⁾	20	20	17	--	--	--	30	20	24	--	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 12 cm x width 3 cm													

¹⁾ time mentioned from the beginning of the test ²⁾ during 20 Sec -/- no appearance -- no information
 K: warp / S: weft

PN 39465: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
arrangement of samples side / direction	A/K	B/K	A/S	B/S	--	--	A/K	B/K	A/S	B/S	--	--	
ignition ¹⁾	1	1	1	1	--	--	2	2	2	2	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	14	13	13	12	--	--	13	14	14	14	--	--	cm
time ¹⁾	10	12	15	10	--	--	12	15	15	15	--	--	s
self cessation of the flames ¹⁾	14	15	22	15	--	--	15	20	23	21	--	--	s
end of glowing ¹⁾	20	18	26	20	--	--	24	22	24	37	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 12 cm x width 3 cm													

PN 39464: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
arrangement of samples side / direction	A/K	B/K	A/S	B/S	--	--	A/K	B/K	A/S	B/S	--	--	
ignition ¹⁾	1	1	1	1	--	--	1	1	1	1	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	12	12	14	12	--	--	13	13	13	13	--	--	cm
time ¹⁾	15	15	15	15	--	--	15	15	15	15	--	--	s
self cessation of the flames ¹⁾	15	15	20	18	--	--	22	15	16	19	--	--	s
end of glowing ¹⁾	34	20	25	30	--	--	34	20	31	29	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 12 cm x width 3 cm													

PN 39463: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
arrangement of samples side / direction	A/K	B/K	A/S	B/S	--	--	A/K	B/K	A/S	B/S	--	--	
ignition ¹⁾	1	1	1	1	--	--	2	2	2	2	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	12	12	13	13	--	--	13	14	14	13	--	--	cm
time ¹⁾	10	10	12	12	--	--	12	12	14	15	--	--	s
self cessation of the flames ¹⁾	12	12	18	15	--	--	15	16	19	23	--	--	s
end of glowing ¹⁾	22	22	34	20	--	--	29	26	31	30	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	heavy						heavy						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 12 cm x width 3 cm													

¹⁾ time mentioned from the beginning of the test ²⁾ during 20 Sec -/- no appearance -- no information

K: warp / S: weft

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

7. Opinion concerning the dropping of burning material

The test for normal flammability shows no burning dripping material.