

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-241626

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	SAINT CLAIR TEXTILES 415, avenue de Savoie F-38110 Saint Clair de la Tour
description of samples	-polyester fabric with PVC coating, in 3 different colours-
name of the material	„LAC 720 SL”
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	30.11.2029
result	The examined product meets 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 7 enclosures.

Remark: If the above mentioned building material is not used as product according to MBO § 2, Abs. 9, Ziffer1, 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.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 40377: „LAC 720 SL“ colour: **white**

-polyester fabric with PVC coating-
side A: smoother

characteristic values determined by the test laboratory:

area weight: about 709 g/m² thickness: about 0,54mm

PN 40378: „LAC 720 SL“ colour: **green**

-polyester fabric with PVC coating-
side A: smoother

characteristic values determined by the test laboratory:

area weight: about 732g/m² thickness: about 0,55mm

PN 40379: „LAC 720 SL“ colour: **grey**

-polyester fabric with PVC coating-
side A: smoother

characteristic values determined by the test laboratory:

area weight: about 731g/m² thickness: about 0,53mm

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

#8600:	flaming side A in warp direction	grey
#8601:	flaming side B in warp direction	grey
#8602:	flaming side B in weft direction	grey
#8606:	flaming side B in warp direction	white
#8607:	flaming side B in warp direction	green

4. Date of test CW 50 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	#8600	#8601	#8602	#8606	#8607	
	flaming direction / side	warp / A	warp / B	weft / B	warp / B	warp / B	
	<u>colour of fabric</u>	grey			white	green	
1	<u>Number of specimen arrangement</u> acc. to. DIN 4102/T15, schedule 1	1	1	1	1	1	
2	<u>Maximum flame height above bottom</u> <u>edge of the specimen</u>	60	70	60	70	60	cm
3	Time ¹⁾	0:12	0:12	0:10	0:11	0:10	min:s
4	<u>Burn through / melting</u> Time ¹⁾	0:13	0:13	0:13	0:14	0:12	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	Extent sporadic falling of burning droplets ²⁾	---	---	---	---	---	
9	continuous falling of burning droplets ²⁾	---	---	---	---	---	min:s
10	<u>Falling of burning droplets</u> Start ¹⁾	./.	./.	./.	./.	./.	min:s
11	Extent sporadic falling of burning droplets ²⁾	---	---	---	---	---	
12	continuous falling of burning droplets ²⁾	---	---	---	---	---	
13	<u>After flame time at the bottom of the</u> <u>sieve (max.)</u>	./.	./.	./.	./.	./.	min:s
14	<u>Impairment of the burner by dropping or</u> <u>falling material:</u> Time ¹⁾	./.	./.	./.	./.	./.	min:s
15	Final occurrence of burning at the specimen ¹⁾	2:40	3:40	2:10	2:20	1:50	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.
		#8600	#8601	#8602	#8606	#8607	
	Test number						
	flaming direction / side	warp / A	warp / B	weft / B	warp / B	warp / B	
	<u>Afterglow after end of test</u>	./.	./.	./.	./.	./.	min:s
22	Time ¹⁾	./.	./.	./.	./.	./.	
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⁾	./.	./.	./.	./.	./.	
	<u>Density of smoke</u>						% * min
28	≤ 400 % * min	49	58	59	54	64	
29	> 400 % * min ⁴⁾	./.	./.	./.	./.	./.	
30	Diagram: encl. no.	1	2	3	4	5	
	<u>Residual lengths: individual value³⁾</u>						cm
31	Specimen 1	56	58	61	62	59	
	Specimen 2	58	62	62	59	67	
	Specimen 3	66	43	51	50	51	
	Specimen 4	64	55	58	59	50	
32	<u>Average value, individual test ³⁾</u>	61	55	58	58	57	
33	<u>Photo of specimen in enclosure no.</u>	1	2	3	4	5	
34	<u>Flue gas temperature</u>	111	111	110	111	115	°C
35	Maximum of average value Time ¹⁾	10:00	02:30	09:27	09:57	09:45	min:s
36	Diagram: encl. no.	1	2	3	4	5	
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

line no.	measurement	Result with the tested specimen					Dim.
	test-no.	#8600 warp / A	#8601 warp / B	#8602 weft / B	#8606 warp / B	#8607 warp / B	
	<u>colour of fabric</u>	grey			white	green	
1	residual length	61	55	58	58	57	cm
2	max. smoke temperature	115	111	110	111	115	°C
3	density of smoke - integral	49	58	59	54	64	%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 6 & 7).

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, 13.12.2024

clerk in charge:



(Dipl.-Ing.(FH) Jürgen Hammer)



Head of the test laboratory:



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

„Brandschacht“-test #8600

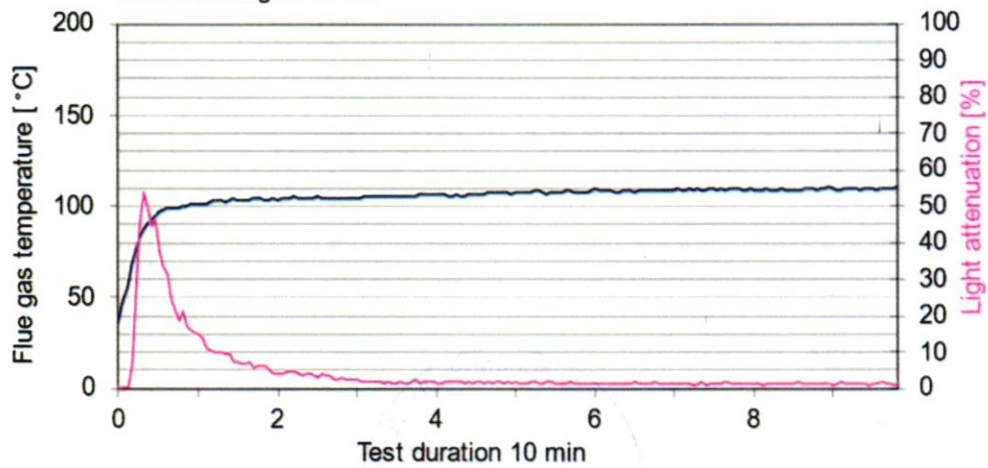


measurement

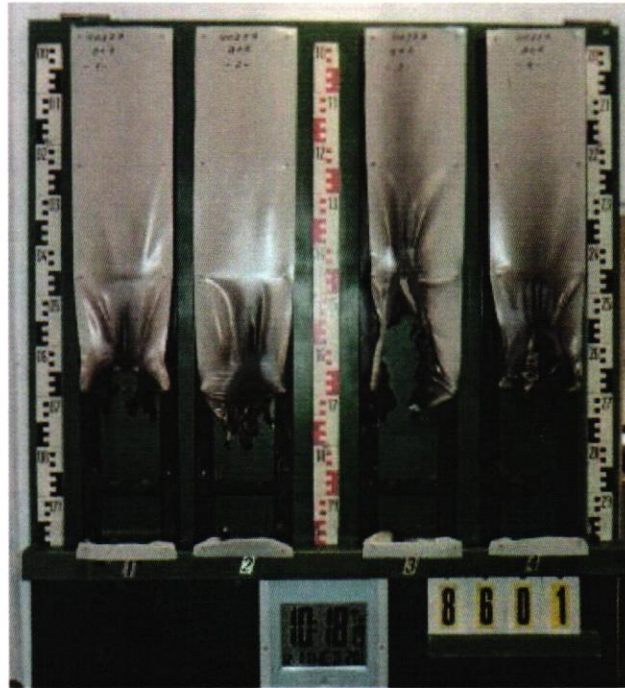
#8600, PN40379: A + K

Max. flue temperature: 111 °C, Smoke density integral: 49%min

Residual length: 61 cm



„Brandschacht“-test #8601

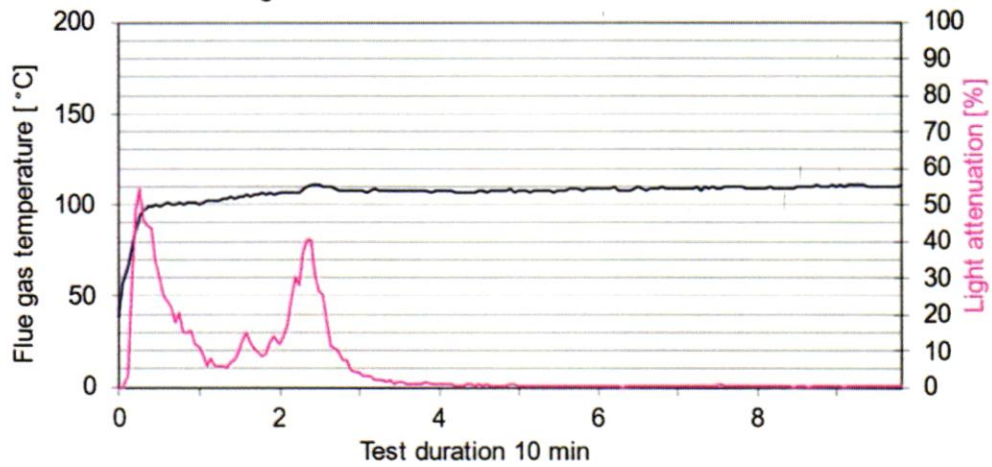


measurement

#8601, PN40379: B + K

Max. flue temperature: 111 °C, Smoke density integral: 58%min

Residual length: 55 cm



„Brandschacht“-test #8602

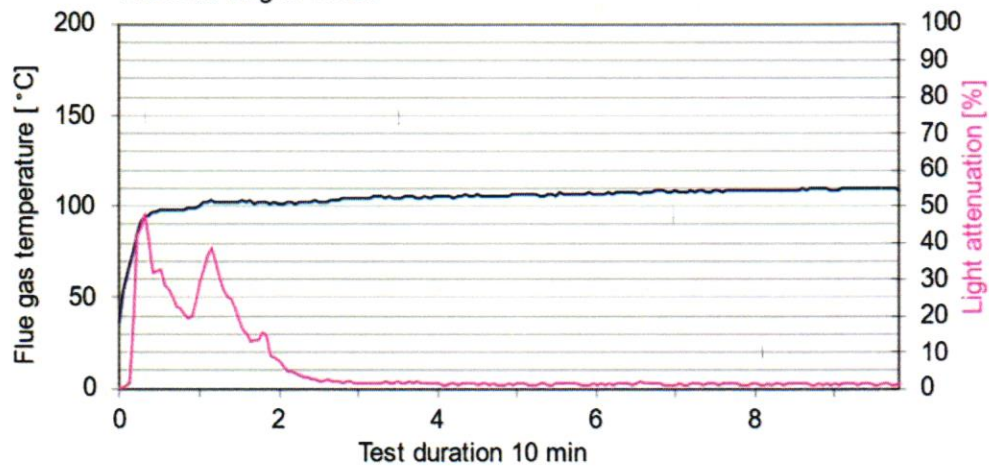


measurement

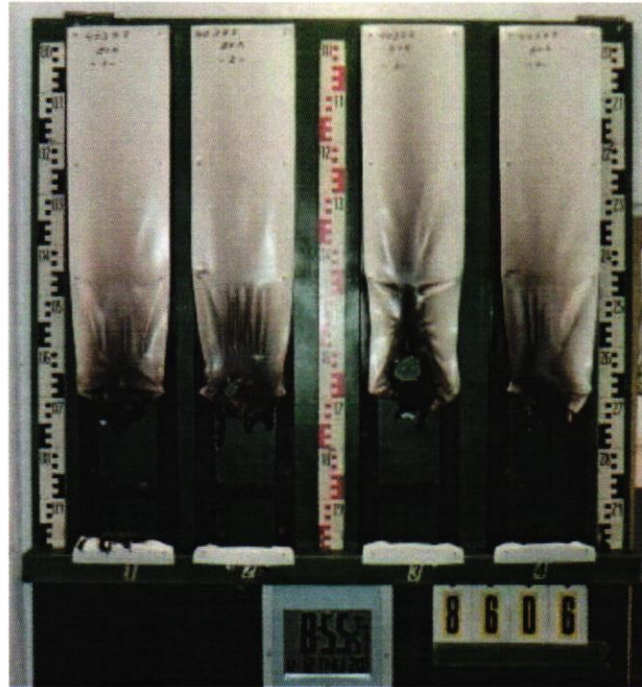
#8602, PN40379: B + S

Max. flue temperature: 110 °C, Smoke density integral: 59%min

Residual length: 58 cm



„Brandschacht“-test #8606

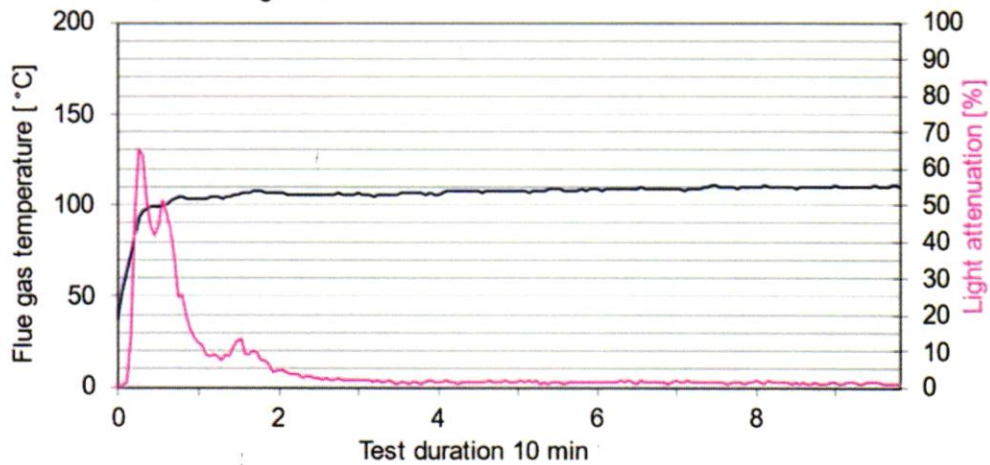


measurement

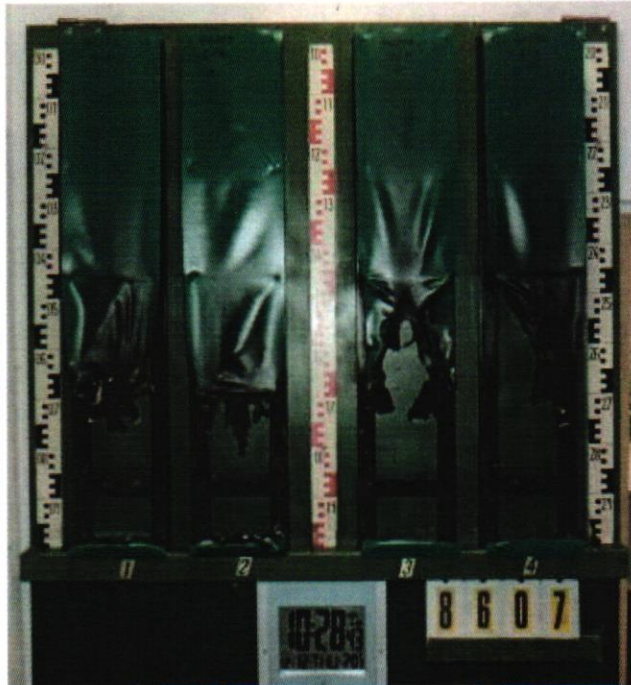
#8606, PN40377: B + K

Max. flue temperature: 111 °C, Smoke density integral: 54%min

Residual length: 58 cm



„Brandschacht“-test #8607

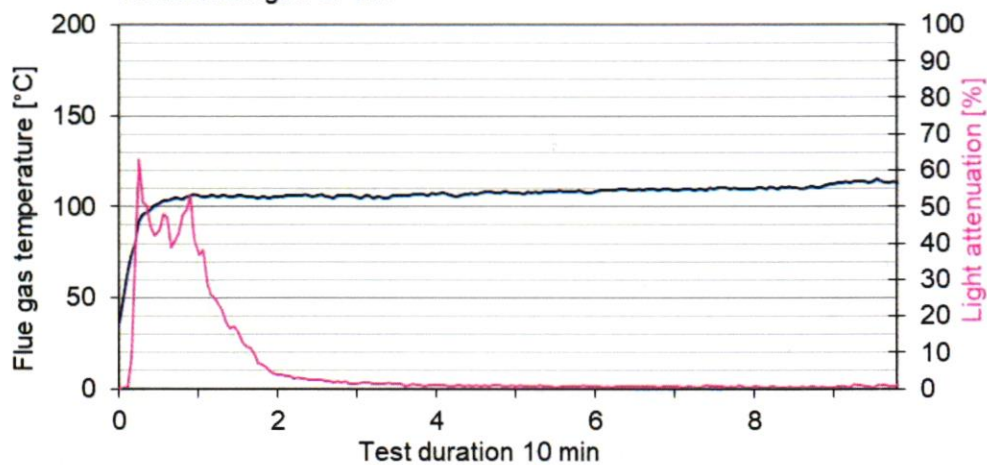


measurement

#8607, PN40378: B + K

Max. flue temperature: 115°C, Smoke density integral: 64%min

Residual length: 57 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 49 in 2024

5. Results

PN 40379: flaming side A in warp direction	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	
ignition ¹⁾	1	1	1	1	1	--	4	--	--	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	S
max. flame height	9	9	9	9	9	--	8	--	--	--	--	--	cm
time	15	15	15	15	15	--	15	--	--	--	--	--	
self cessation of the flames end of afterflame ¹⁾	16	16	16	16	16	--	15	--	--	--	--	--	s
end of glowing ¹⁾	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	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 10 cm x width 3 cm													

PN 40379: 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	B/wa	A/we	B/we	--	--	--	B/wa	A/we	B/we	--	--	--	
ignition ¹⁾	1	1	1	--	--	--	4	4	4	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	9	9	9	--	--	--	8	8	8	--	--	--	cm
time	15	15	15	--	--	--	15	15	15	--	--	--	
self cessation of the flames end of afterflame ¹⁾	16	16	16	--	--	--	15	15	15	--	--	--	s
end of glowing ¹⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	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 10 cm x width 3 cm													

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

PN 40378: additional tests	edge-test						surface-test						Dim
	1	2	3	4	5	6	1	2	3	4	5	6	
samples no.													
arrangement of samples side / direction	A/wa	B/wa	A/we	B/we	--	--	A/wa	B/wa	A/we	B/we	--	--	
ignition ¹⁾	1	1	1	1	--	--	4	4	4	4	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	8	8	8	8	--	--	7	7	7	7	--	--	cm
time	15	15	15	15	--	--	15	15	15	15	--	--	
self cessation of the flames end of afterflame ¹⁾	16	16	16	16	--	--	15	15	15	15	--	--	s
end of glowing ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	heavy						moderate						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 10 cm x width 3 cm													

PN 40377: additional tests	edge-test						surface-test						Dim
	1	2	3	4	5	6	1	2	3	4	5	6	
samples no.													
arrangement of samples side / direction	A/wa	B/wa	A/we	B/we	--	--	A/wa	B/wa	A/we	B/we	--	--	
ignition ¹⁾	1	1	1	1	--	--	4	4	4	4	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	8	8	8	8	--	--	7	7	7	7	--	--	cm
time	15	15	15	15	--	--	15	15	15	15	--	--	
self cessation of the flames end of afterflame ¹⁾	16	16	16	16	--	--	15	15	15	15	--	--	s
end of glowing ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	heavy						moderate						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 10 cm x width 3 cm													

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

- Remarks and explanations to the testing procedure - none -
- Opinion concerning the dropping of burning material
The test for normal flammability shows no burning dripping material.