

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-220387

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

<b>company</b>	<b>SAINT CLAIR TEXTILES</b> 415 Avenue de Savoie F – 38110 SAINT CLAIR DE LA TOUR
<b>description of samples</b>	fabric consisting of polyester with pvc-coating in 3 different colours
<b>name of the material</b>	„ARCADE FR”
<b>sampling</b>	by the company itself
<b>content of request</b>	Proof of flammability to classify building materials to class B1 “schwerentflammbar” according to DIN 4102, part 1
<b>validity of test report</b>	30.04.2027
<b>result</b>	<b>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 &gt;40 mm to same or other plain materials.</b>

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, 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.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 34928:** „ARCADE FR“ colour: white  
 -polyester fabric with pvc-coating-  
 side A: smoother  
characteristic values determined by the test laboratory:  
 area weight: about 535 g/m<sup>2</sup> thickness: about 0,42 mm
- PN 34929:** „ARCADE FR“ colour: red  
 -polyester fabric with pvc-coating-  
 side A: smoother  
characteristic values determined by the test laboratory:  
 area weight: about 542 g/m<sup>2</sup> thickness: about 0,28 mm
- PN 34930:** „ARCADE FR“ colour: black  
 -polyester fabric with pvc-coating-  
 side A: smoother  
characteristic values determined by the test laboratory:  
 area weight: about 538 g/m<sup>2</sup> thickness: about 0,40 mm

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

#5310:	PN 34930	side A in warp direction	black
#5311:	PN 34930	side B in warp direction	black
#5312:	PN 34930	side B in weft direction	black
#5313:	PN 34928	side B in warp direction	white
#5314:	PN 34929	side B in warp direction	red

**4. Date of test** CW 14 in 2022

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

line no.	Measurement	Result with the tested specimen					Dim.
	Test number	#5310	#5311	#5312	#5313	#5314	
	colour of fabric	black			white	red	
	flaming direction / side	warp / A	warp / B	weft / B	warp / B	warp / B	
1	Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1	1	1	1	1	1	
2	Maximum flame height above bottom edge of the specimen	60	60	60	60	60	cm
3	Time <sup>1)</sup>	0:02	0:04	0:03	0:05	0:04	min:s
4	Burn through / melting Time <sup>1)</sup>	0:07	0:07	0:07	0:08	0:08	min:s
	Observations on the back side of the specimen						
5	Flames / Glowing Time <sup>1)</sup>	---	---	---	---	---	min:s
6	Change of colour Time <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
7	Falling of burning droplets Start <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
8	Extent sporadic falling of burning droplets <sup>2)</sup>	---	---	---	---	---	
9	continuous falling of burning droplets <sup>2)</sup>	---	---	---	---	---	min:s
10	Falling of burning droplets Start <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
11	Extent sporadic falling of burning droplets <sup>2)</sup>	---	---	---	---	---	
12	continuous falling of burning droplets <sup>2)</sup>	---	---	---	---	---	
13	After flame time at the bottom of the sieve (max.)	./.	./.	./.	./.	./.	min:s
14	Impairment of the burner by dropping or falling material: Time <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
15	Final occurrence of burning at the specimen <sup>1)</sup>	1:55	2:50	4:16	1:48	2:21	min:s
16	Time of eventually end of test <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
17	After flame after end of test Time <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
18	Number of specimen	./.	./.	./.	./.	./.	
19	Front side of specimen <sup>2)</sup>	./.	./.	./.	./.	./.	
20	Back side of specimen <sup>2)</sup>	./.	./.	./.	./.	./.	
21	flame length	./.	./.	./.	./.	./.	cm



line no.	Measurement	Result with the tested specimen					Dim.
	Test number	#5310	#5311	#5312	#5313	#5314	
	colour of fabric	<b>black</b>			<b>white</b>	<b>red</b>	
	flaming direction / side	warp / A	warp / B	weft / B	warp / B	warp / B	
22	<u>Afterglow after end of test</u> Time <sup>1)</sup>	./.	./.	./.	./.	./.	min:s
23	Number of specimen	./.	./.	./.	./.	./.	
	Place of appearance	./.	./.	./.	./.	./.	
24	Lower half of the specimen <sup>2)</sup>	./.	./.	./.	./.	./.	
25	Upper half of the specimen <sup>2)</sup>	./.	./.	./.	./.	./.	
26	Front side of specimen <sup>2)</sup>	./.	./.	./.	./.	./.	
27	Back side of specimen <sup>2)</sup>	./.	./.	./.	./.	./.	
28	<u>Density of smoke</u> ≤ 400 % * min	<b>37</b>	<b>40</b>	<b>54</b>	<b>27</b>	<b>52</b>	% * min
29	> 400 % * min <sup>4)</sup>	./.	./.	./.	./.	./.	% * min
30	<u>Residual lengths: individual value <sup>3)</sup></u>						
	Specimen 1	54	56	55	57	57	cm
	Specimen 2	59	55	56	56	57	cm
	Specimen 3	54	54	55	55	59	cm
	Specimen 4	58	58	61	59	59	cm
31	<u>Average value, individual test <sup>3)</sup></u>	<b>56</b>	<b>56</b>	<b>57</b>	<b>57</b>	<b>58</b>	
32	<u>Flue gas temperature</u>	<b>122</b>	<b>124</b>	<b>124</b>	<b>121</b>	<b>123</b>	°C
33	Maximum of average value Time <sup>1)</sup>	09:39	09:48	09:48	07:58	09:54	min:s
34	Foto and Diagram: incl. no.	1	2	3	4	5	
35	Remarks: - none -						

<sup>1)</sup> indication of times: from the begin of testing procedure <sup>2)</sup> checked off if applicable

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

<sup>4)</sup> 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					dimension
	test-no.	#5310 warp / A	#5311 warp / B	#5312 weft / B	#5313 warp / B	#5314 warp / B	
	colour of fabric	black			white	red	
1	residual length	56	56	57	57	58	cm
2	max. smoke temperature	122	124	124	121	123	°C
3	density of smoke - integral	37	40	54	27	52	%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, 08.04.2022

clerk in charge:



(Silke Biendara)

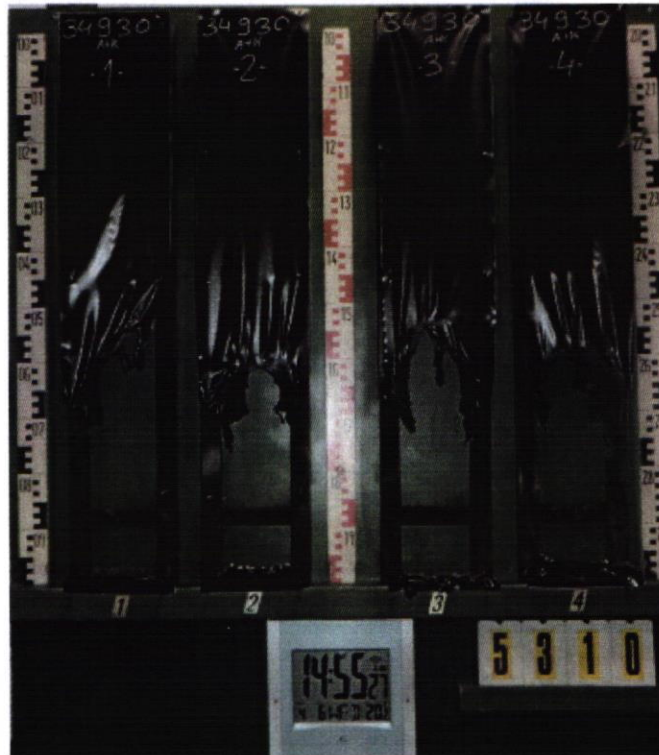


Head of the test laboratory:



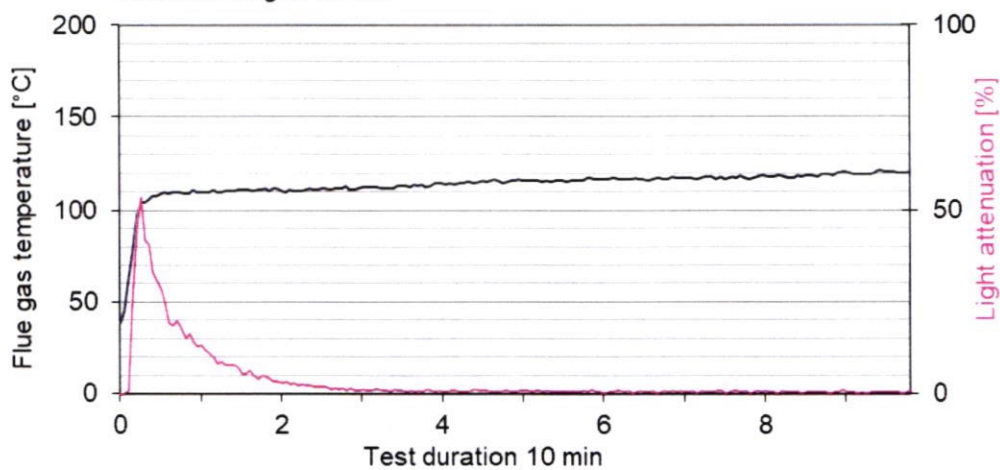
(Dipl.-Ing.(FH) Jürgen Hammer)

**„Brandschacht“-test #5310**



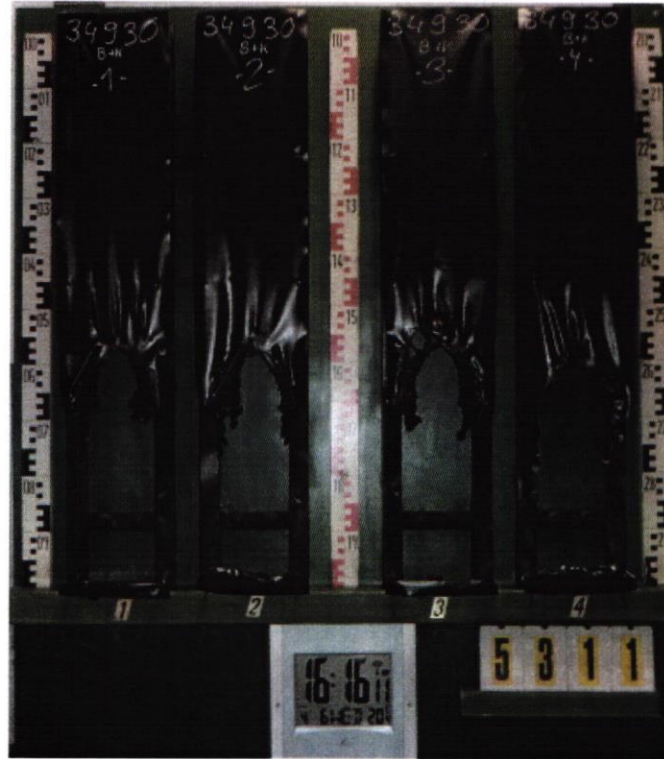
**measurement**

**#5310, PN34930: ARCADE FR schwarz, A + K**  
 Max. flue temperature: 122°C, Smoke density integral: 37%min  
 Residual length: 56 cm



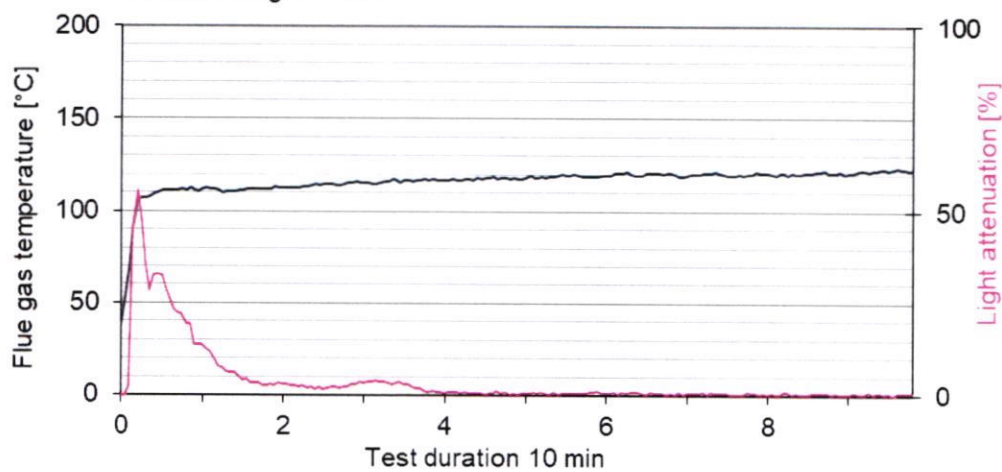


**„Brandschacht“-test #5311**



**measurement**

**#5311, PN34930: ARCADE FR schwarz, B + K**  
 Max. flue temperature: 124°C, Smoke density integral: 40%min  
 Residual length: 56 cm

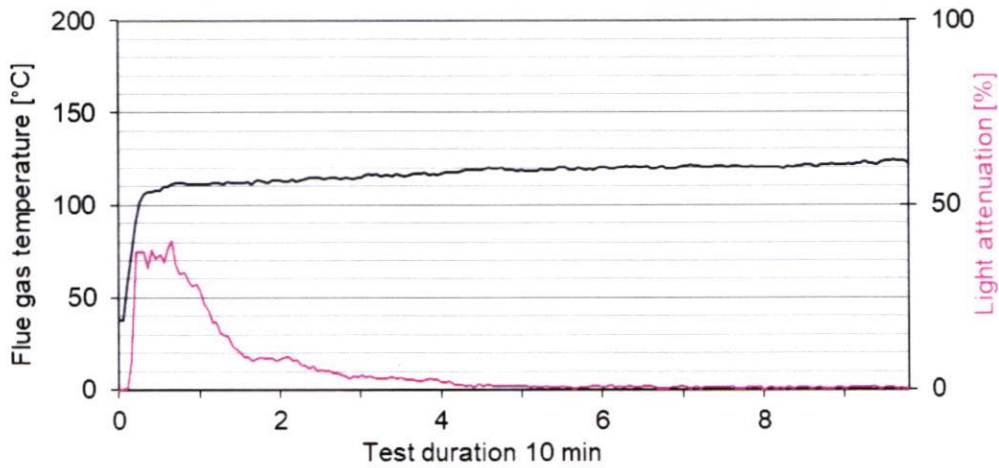


**„Brandschacht“-test #5312**



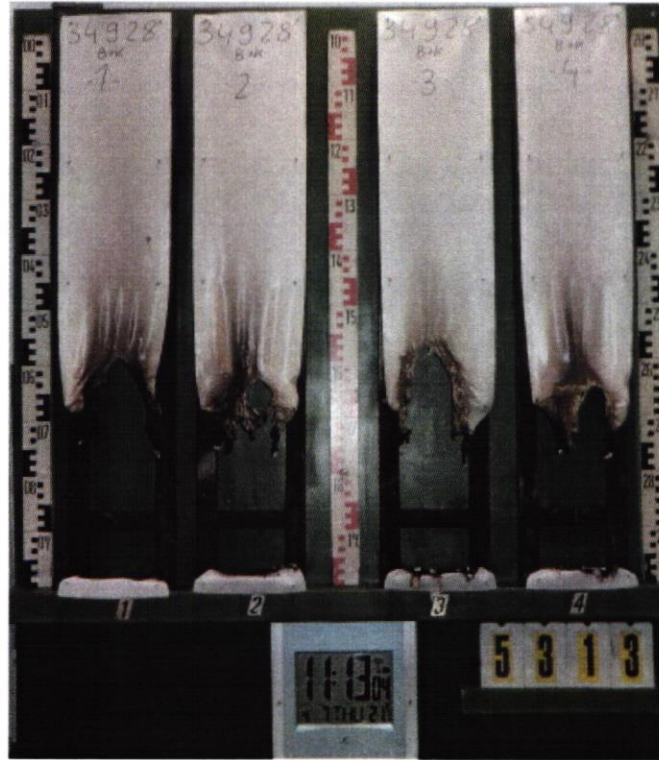
**measurement**

**#5312, PN34930: Arcade FR schwarz, B + S**  
Max. flue temperature: 124°C, Smoke density integral: 54%min  
Residual length: 57 cm



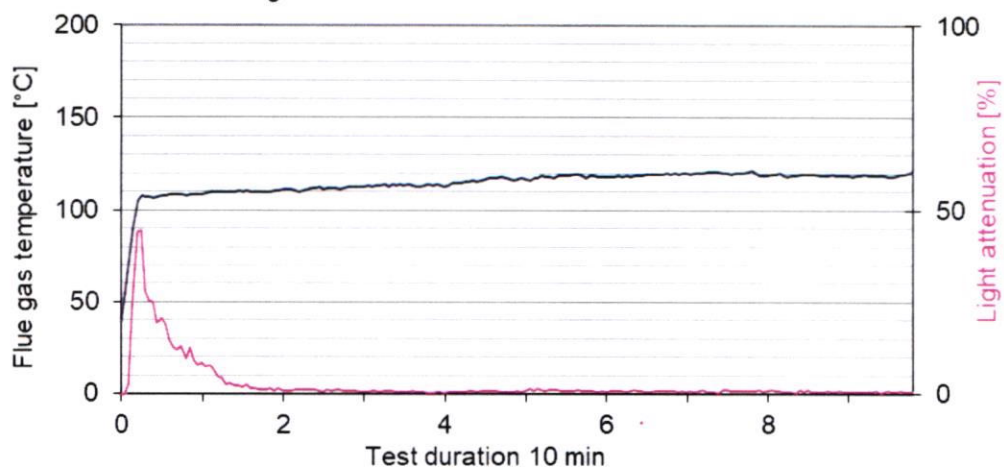


„Brandschacht“-test #5313



measurement

#5313, PN34928: Arcade FR schwarz, B + K  
 Max. flue temperature: 121°C, Smoke density integral: 27%/min  
 Residual length: 57 cm

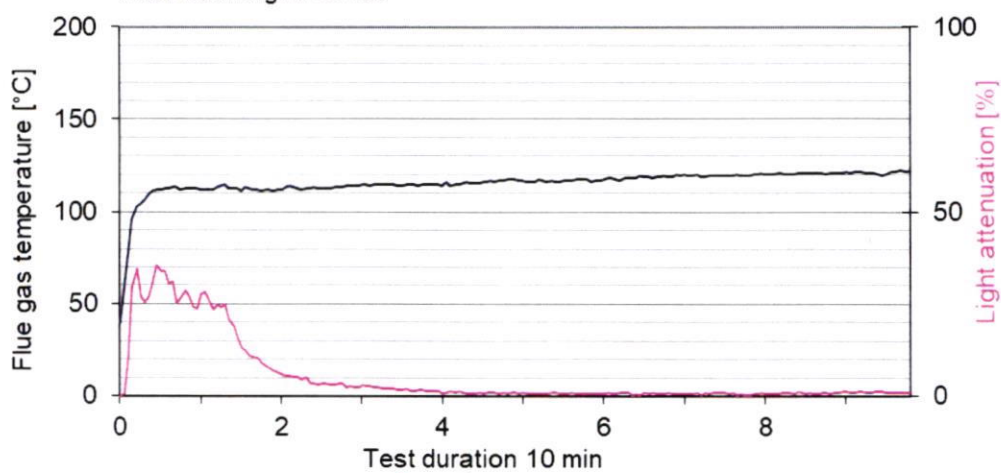


**„Brandschacht“-test #5314**



**measurement**

**#5314, PN34929: Arcade FR schwarz, B + K**  
Max. flue temperature: 123°C, Smoke density integral: 52%/min  
Residual length: 58 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 weft direction / Flaming side A and side B
4. Date of test CW 13 in 2022
5. Results

PN 34930: flaming side A in weft	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 <sup>1)</sup>	1	1	1	1	1	--	2	--	--	--	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	S
max. flame height	13	12	12	13	12	--	10	--	--	--	--	--	cm
time	15	15	15	15	15	--	15	--	--	--	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	16	16	16	22	16	--	15	--	--	--	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
smoke development (visual)	moderate						moderate						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
Appearance after test: burned out till max. height 17cm x width 4cm													

PN 34930: 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 <sup>1)</sup>	1	1	1	--	--	--	2	2	2	--	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	11	11	12	--	--	--	10	11	10	--	--	--	cm
time	15	15	15	--	--	--	15	15	15	--	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	16	16	16	--	--	--	15	15	15	--	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
smoke development (visual)	moderate						moderate						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 17 cm x width 4 cm													

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



PN 34929: 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/K	B/K	A/S	B/S	--	--	A/K	B/K	A/S	B/S	--	--	
ignition <sup>1)</sup>	1	1	1	1	--	--	2	2	2	2	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	<b>12</b>	<b>12</b>	<b>11</b>	<b>11</b>	--	--	<b>10</b>	<b>11</b>	<b>10</b>	<b>10</b>	--	--	cm
time	15	15	15	15	--	--	15	15	15	15	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	18	17	20	19	--	--	15	17	15	15	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	moderate						moderate						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 14 cm x width 3,5 cm													

PN 34928: 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/K	B/K	A/S	B/S	--	--	A/K	B/K	A/S	B/S	--	--	
ignition <sup>1)</sup>	1	1	1	1	--	--	2	2	2	2	--	--	s
reaching the mark of measurement <sup>1)2)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	<b>11</b>	<b>11</b>	<b>11</b>	<b>13</b>	--	--	<b>10</b>	<b>10</b>	<b>10</b>	<b>10</b>	--	--	cm
time	15	15	15	15	--	--	15	15	15	15	--	--	
self cessation of the flames end of afterflame <sup>1)</sup>	16	16	19	19	--	--	15	15	15	15	--	--	s
end of glowing <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	moderate						moderate						
dropping of burning material during 20 s <sup>1)</sup>	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
Appearance after test: burned out till max. height 12 cm x width 3,5 cm													

<sup>1)</sup> time mentioned from the beginning of the test <sup>2)</sup> 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.