DLAB
TEXTILE LABORATORY

Investigation report

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Datum - date : 20.09.2018

Investigation report No. 18-E-472

Order description:	Orienting test for flammability according to DIN 4102 (1998-05), Part 1 (B1)
Test samples:	article: 3896-65 be.tex® Greyback Soft
Sampling:	by orderer
Orderer:	see address
Date of order:	10.08.2018
Receipt of order:	14.08.2018
Date of testing:	week 38 in 2018
Number of pages:	6

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Test results

Description of test material in condition as delivered

Name of the material	Description of samples	Colour	thickness [mm]	weight [g/m²]
article: 3896-65 be.tex® Greyback Soft	Weft Knitwear 100% Polyester with coating on one side side A: textile white side side B: coated grey side Weight: 290g/m²	white/grey	≈ 0,37	≈ 274,50

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

Preparation of samples:
Out of the material there have been cut samples with the dimensions of 1000mm x 190mm to flame impingement for the ignitability apparatus.
The samples were kept in climate chamber 20 +/- 2 °C and 65 +/- 4 humidity until they reached constant weight.

Special remarks: product width is 98cm!

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Test results

1. Methode: "Brandschacht" test accordance to DIN 4102 (1998-05)

"Brandschacht" tests (Part 1)

Arrangement of samples: freely suspended

Sample A	flaming side A und B in length/cross direction	colour: white/grey	2 samples length side A/B 2 samples cross side A/B

			Result with the tested specimen				
		Dim.	A	B	C	D	E
1	**Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1**		1				
2	**Maximum flame height above bottom edge of the specimen**	cm	30				
3	Time [1]	min:s	0:10				
4	**Burn through / melting**						
	Time [1]	min:s	0:04				
5	**Observations on the back side of the specimen** Flames/Glowing Time [1]	 min:s	-				
6	Change of colour Time [1]	 min:s	-				
7	**Falling of burning droplets** Start [1]	min:s	no				
8	**Extent** Sporatic falling of burning droplets [2]		-				
9	Continuous falling of burning droplets [2]		-				
10	**Falling of burning parts** Start [1]		no				
11	Sporatic falling of burning parts [2]		-				
12	Continuous falling of burning parts[2]		-				
13	Afterflame time at the bottom of the sieve (max.)	min:s	-				
	Impairment of the burner by dropping or falling material:		no				
14	Time [1]	min:s	-				
15	**Premature end of test:** Final occurance of burnig at the specimen [1]	min:s	1:30				
16	Time of eventually end of test [1]	min:s	-				

[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

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"Brandschacht" tests (Part 2)

			Result with the tested specimen				
		Dim.	A	B	C	D	E
	Afterflame after end of test		yes				
17	Time	min:s	0:05				
18	Number of specimen		1				
19	Front side of specimen [2]		-				
20	Back side of specimen [2]		-				
21	Flame length	cm	-				
	Afterglow after end of test		no				
22	Time	min:s	-				
23	Number of specimen		-				
	Place of appearence		-				
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]		-				
	Density of smoke						
28	≤ 400% * min		103,27				
29	> 400% *min[4]		-				
30	Diagram: encl. No.		1				
	Residual lengths:						
31	Individual value [3]	cm	45 57 54 68				
32	Average value, individual test [3]	cm	56				
33	Photo of specimen in enclosure no.		1				
34	**Flue gas temperature**						
35	Maximum of average value	°C	123,6				
	Time [1]	min:s	9:59				
36	Diagram: encl. No.		1				
37	**Remarks:**		the remaining length of sample A is related to 98cm length				

[1] indication of times: from the begin of testing procedure
[2] checked of if applicable
[3] indication of carrier/foam layer separated in case of fire-proofing agents
[4] very strong development of smoke

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2. Method: **Fire behaviour of building materials and building components accordance DIN 4102-1 B2 (1998-05) - Test for normal flammability**

3. Description of test material in condition as delivered: look at page 2
4. Preparation of samples:
Out of the material there have been cut samples for the ignitability apparatus. The samples were kept 14 days in climate chamber 20 +/- 2 °C and 65 +/- 4 humidity.
5. Arrangement of samples: freely suspended, flaming in lenght and cross direction / flaming side A and side B
6. Date of Test: week 38 in 2018

Test results of normal flammability

lenght direction 3896-65 be.tex® Greyback Soft	Dim.	edge-test						surface-test					
samples no.		1	2	3	4	5	6	1	2	3	4	5	6
flaming direction	A/B	A	A	A	B	B		A	B				
ignition[1)]	s	1	1	1	1	1							
reaching the mark of measurement[1)2)]	s	/	/	/	/	/							
max. flame height	cm	/	8	7	/	/							
time	s	/	5	4	/	/							
self cessation of the flames end of afterflame[1)]	s	8	6	5	9	7							
end of glowing[1)]	s	/	/	/	/	/							
flames were extinguished after[)]	s	/	/	/	/	/							
smoke development (visual)		moderate											
dropping of burning material during 20s[1)]	s	/	/	/	/	/							
Appearence after test: burned out till max. height 14,0cm width 2,5cm													

cross direction 3896-65 be.tex® Greyback Soft	Dim.	edge-test						surface-test					
samples no.		1	2	3	4	5	6	1	2	3	4	5	6
flaming direction	A/B	A	A	A	B	B		A	B				
ignition[1)]	s	1	1	1	1	1							
reaching the mark of measurement[1)2)]	s	/	/	/	/	/							
max. flame height	cm	/	/	/	/	/							
time	s	/	/	/	/	/							
self cessation of the flames end of afterflame[1)]	s	4	3	3	3	3							
end of glowing[1)]	s	/	/	/	/	/							
flames were extinguished after[1)]	s	/	/	/	/	/							
smoke development (visual)		low											
dropping of burning material during 20s[1)]	s	/	/	/	/	/							
Appearance after test: burned out till max. height 8,0cm width 2,5cm													

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

6. Remarks and explanations to the testing procedure: -none-
7. Opinion concerning the dropping of burning material: The material shows no dripping burning material.

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Test results

Assesment:
The examined product described on page 2 has fulfilled the requirements for building material class B2. The "Brandschacht" carried out is an orienting individual test. It is therefore not a proof of a building material class according to DIN 4102-01 and must not be used as such. Further tests in the "Brandschacht" (see DIN 4102-16) are required for such proof. In this test, the requirements of DIN 4102-B1 were fulfilled.

Special remarks:

- This report in only valid for the material as described under paragraph 1 (see page 2). 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
- To noted is the notes in appendix D (DIN 4102-1)
- If the above-mentioned building materials is not used as product according to MBO § 2, Abs. 9, Ziffer 1,
- there is not need for a general building supervisory test report.
- This test report not replace an eventually necessary proof of applicability concerning building supervisory or building laws in the meaning of state building prescription. This has to be verified by:
  - "allgemeine bauaufsichtliche Zulassung" (general building inspectorate approval) or by
  - „allgemeine 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 pre scribed proofs of conformity
  - For non-regular building products for the needed proofs of applicability

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Only the information contained in the signed test report is binding.

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Attachment 1

Sample: A

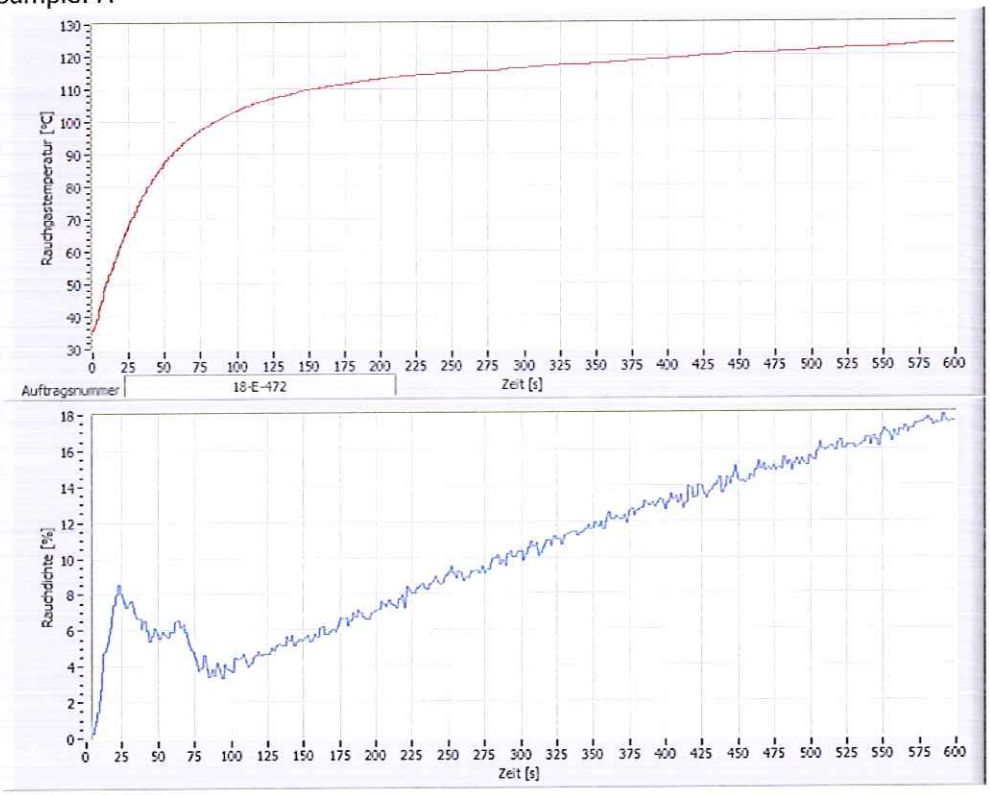

fig 1: Graphs of the flue gas temperature and the smoke density

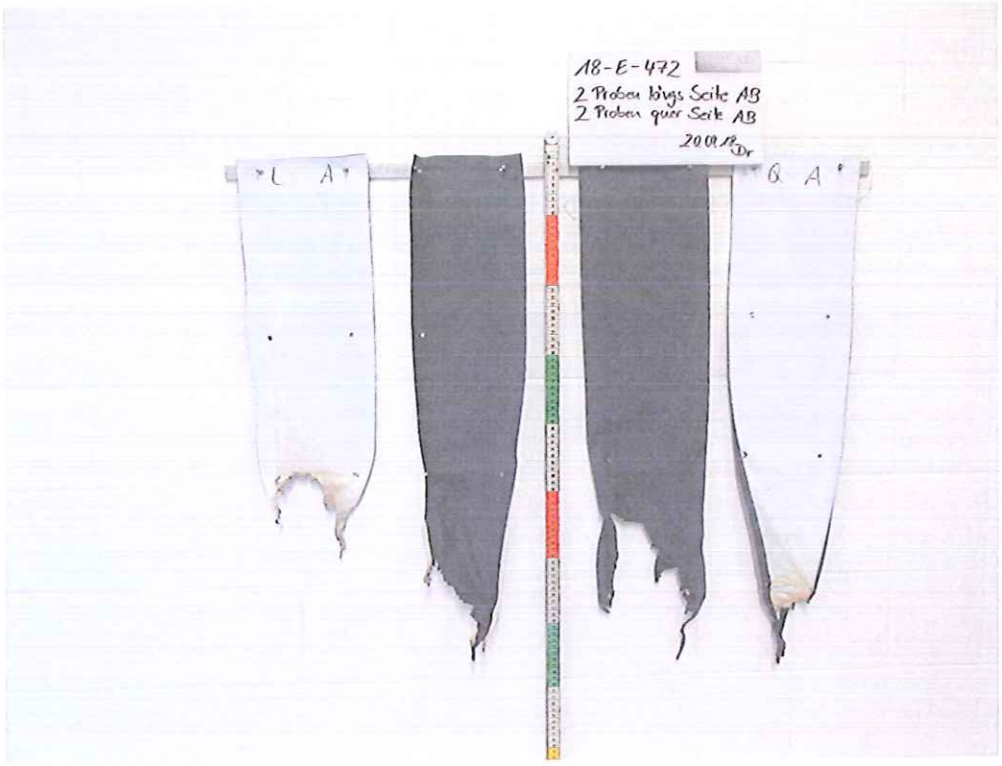

fig 2: Photo of test specimen after the test