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Bauaufsichtlich anerkannte Prüf-, Überwachungs- und Zertifizierungsstelle

TEST REPORT

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

Nr. PZ-Hoch-02341-3

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

Company:	Julius Heywinkel GmbH Textil- und Kunststoffwerk Heywinkelstraße 1 D-49565 Bramsche
Description of samples:	mesh fabric, unprinted (white) and printed (multicolour)
Name of the material:	“Heytex Artikel 5371 Mesh SR Werbematerial”
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 th September 2012 ^{*)}
Result:	The unprinted or printed product meets the requirements of class B1 for “schwerentflammbare” (hardly flammable) building materials according to DIN 4102, part 1 (May 1998) if used in one layer, suspended freely or with distance of >40 mm to same or other plain materials.

This test report includes 4 pages and 6 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.

*) prolongation on request.

1. Description of test material in condition as delivered

PN 1201 mesh fabric, white: "Heytex Artikel 5371 Mesh SR Werbematerial"
characteristic values determined by the test laboratory:
thickness 0,50 mm, area weight approx. 0,4 kg/m²

PN 1508 mesh fabric, multicoloured "Heytex Artikel 5371 Mesh SR Werbematerial"
characteristic values determined by the test laboratory:
thickness 0,46 mm, area weight approx. 0,38 kg/m²

prolongation:

PN 6937 mesh fabric, white: "Heytex Artikel 5371 Mesh SR Werbematerial"
characteristic values determined by the test laboratory:
thickness 0,53 mm, area weight approx. 0,38 kg/m²

PN 7115 mesh fabric, multicoloured "Heytex Artikel 5371 Mesh SR Werbematerial"
characteristic values determined by the test laboratory:
thickness 0,52 mm, area weight approx. 0,38 kg/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: freely suspended

#2126, flaming the unprinted fabric, sample 1 and 3 in warp direction
sample 2 and 4 in weft direction

#2129, flaming the unprinted fabric in warp direction

#2504, flaming the printed fabric in warp direction

#2505, flaming the printed fabric in weft direction

#7229, flaming the unprinted fabric in warp direction

#7329, flaming the printed fabric in weft direction

4. Date of test week 35 in 2002 and week 06 in 2003 and week 34 and 38 in 2007

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

line No.	Measurement	Result with the tested specimen						Dim.
		#2126 PN1201	#2129 PN1201	#2504 PN1201	#2505 PN1508	#7229 PN6937	#7329 PN7115	
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</u> above bottom edge of the specimen	40	40	40	50	40	40	cm
3	<u>Time</u> ¹⁾	0:10	0:08	0:08	1:17	0:22	0:06	min:s
4	<u>Burn through / melting</u> <u>Time</u> ¹⁾	0:01	0:01	0:02	0:02	0:06	0:03	min:s
5	<u>Observations on the back side of the specimen</u> Flames / Glowing	---	---	---	---	---	---	min:s
	<u>Time</u> ¹⁾	./.	./.	./.	./.	./.	./.	
6	Change of color	---	---	---	---	---	---	min:s
	<u>Time</u> ¹⁾	./.	./.	./.	./.	./.	./.	
7	<u>Falling of burning droplets</u> <u>Start</u> ¹⁾	./.	./.	./.	./.	./.	./.	min:s
	<u>Extent</u>	./.	./.	./.	./.	./.	./.	
8	sporadic falling of burning droplets ²⁾	---	---	---	---	---	---	min:s
9	continuous falling of burning droplets ²⁾	./.	./.	./.	./.	./.	./.	

line No.	Measurement	Result with the tested specimen						Dim.
		#2126 PN1201	#2129 PN1201	#2504 PN1201	#2505 PN1508	#7229 PN6937	#7329 PN7115	
10	<u>Falling of burning droplets</u>							
	Start ¹⁾	J.	J.	J.	J.	J.	J.	min:s
	Extent sporadic falling of burning droplets ²⁾	---	---	---	---	---	---	
11	continuous falling of burning droplets ²⁾	---	---	---	---	---	---	
12		---	---	---	---	---	---	
13	<u>Afterflame time at the bottom of the sieve (max.)</u>	J.	J.	J.	J.	J.	J.	min:s
14	<u>Impairment of the burner by dropping or falling material:</u>							
	Time ¹⁾	J.	J.	J.	J.	J.	J.	min:s
15	<u>Premature end of test</u>							
	Final occurrence of burning at the specimen ¹⁾	J.	J.	J.	J.	J.	J.	min:s
16	Time of eventually end of test ¹⁾	J.	J.	J.	J.	J.	J.	min:s
17	<u>Afterflame after end of test</u>							
	Time ¹⁾	J.	J.	J.	J.	J.	J.	min:s
18	Number of specimen	---	---	---	---	---	---	
19	Front side of specimen ²⁾	---	---	---	---	---	---	
20	Back side of specimen ²⁾	---	---	---	---	---	---	
21	flame length	---	---	---	---	---	---	cm
22	<u>Afterglow after end of test</u>							
	Time ¹⁾	J.	J.	J.	J.	J.	J.	min:s
23	Number of specimen	---	---	---	---	---	---	
24	<u>Place of appearance</u>							
	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	21	39	34	26	26	% * min
29	> 400 % * min ⁴⁾	---	---	---	---	---	---	% * min
30	Diagram: encl. no.	--	1	---	2	3	4	
31	<u>Residual lengths: individual value ³⁾</u>							
	Specimen 1	68	68	67	56	64	68	cm
	Specimen 2	65	66	66	67	67	68	cm
	Specimen 3	58	67	58	65	65	67	cm
	Specimen 4	67	65	68	66	69	65	cm
32	<u>Average value, individual test ³⁾</u>	65	67	65	64	66	67	
33	<u>Photo of specimen in enclosure no.</u>	---	1	---	2	3	4	
34	<u>Flue gas temperature</u>							
	Maximum of average value	122	109	120	111	119	111	°C
35	Time ¹⁾	10:00	10:00	10:00	10:00	10:00	10:00	min:s
36	Diagram: encl. no.	---	1	---	2	3	4	
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:

-none-

7. Summary of results and additional establishments to Fire Behaviour:

lineo.	Measurement test-no.	Result with the tested specimen						dimen- sion
		#2126 PN1201	#2129 PN1201	#2504 PN1201	#2505 PN1508	#7229 PN6937	#7329 PN7115	
1	residual length	65	67	65	64	66	67	cm
2	max. smoke temperature	122	109	120	111	119	111	°C
3	density of smoke - integral	19	21	39	34	26	26	%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.

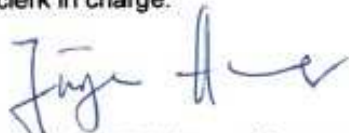
8. Special remarks:

- 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.
- The samples were not exposed 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, 28th October 2008

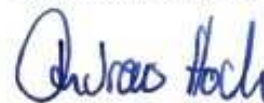
clerk in charge:



(Dipl.-Ing. (FH) Jürgen Hammer)

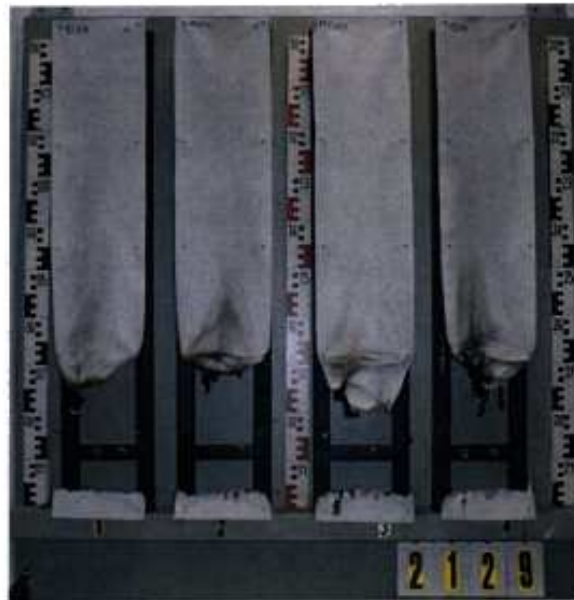


Head of the test laboratory:

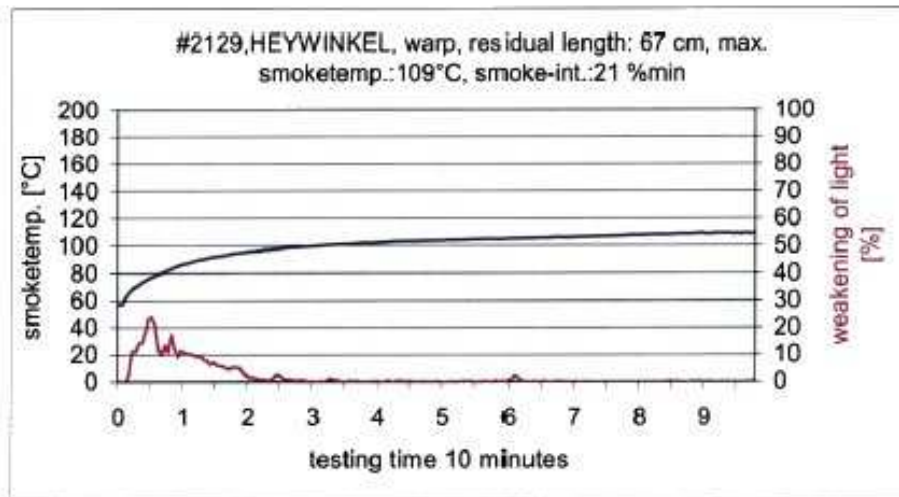


(Dipl.-Ing. (FH) Andreas Hoch)

„Brandschacht“-test #2129



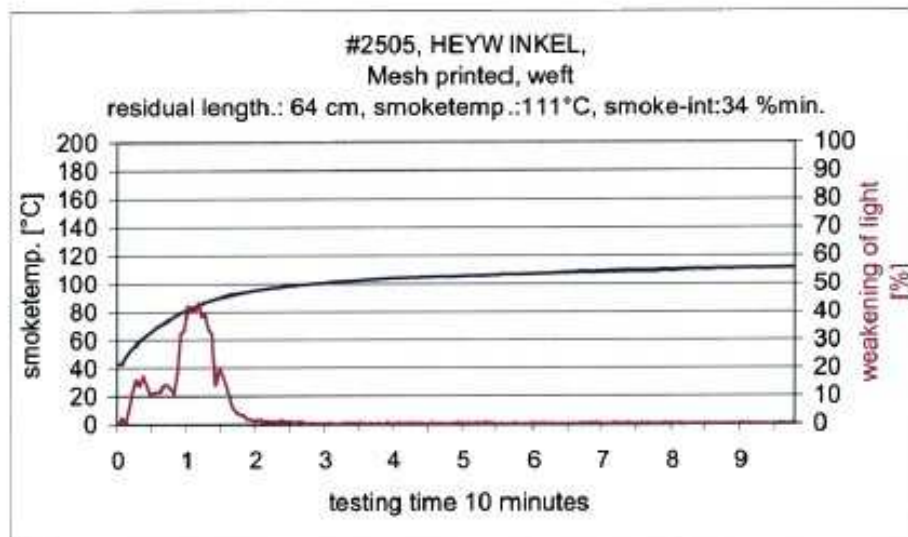
results of measurement:



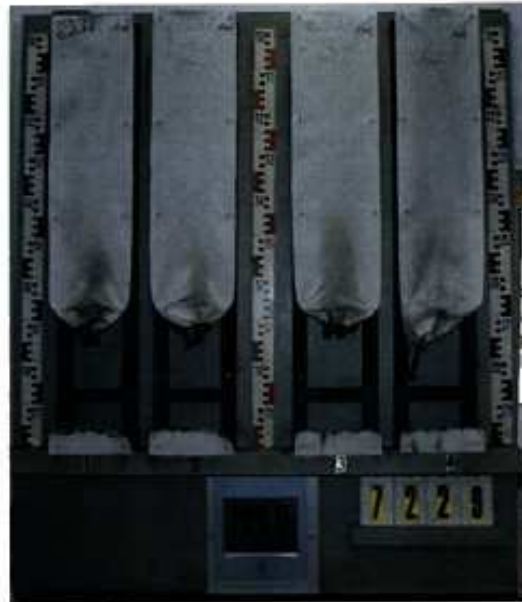
„Brandschacht“-test #2505



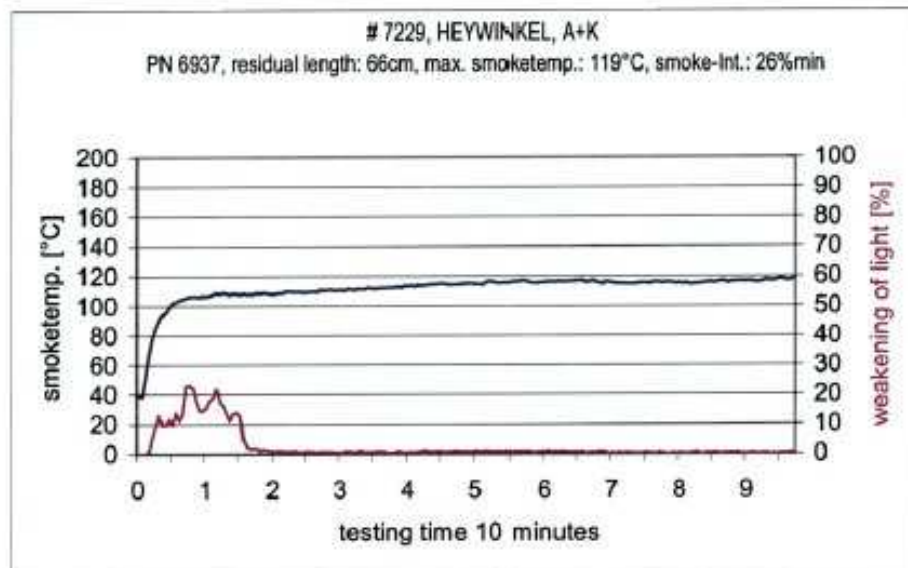
results of measurement:



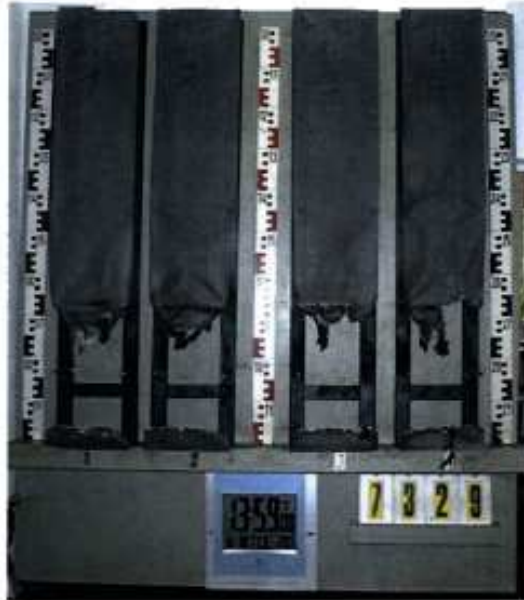
„Brandschacht“-test #7229



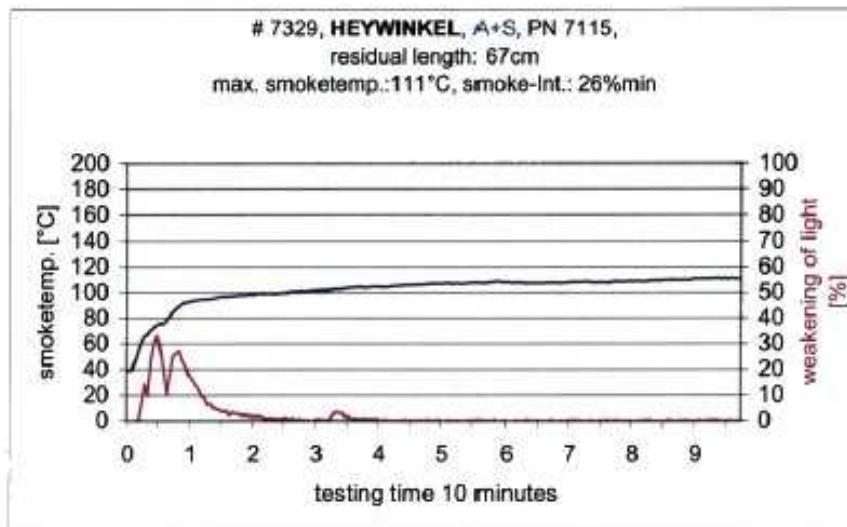
measurement



„Brandschacht“-test #7329



measurement



Test for normal flammability
classifying B2 according to DIN 4102

1. Description of test material in condition as delivered
look at page 2
The testing laboratory is not provided with further details concerning composition of the tested building materials. Samples are deposited.
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
4. Date of test week 35 in 2002 and week 06 in 2003 and week 34 in 2007
5. Results:

ignitability apparatus PN 1201	warp					weft					
samples no.	1	2	3	4	5	1	2	3	4	5	
ignition ¹⁾	1	1	1	1	1	1	1	1	1	1	s
reaching the mark of measurement ¹⁾²⁾	J.	J.	J.	J.	J.	J.	J.	J.	J.	J.	s
Max. flame height	8	10	10	9	10	9	9	8	10	8	cm
time	7	8	7	5	6	7	7	6	8	5	s
self cessation of the flames end of afterflame ¹⁾	9	9	10	6	8	10	10	9	7	8	s
flames were extinguished after ¹⁾	J.	J.	J.	J.	J.	J.	J.	J.	J.	J.	s
smoke development (visual)	little					little					
dropping of burning material during 20 s ¹⁾	J.	J.	J.	J.	J.	J.	J.	J.	J.	J.	s
appearance after test:	burned out till max. height 6 cm x width 1 cm, sooted till top of the sample										
ignitability apparatus PN 1508	warp					weft					
samples no.	1	2	3	4	5	1	2	3	4	5	
ignition ¹⁾	1	1	1	--	--	1	1	1	--	--	s
reaching the mark of measurement ¹⁾²⁾	J.	J.	J.	--	--	J.	J.	J.	--	--	s
Max. flame height	11	11	12	--	--	9	9	8	--	--	cm
time	10	9	11	--	--	7	7	6	--	--	s
self cessation of the flames end of afterflame ¹⁾	11	9	13	--	--	10	10	9	--	--	s
flames were extinguished after ¹⁾	J.	J.	J.	--	--	J.	J.	J.	--	--	s
smoke development (visual)	moderate					moderate					
dropping of burning material during 20 s ¹⁾	J.	J.	J.	--	--	J.	J.	J.	--	--	s
appearance after test:	burned out till max. height 9 cm x width 1 cm, sooted till top of the sample										

¹⁾ time mentioned from the beginning of the test
J. - no appearance

²⁾ during 20 Sec
- no information

ignitability apparatus PN 6937	warp					weft					
	1	2	3	4	5	1	2	3	4	5	
samples no.											
ignition ¹⁾	1	1	1	--	--	1	1	1	--	--	s
reaching the mark of measurement ^{1 2)}	.J.	.J.	.J.	--	--	.J.	.J.	.J.	--	--	s
Max. flame height	8	10	10	--	--	10	10	12	--	--	cm
time	6	9	7	--	--	10	13	12	--	--	s
self cessation of the flames end of afterflame ¹⁾	7	11	11	--	--	12	12	13	--	--	s
flames were extinguished after ¹⁾	.J.	.J.	.J.	--	--	.J.	.J.	.J.	--	--	s
smoke development (visual)	heavy					heavy					
dropping of burning material during 20 s ¹⁾	.J.	.J.	.J.	--	--	.J.	.J.	.J.	--	--	s
appearance after test:	burned out till max. height 9,5 cm x width 2 cm										
ignitability apparatus PN 7115	warp					weft					
	1	2	3	4	5	1	2	3	4	5	
samples no.											
ignition ¹⁾	1	1	1	1	1	1	1	1	1	1	s
reaching the mark of measurement ^{1 2)}	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	s
Max. flame height	9	10	10	10	9	11	10	11	11	10	cm
time	8	9	7	8	9	10	9	9	9	10	s
self cessation of the flames end of afterflame ¹⁾	10	10	8	9	10	12	11	10	11	12	s
flames were extinguished after ¹⁾	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	s
smoke development (visual)	heavy					heavy					
dropping of burning material during 20 s ¹⁾	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	.J.	s
appearance after test:	burned out till max. height 11 cm x width 2 cm										

¹⁾ time mentioned from the beginning of the test
 .J. no appearance

²⁾ during 20 Sec
 -- no information

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

7. Opinion concerning the dropping of burning material:

The tested material is classified as not dropping burning material.