

Fire Test Certificate - Specimen

Fabric: IFR Molton CS

Type: B1

J&C Joel 
Inspiration in every performance

Prüfinstitut Hoch

Lerchenweg 1

D-97650 Fladungen

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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-240737

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

description of samples	fabric consisting of 100 PES FR, in black and white colour
name of the material	„CS-Molton“
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	31.05.2029
result	The examined product meets in black and in white colour the requirements of class B1 for hardly flammable ("schwerentflammbare") building materials according to DIN 4102, pt. 1 (May 1998), 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 building material mentioned above is not used as a 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 as defined by 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 as defined by State Building Prescriptions. This has to be certified instead 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 irregular building products for the required proofs of applicability.

Without written consent of the test laboratory, this test report may only be published or duplicated during its denoted period of validity, providing that no changes to appearance or content are made.

PR-04-FB01 eng Rev04
member of 
notified body no.: 1508

By the DAkkS according to DIN EN ISO/IEC 17025 accredited test laboratory.
The accreditation is valid for the testing methods specified in the certificate.



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1. Description of test material in condition as delivered

PN 39102 "CS-Molton" colour: black

-fabric consisting of 100% PES FR- / side A: smoother surface
characteristic values determined by the test laboratory:
area weight: about 358 g/m² thickness: about 0,86 mm

PN 39103 "CS-Molton" colour: white

-fabric consisting of 100% PES FR- / side A: smoother surface
characteristic values determined by the test laboratory:
area weight: about 321 g/m² thickness: about 0,65 mm

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

2. Preparation of samples

Samples with a size of 1000 mm height and 190 mm width where cut from the material for fire testing.

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

3. Arrangement of samples

mounting: freely suspended

#7793:	flaming side A in warp direction	black
#7795:	flaming side B in warp direction	black
#7796:	flaming side A in weft direction	black
#7794:	flaming side A in warp direction	white

4. Date of test

CW 21 in 2024

5. Results

The test has been performed according to DIN 4102 (Mai 1998)

line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#7793	#7795	#7796	#7794	
	flaming direction	warp	warp	weft	warp	
	side	A	B	A	A	
	colour of fabric	black			white	
1	Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1	1	1	1	1	---
2	Maximum flame height above bottom edge of specimen	40	40	40	40	---
3	Time ¹⁾	0:04	0:03	0:04	0:03	---
4	Burn-through / melting Time ¹⁾	0:06	0:05	0:05	0:05	---
5	Observations on the back side of specimen					
	Flames / Glowing	---	---	---	---	---
	Time ¹⁾	.f.	.f.	.f.	.f.	.f.
6	Change of colour	---	---	---	---	---
	Time ¹⁾	.f.	.f.	.f.	.f.	.f.
7	Falling of burning droplets	.f.	.f.	.f.	.f.	
	Start ¹⁾					min:s
	Extent					
8	sporadic falling of burning droplets ²⁾	-	-	-	-	
9	continuous falling of burning droplets ²⁾	-	-	-	-	min:s



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line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#7793	#7795	#7796	#7794	
	flaming direction	warp	warp	weft	warp	
	side	A	B	A	A	
10	<u>Falling of burning parts</u> Start ¹⁾	./.	./.	./.	./.	min:s
	Extent					
11	sporadic falling of burning parts ²⁾	-	-	-	-	
12	continuous falling of burning parts ²⁾	-	-	-	-	
13	<u>Burning duration at sieve plate (max.)</u>	./.	./.	./.	./.	min:s
14	<u>Impairment of burner by dropping or falling material:</u> Time ¹⁾	./.	./.	./.	./.	min:s
15	<u>Premature end of test</u> Final occurrence of burning at the specimen ¹⁾	0:31	0:22	0:29	0:38	min:s
16	Time of eventually end of test ¹⁾	./.	./.	./.	./.	min:s
17	<u>Afterburning after end of test</u> Time ¹⁾	./.	./.	./.	./.	min:s
18	Number of specimen	-	-	-	-	
19	Front side of specimen ²⁾	-	-	-	-	
20	Rear side of specimen ²⁾	-	-	-	-	
21	flame length	-	-	-	-	cm
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	Rear side of specimen ²⁾	-	-	-	-	
28	<u>Density of smoke</u> ≤ 400 % * min	1	1	1	1	% * min
29	> 400 % * min ⁴⁾	-	-	-	-	% * min
30	Diagram in enclosure no.	1	2	3	4	
31	<u>Residual lengths: individual values ³⁾</u> Specimen 1 Specimen 2 Specimen 3 Specimen 4	67 58 62 64	73 60 65 74	60 59 58 69	71 64 66 60	cm cm cm cm
32	<u>Average residual length ³⁾</u>	63	68	62	65	
33	Photo of specimen in enclosure no.	1	2	3	4	
34	<u>Flue gas temperature</u> Maximum of average values	116	114	118	118	°C
35	Time ¹⁾	09:57	08:10	07:09	07:36	min:s
36	Diagram in enclosure no.	1	2	3	4	
37	Remarks: - none -					

¹⁾ indication of times relative to beginning of test

²⁾ checked 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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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				dimension
	test-no.	#7793 warp direction side A	#7795 warp direction side B	#7796 weft direction side A	#7794 warp direction side A	
	colour of fabric	black				white
1	residual length	63	68	62	65	cm
2	max. smoke temperature	116	114	118	118	°C
3	integral of smoke density	1	1	1	1	%min
4	remarks: none					

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

After performing additional tests in the ignitability apparatus, this could be verified (encl. 5 & 6).

8. Special remarks

- This report is only valid for the material as described in paragraph 1. In combination with other materials or with additional coatings or primers etc., the burning behaviour may differ.
- This test report is not valid for the exposure to outdoor climate conditions, washing or cleaning with chemicals.
- This test report is not valid if the material is used as a building product in the sense of the State Building Regulations ("Landesbauordnungen", 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 used 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 denoted date on page 1. The test report becomes invalid in case the standards on which these tests are based are changed.

Fladungen, 06.06.2024

Clerk in charge:

(Dipl.-Ing. (FH) Jürgen Hammer)



Head of test laboratory:

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



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enclosure 1 test report
PZ-Hoch-240737

Fire shaft test #7793

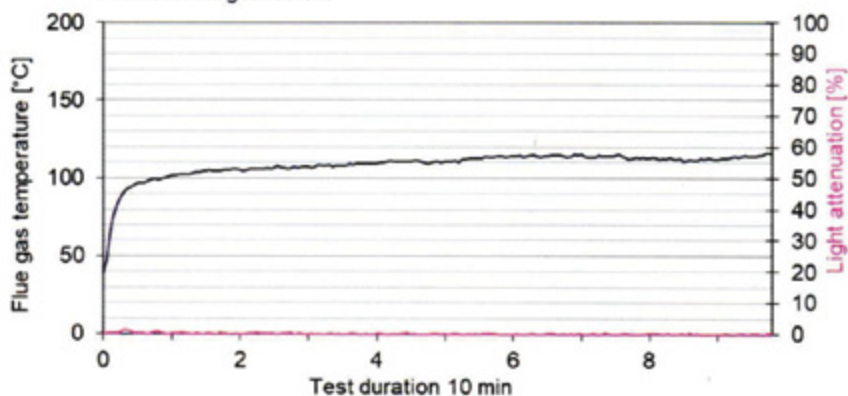


measurement

#7793, PN39102: "CS-Molton", schwarz, A + K

Max. flue temperature: 116°C, Smoke density integral: 1%min

Residual length: 63 cm



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enclosure 2 test report
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Fire shaft test #7795

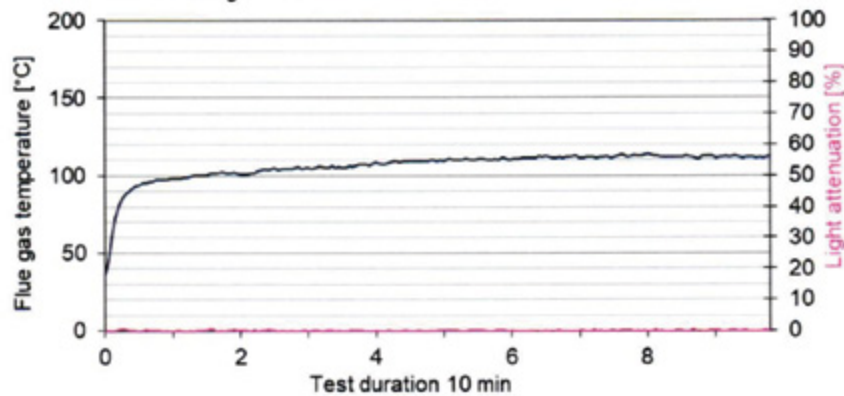


measurement

#7795, PN39102: "CS-Molton", schwarz, B + K

Max. flue temperature: 114°C, Smoke density integral: 1%min

Residual length: 68 cm



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enclosure 3 test report
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Fire shaft test #7796

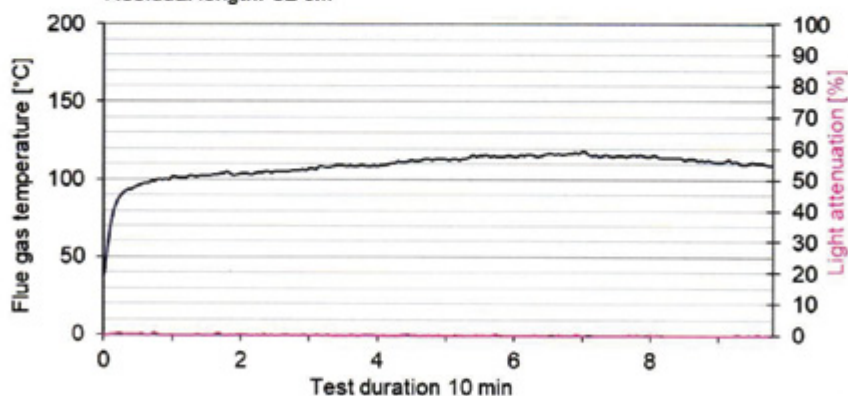


measurement

#7796, PN39102: "CS-Molton", schwarz, A + S

Max. flue temperature: 118°C, Smoke density integral: 1%min

Residual length: 62 cm



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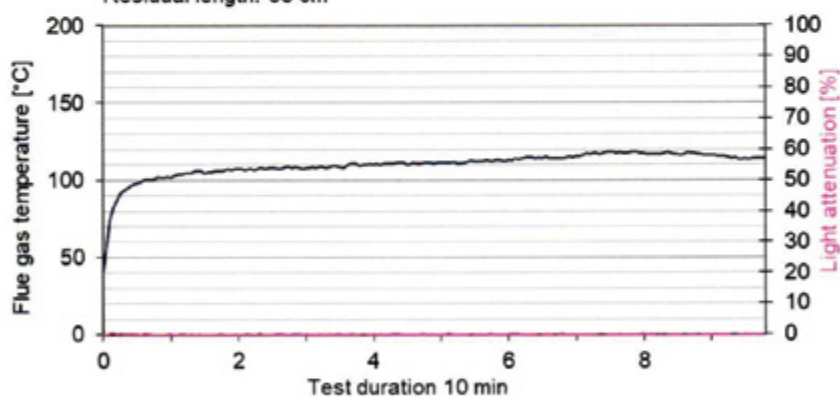
enclosure 4 test report
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Fire shaft test #7794



measurement

#7794, PN39103: "CS-Molton", weiß, A + K
Max. flue temperature: 118°C, Smoke density integral: 1%/min
Residual length: 65 cm



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enclosure 5 test report
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Test for normal flammability classifying B2 according to DIN 4102

1. Description of test material in condition as delivered cf. page 2
2. Preparation of samples
Samples for the ignitability apparatus were cut from the sample.
The samples were kept in a climate 23/50 until they reached constant weight.
3. Arrangement of samples freely suspended
Flaming side A and side B in warp and in weft direction
4. Date of test CW 19 in 2024
5. Results

PN 39102: side A in warp	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition ¹⁾	1	1	1	1	1	--	2	--	--	--	--	--	s
measurement mark reached ¹⁾²⁾	-/-	-/-	-/-	-/-	-/-	--	-/-	--	--	--	--	--	s
maximum flame height	11	11	8	7	8	--	6	--	--	--	--	--	cm
time of max. flame height	15	12	8	8	10	--	6	--	--	--	--	--	s
Self-cessation of flames ¹⁾	19	17	10	10	12	--	8	--	--	--	--	--	s
end of glowing	-/-	-/-	-/-	-/-	-/-	--	-/-	--	--	--	--	--	s
flames were extinguished after ¹⁾	-/-	-/-	-/-	-/-	-/-	--	-/-	--	--	--	--	--	s
smoke development (visually)	moderate						moderate						
dropping of burning material ¹⁾²⁾	-/-	-/-	-/-	-/-	-/-	--	-/-	--	--	--	--	--	s
Appearance after test: burned out till max. width 3 cm x height 12 cm													

PN 39102: additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
side/direction	BK	AS	BS	--	--	--	BK	AS	BS	--	--	--	
ignition ¹⁾	1	1	1	--	--	--	2	2	2	--	--	--	s
measurement mark reached ¹⁾²⁾	-/-	-/-	-/-	--	--	--	-/-	-/-	-/-	--	--	--	s
maximum flame height	7	9	10	--	--	--	8	6	7	--	--	--	cm
time of max. flame height	6	10	15	--	--	--	8	7	6	--	--	--	s
Self-cessation of flames ¹⁾	8	14	19	--	--	--	11	9	9	--	--	--	s
end of glowing	-/-	-/-	-/-	--	--	--	-/-	-/-	-/-	--	--	--	s
flames were extinguished after ¹⁾	-/-	-/-	-/-	--	--	--	-/-	-/-	-/-	--	--	--	s
smoke development (visually)	moderate						moderate						
dropping of burning material ¹⁾²⁾	-/-	-/-	-/-	--	--	--	-/-	-/-	-/-	--	--	--	s
Appearance after test: burned out till max. width 3 cm x height 12 cm													

¹⁾ time denoted relative to beginning of test
A side A B side B K warp S weft

²⁾ during 20 Sec -/- no occurrence -- no information

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enclosure 6 test report
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PN 39103: additional tests samples no.	edge-test						surface-test						Dim
	1	2	3	4	5	6	1	2	3	4	5	6	
side/direction	AK	BK	AS	BS	--	--	AK	BK	AS	BS	--	--	
ignition ¹⁾	1	1	1	1	--	--	2	2	2	2	--	--	s
measurement mark reached ¹⁾²⁾	-/-	-/-	-/-	-/-	--	--	-/-	-/-	-/-	-/-	--	--	s
maximum flame height	4	4	4	4	--	--	3	4	3	3	--	--	cm
time of max. flame height	3	3	4	3	--	--	3	8	3	3	--	--	s
Self-cessation of flames ¹⁾	4	4	7	4	--	--	4	12	4	4	--	--	s
end of glowing	-/-	-/-	-/-	-/-	--	--	-/-	-/-	-/-	-/-	--	--	s
flames were extinguished after ¹⁾	-/-	-/-	-/-	-/-	--	--	-/-	-/-	-/-	-/-	--	--	s
smoke development (visually)	moderate						little						
dropping of burning material ¹⁾²⁾	-/-	-/-	-/-	--	--	--	-/-	-/-	-/-	--	--	--	s
Appearance after test: burned out till max. width 2,5 cm x height 7 cm													

¹⁾ time denoted relative to beginning of test ²⁾ during 20 Sec -/- no occurrence -- no information
A side A B side B 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 dropping burning material.