

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-160596-5

for the proof of Fire behaviour according to DIN 4102, part 1
original test and aging test after 2-years and 5-years weathering

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

company	Eikon Ltd 38 Port Royal Avenue Lancaster LA1 5QP United Kingdom
description of samples	fabric consisting of polyester, coated with PVC / colour: white
name of the material	„IP 2603“
sampling	by the company itself and by Prüfinstitut Hoch on 24/01/2020.
content of request	Proof of flammability to classify building materials to class B1 “schwerentflammbar” according to DIN 4102, part 1
validity of test report	31.05.2026
result	The examined product meets also after 5-years weathering 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 7 pages and 10 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.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 23513: "IP 2603" colour: white
-fabric consisting of polyester, coated with PVC-
side B: a little bit more structured
characteristic values determined by the test laboratory:
area weight: about 662 g/m² thickness: about 0,55 mm

To prolong the test report, see also ÜZB-Hoch-200102:

PN 30748: "IP 2603" colour: white
-fabric consisting of polyester, coated with PVC- pieceNo. 3081493059
side B: a little bit more structured
characteristic values determined by the test laboratory:
area weight: about 653 g/m² thickness: about 0,52 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

#7911:	flaming side A in warp direction	
#7912:	flaming side B in warp direction	
#7913:	flaming side A in weft direction	
#1000:	flaming the unweathered side in warp direction	1 st aging test
#4527:	flaming the unweathered side in warp direction	2 nd aging test
#4528:	flaming the unweathered side in weft direction	2 nd aging test
#3290:	flaming side A in weft direction PN 30748	prolongation

4. Date of test CW 08 and CW 09 in 2016 and CW 10 in 2018 and CW 08 in 2020 and CW 20 in 2021

5.1 Results (part 1) The test has been examined according to DIN 4102 (Mai 1998)

line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#7911	#7912	#7913	#1000	
	flaming direction / side	warp / A	warp / B	weft / A	warp / unweath.	
	<u>original test / aging test</u>	original			1 st aging	
1	<u>Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1</u>	1	1	1	1	
2	<u>Maximum flame height above bottom edge of the specimen</u>	70	70	70	50	cm
3	<u>Time</u> ¹⁾	0:14	0:12	0:10	0:08	min:s
4	<u>Burn through / melting</u> <u>Time</u> ¹⁾	0:12	0:10	0:11	0:10	min:s
5	<u>Observations on the back side of the specimen</u> Flames / Glowing <u>Time</u> ¹⁾	---	---	---	---	min:s
6	Change of colour <u>Time</u> ¹⁾	./.	./.	./.	./.	min:s
7	<u>Falling of burning droplets</u> <u>Start</u> ¹⁾ <u>Extent</u>	X 0:35	./. ./.	./. ./.	./. ./.	min:s
8	sporadic falling of burning droplets ²⁾	X	---	---	---	
9	continuous falling of burning droplets ²⁾	---	---	---	---	min:s
10	<u>Falling of burning droplets</u> <u>Start</u> ¹⁾ <u>Extent</u>	./. ./.	./. ./.	./. ./.	./. ./.	min:s
11	sporadic falling of burning droplets ²⁾	---	---	---	---	
12	continuous falling of burning droplets ²⁾	---	---	---	---	
13	<u>After flame time at the bottom of the sieve (max.)</u>	0:11	./.	./.	---	min:s
14	<u>Impairment of the burner by dropping or falling material:</u> <u>Time</u> ¹⁾	./.	./.	./.	./.	min:s
15	<u>Premature end of test</u> Final occurrence of burning at the specimen ¹⁾	./.	./.	./.	./.	min:s
16	<u>Time of eventually end of test</u> ¹⁾	./.	./.	./.	./.	min:s
17	<u>After flame after end of test</u> <u>Time</u> 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.
	Test number	#7911	#7912	#7913	#1000	
	flaming direction / side	warp / A	warp / B	weft / A	warp / unweath.	
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	Back side of specimen ²⁾	./.	./.	./.	./.	
28	<u>Density of smoke</u> ≤ 400 % * min	69	26	73	17	% * min
29	> 400 % * min ⁴⁾	./.	./.	./.	./.	% * min
30	Diagram: encl. no.	1	2	3	4	
31	<u>Residual lengths:</u> individual value ³⁾					
	Specimen 1	54	61	58	64	cm
	Specimen 2	50	58	53	59	cm
	Specimen 3	47	56	51	64	cm
	Specimen 4	50	61	52	65	cm
32	<u>Average value, individual test</u> ³⁾	50	59	54	63	
33	<u>Photo of specimen in enclosure no.</u>	1	2	3	4	
34	<u>Flue gas temperature</u>	112	112	112	119	°C
35	Maximum of average value Time ¹⁾	09:33	09:51	09:48	09:54	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

5.2 Results (part 2) The test has been examined according to DIN 4102 (Mai 1998)

line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#4527	#4528	#3290	---	
	flaming direction / side	warp / unweath.	weft / unweath.	weft / A	---	
	<u>2nd aging test / prolongation</u>	<u>2nd aging</u>		<u>prolongation</u>	---	
1	<u>Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1</u>	1	1	1	---	
2	<u>Maximum flame height above bottom edge of the specimen</u>	60	60	70	---	cm
3	Time ¹⁾	0:10	0:09	0:12	---	min:s
4	<u>Burn through / melting</u> Time ¹⁾	0:13	0:12	0:13	---	min:s
5	<u>Observations on the back side of the 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 sieve (max.)</u>	./.	./.	./.	---	min:s
14	<u>Impairment of the 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⁾	./.	./.	./.	./.	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.
	Test number	#4527	#4528	#3290	---	
	flaming direction / side	warp / unweath.	weft / unweath.	weft / A	---	
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	Back side of specimen ²⁾	./.	./.	./.	./.	
28	<u>Density of smoke</u> ≤ 400 % * min	48	59	36	---	% * min
29	> 400 % * min ⁴⁾	./.	./.	./.	./.	% * min
30	Diagram: encl. no.	5	6	7	---	
31	<u>Residual lengths:</u> individual value ³⁾					
	Specimen 1	62	59	57	---	cm
	Specimen 2	61	54	60	---	cm
	Specimen 3	60	44	57	---	cm
	Specimen 4	56	56	60	---	cm
32	<u>Average value, individual test</u> ³⁾	60	53	59	---	
33	<u>Photo of specimen in enclosure no.</u>	5	6	7	---	
34	<u>Flue gas temperature</u>	117	115	115	---	°C
35	Maximum of average value Time ¹⁾	09:57	10:00	09:36	---	min:s
36	Diagram: encl. no.	5	6	7	---	
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

lineo.	measurement	Result with the tested specimen				dimension
	test-no.	#7911 warp / A	#7912 warp / B	#7913 weft / A	#1000 warp / unweath.	
	original test / 1st aging test	original		1st aging		
1	residual length	50	59	54	63	cm
2	max. smoke temperature	112	112	112	119	°C
3	density of smoke - integral	69	26	73	17	%min

lineo.	measurement	Result with the tested specimen				dimension
	test-no.	#4527 warp / unweath.	#4528 weft / unweath.	#3290 weft / A	---	
	2nd aging test / prolongation	2nd aging test		prolongation	---	
1	residual length	60	53	59	---	cm
2	max. smoke temperature	117	115	115	---	°C
3	density of smoke - integral	48	81	36	---	%min

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 8 until 10).

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 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

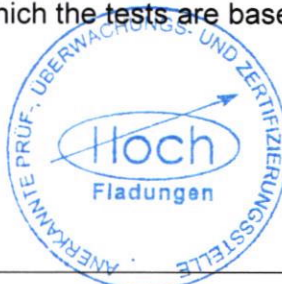
9. Validity

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, 18.08.2022

clerk in charge:

(Dipl.-Ing. (FH) Diana Günzel)



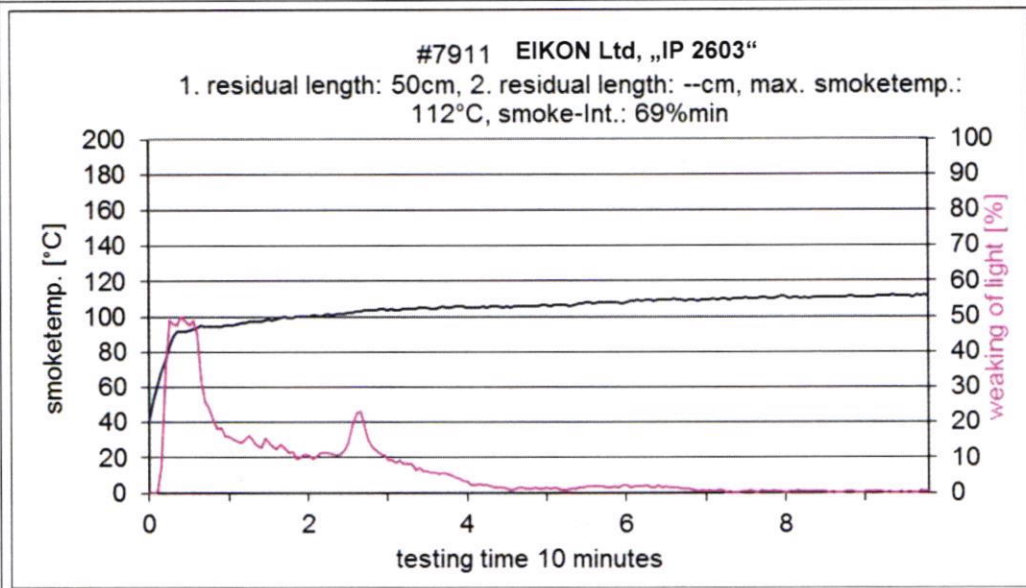
Deputy head of the test laboratory:

(Dipl.-Ing. (FH) Jürgen Hammer)

„Brandschacht“-test #7911



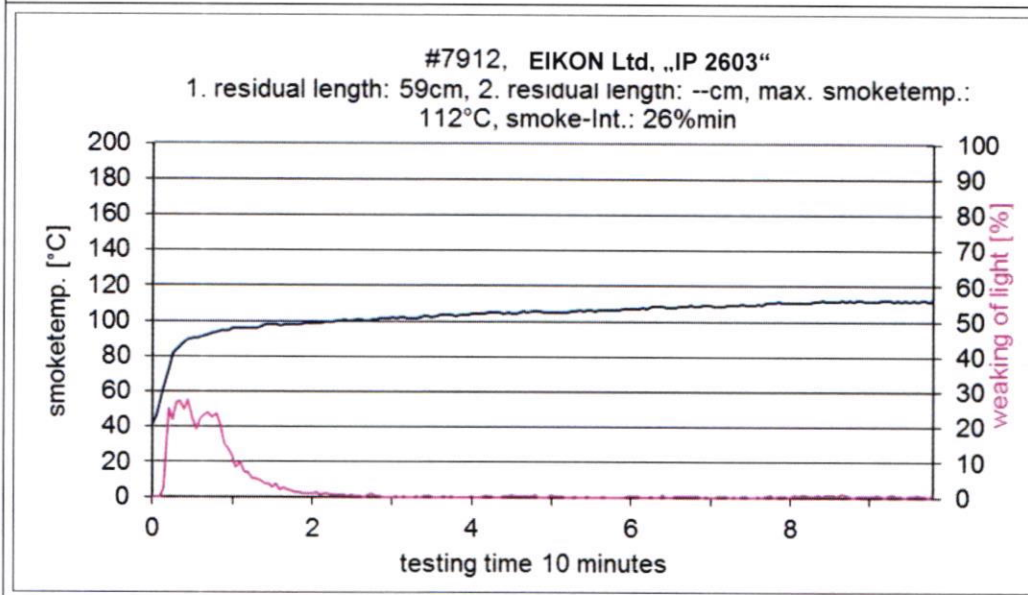
measurement



„Brandschacht“-test #7912



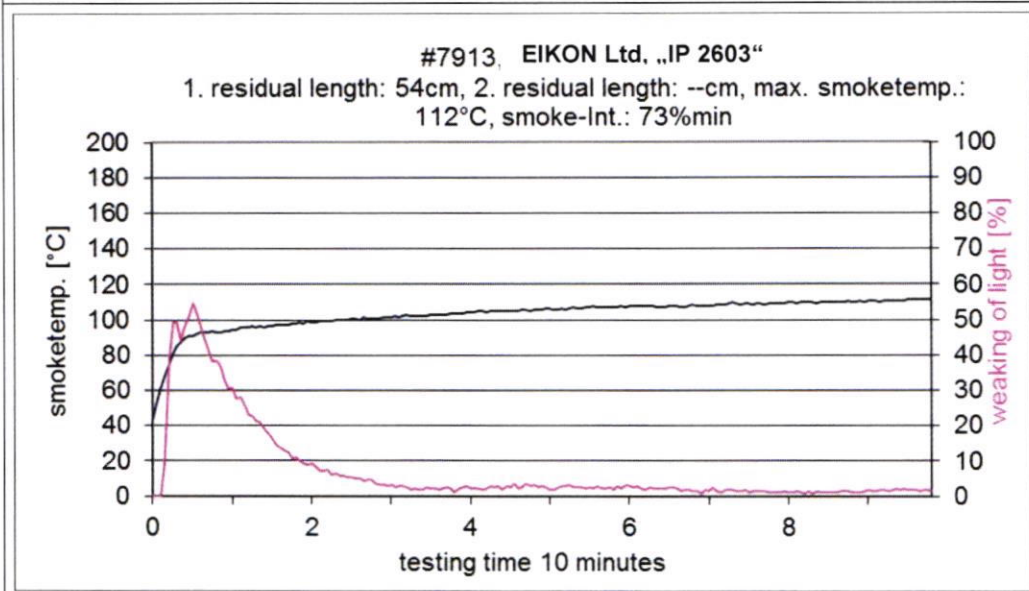
measurement



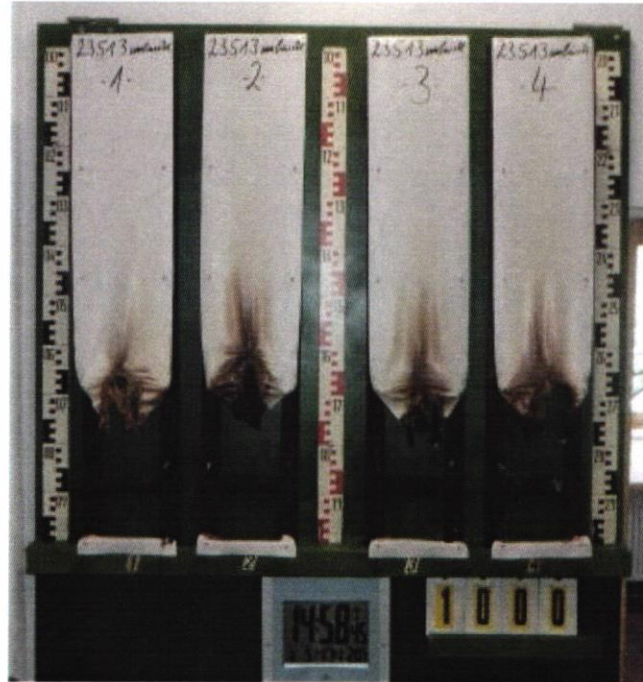
„Brandschacht“-test #7913



measurement



„Brandschacht“-test #1000

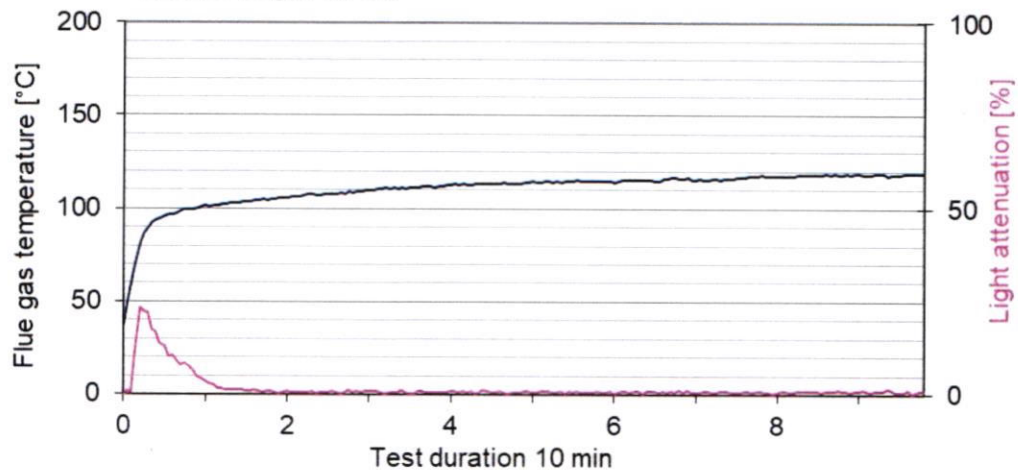


measurement

#1000, PN23513: EIKON Ltd. „IP 2603“, K

Max. flue temperature: 119°C, Smoke density integral: 17%min

Residual length: 63 cm

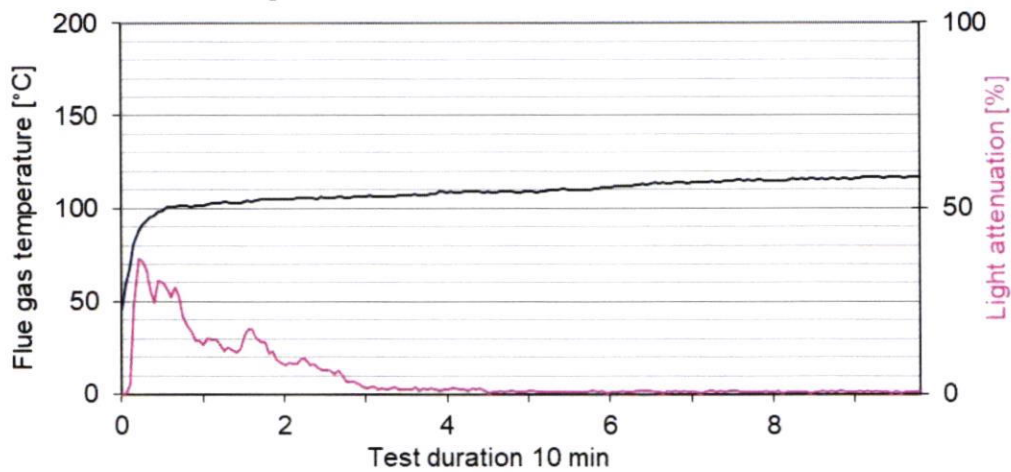


„Brandschacht“-test #4527

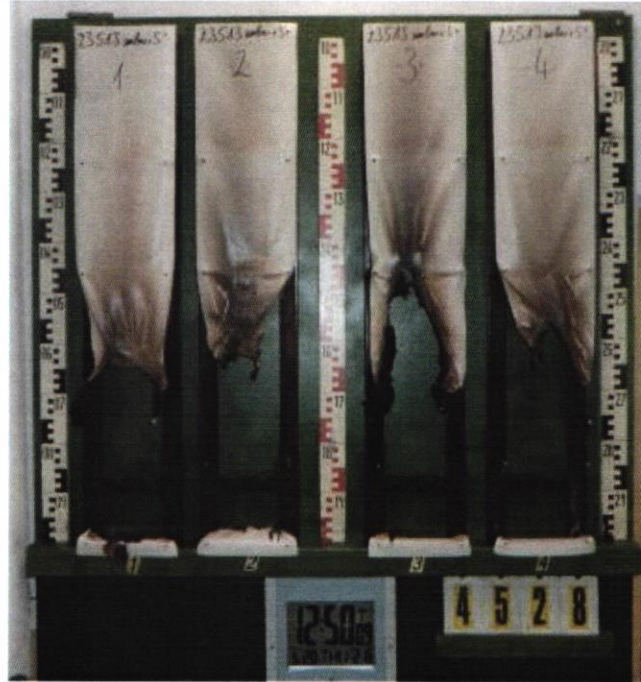


measurement

#4527, PN23513: EIKON Ltd. „IP 2603“, K
 Max. flue temperature: 117°C, Smoke density integral: 48%/min
 Residual length: 60 cm



„Brandschacht“-test #4528

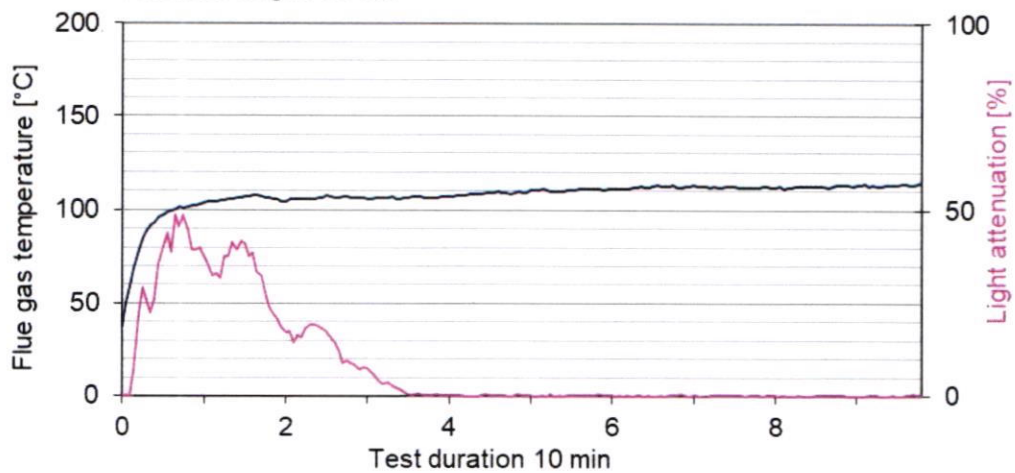


measurement

#4528, PN23513: EIKON Ltd, "IP 2603", S

Max. flue temperature: 115°C, Smoke density integral: 81%min

Residual length: 53 cm



„Brandschacht“-test #3290

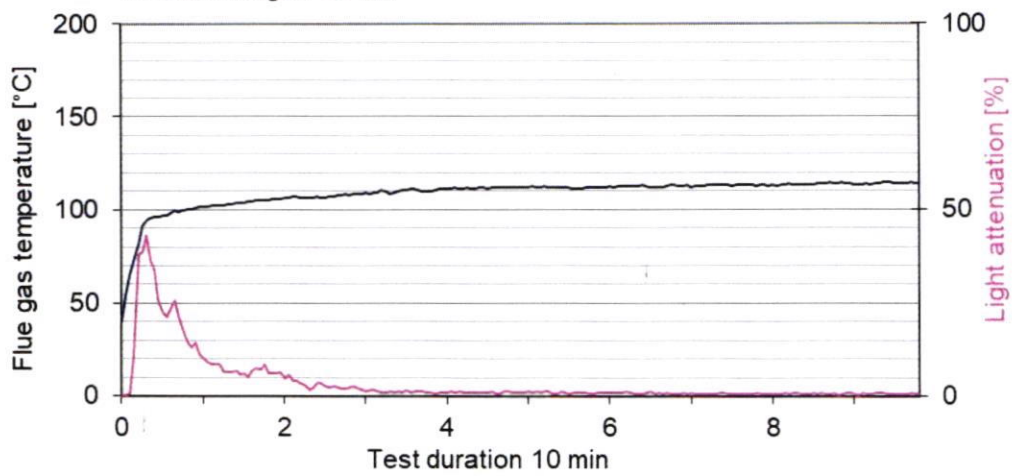


measurement

#3290, PN30748: EIKON Ltd. „IP 2603“, S

Max. flue temperature: 115°C, Smoke density integral: 36%min

Residual length: 59 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 20 in 2016 and CW 10 in 2018 and CW 06 in 2020 and CW 20 in 2021
5. Results

PN 23513: flaming side A in warp	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	--	--	--	--	--	3	3	3	3	3	--	s
reaching the mark of measurement ¹⁾²⁾	./.	--	--	--	--	--	./.	./.	./.	./.	./.	--	S
max. flame height	11	--	--	--	--	--	11	11	11	11	11	--	cm
time	11	--	--	--	--	--	13	14	13	11	12	--	
self cessation of the flames end of afterflame ¹⁾	15	--	--	--	--	--	15	15	15	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 11 cm x width 1,5 cm													

PN 23513: 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	
ignition ¹⁾	1	1	1	--	--	--	3	3	3	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	10	10	8	--	--	--	8	7	11	--	--	--	cm
time	9	11	12	--	--	--	14	14	12	--	--	--	
self cessation of the flames end of afterflame ¹⁾	20	15	15	--	--	--	15	15	16	--	--	--	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 11 cm x width 1,5 cm													

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

PN 23513: 1 st aging test flaming the weathered side in warp	surface-test						edge-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⁾	2	--	--	--	--	--	1	1	1	1	1	--	s
reaching the mark of measurement ¹⁾²⁾	./.	--	--	--	--	--	./.	./.	./.	./.	./.	--	S
max. flame height	6	--	--	--	--	--	12	13	12	13	12	--	cm
time	15	--	--	--	--	--	15	15	15	15	15	--	
self cessation of the flames end of afterflame ¹⁾	16	--	--	--	--	--	15	15	15	17	16	--	s
end of glowing ¹⁾	17	--	--	--	--	--	17	17	17	19	16	--	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 11 cm x width 4cm													

PN 23513 1 st aging test 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	
ignition ¹⁾	1	1	1	--	--	--	2	2	2	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	12	12	11	--	--	--	10	7	6	--	--	--	cm
time	15	15	15	--	--	--	15	15	15	--	--	--	
self cessation of the flames end of afterflame ¹⁾	23	15	15	--	--	--	17	18	15	--	--	--	s
end of glowing ¹⁾	./.	17	17	--	--	--	19	./.	./.	--	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
smoke development (visual)	heavy						very heavy						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 11 cm x width 4 cm													

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

PN 23513: 2 nd aging test flaming the weathered side in weft	surface-test						edge-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition ¹⁾	5	--	--	--	--	--	1	1	1	1	1	--	s
reaching the mark of measurement ¹⁾²⁾	./.	--	--	--	--	--	./.	./.	./.	./.	./.	--	S
max. flame height	8	--	--	--	--	--	11	11	10	10	11	--	cm
time	12	--	--	--	--	--	14	13	12	14	13	--	
self cessation of the flames end of afterflame ¹⁾	16	--	--	--	--	--	15	21	16	16	21	--	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 7,6 cm x width 2,1cm													

PN 23513 2 nd aging test additional tests	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition ¹⁾	1	1	1	--	--	--	5	5	5	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
max. flame height	10	9	10	--	--	--	5	7	5	--	--	--	cm
time	13	14	14	--	--	--	12	13	12	--	--	--	
self cessation of the flames end of afterflame ¹⁾	15	17	18	--	--	--	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 7,6 cm x width 2,1 cm													

PN 30748 prolongation	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	--	--	3	3	3	3	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
max. flame height	9	9	9	9	--	--	7	7	7	7	--	--	cm
time	15	12	15	15	--	--	15	15	15	15	--	--	
self cessation of the flames end of afterflame ¹⁾	15	16	16	16	--	--	15	15	16	16	--	--	s
end of glowing ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
flames were extinguished after ¹⁾	./.	./.	./.	./.	--	--	./.	./.	./.	./.	--	--	s
smoke development (visual)	moderate						moderate						
dropping of burning material during 20 s ¹⁾	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 8 cm x width 3 cm													

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 test for normal flammability shows no burning dripping material