Prüfinstitut Hoch
Lerchenweg 1
D-97650 Fladungen
Tel.: int – 49 – 9778-7480-200
hoch.fladungen@t-online.de www.reaction-to-fire.de

Hoch Fladungen

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-180821

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	**ASLAN, Schwarz GmbH & Co. KG** Oberauel 2 D-51491 Overath
description of samples	aluminized and varnished PET - selfadhesive foil
name of the material	**„MetalEffect ASLAN CA 23" / Art.-Nr. 13102 K**
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	30.06.2023
result	**The examined product meets** • **glued on massive mineral substrates with a density ≥ 1500 kg/m³ and a thickness ≥ 6 mm** • **glued massive mineral substrates with a density ≥ 650 kg/m³ and a thickness ≥ 11 mm** • **glued on non-combustible building boards** **the requirements of class B1 for "schwerentflammbare" (hardly flammable) building materials according to DIN 4102, part 1 (May 1998).**

This test report includes 5 pages and 5 enclosures.

Remark: If the above mentioned building material is not used as product according to MBO § 2, Abs. 9, Ziffer1, 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.

member of egolf
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.

DAkkS Deutsche Akkreditierungsstelle D-PL-11005-01-00

1. Description of test material in condition as delivered

PN 27598 and PN 27816 (additional delivery):

"MetalEffect ASLAN CA 23 " / Art.-Nr. 13102 K

According to the manufacturer the tested material is an aluminized and varnished PET - selfadhesive foil.

characteristic values determined by the test laboratory:

area weight: about 94 g/m² thickness: about 0,11 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.

According to DIN 4102-16, part 4.4.c the self-adhesive foil was glued on following gypsum plasterboards:

Gypsum boards according to DIN EN 520: thickness (12,5 ± 0,5) mm, density (700 ± 100) kg/m^3, class A2-s1,d0 according to EN 13501-1.

3. Arrangement of samples -glued on gypsum boards-

#1471	flaming in machine direction
#1472	flaming in transverse direction
#1477	flaming in transverse direction
#1478	flaming in transverse direction

4. Date of test CW 30 in 2018

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

line no.	Measurement	Result with the tested specimen					Dim.
	Test number	#1471	#1472	#1477	#1478	---	
	flamed direction	machine	transv.	transv.	transv.	---	
1	Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1	7	7	7	7	---	
2	Maximum flame height above bottom edge of the specimen	70	70	60	60	---	cm
3	Time [1]	1:40	1:19	0:38	0:24	---	min:s
4	Burn through of foil / melting Time [1]	./.	./.	./.	./.	---	min:s
	Observations on the back side of the specimen						
	Flames / Glowing	---	---	---	---	---	
5	Time [1]	./.	./.	./.	./.	---	min:s
	Change of color	---	---	---	---	---	
6	Time [1]	./.	./.	./.	./.	---	min:s
	Falling of burning droplets	./.	./.	./.	./.		
7	Start [1]	./.	./.	./.	./.	---	min:s
	Extent					---	
8	sporatic falling of burning droplets [2]	./.	./.	./.	./.	---	
9	continuous falling of burning droplets [2]	./.	./.	./.	./.	---	min:s
	Falling of burning droplets	./.	./.	./.	./.		
10	Start [1]					---	min:s
	Extent	./.	./.	./.	./.	---	
11	sporatic falling of burning droplets [2]					---	
12	continuous falling of burning droplets [2]	./.	./.	./.	./.	---	
13	Afterflame time at the bottom of the sieve (max.)	./.	./.	./.	./.	---	min:s
14	Impairment of the burner by dropping or falling material: Time [1]	./.	./.	./.	./.	---	min:s
15	Premature end of test Final occurance of burning at the specimen [1]	./.	./.	./.	./.	---	min:s
16	Time of eventually end of test [1]	./.	./.	./.	./.	---	min:s
17	Afterflame after end of test Time [1]	./.	./.	./.	./.	---	min:s
18	Number of specimen	./.	./.	./.	./.	---	
19	Front side of specimen [2]	./.	./.	./.	./.	---	
20	Back side of specimen [2]	./.	./.	./.	./.	---	
21	flame length	./.	./.	./.	./.	---	cm
	Afterglow after end of test	./.	./.	./.	./.	---	
22	Time [1]	./.	./.	./.	./.	---	min:s
23	Number of specimen	./.	./.	./.	./.	---	
	Place of appearance	./.	./.	./.	./.	---	
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]	./.	./.	./.	./.	---	

line no.	Measurement	Result with the tested specimen					Dim.
	Test number	#1471	#1472	#1477	#1478	---	
	flamed direction	machine	transv.	transv.	transv.	---	
	Density of smoke						
28	≤ 400 % * min	3	4	3	4	---	% * min
29	> 400 % * min[4]	./.	./.	./.	./.	---	% * min
30	Diagram: encl. no.	1	2	3	4	---	
	Residual lengths: individual value[3]						
	Specimen 1	37	36	30	36	---	cm
31	Specimen 2	35	34	34	34	---	cm
	Specimen 3	35	34	29	35	---	cm
	Specimen 4	36	35	30	31	---	cm
32	Average value, individual test [3]	**36**	**35**	**31**	**34**	**---**	
33	Photo of specimen in enclosure no.	1	2	3	4	---	
34	Flue gas temperature	117	117	115	116	---	°C
35	Maximum of average value Time [1]	10:00	10:00	09:51	09:21	---	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

lineno	measurement / test-no.	Result with the tested specimen					dimension
		#1471	#1472	#1477	#1478	---	
	flamed direction / flamed side	machine	transv.	transv.	transv.	---	
1	residual length	**36**	**35**	**31**	**34**	---	cm
2	max. smoke temperature	**117**	**117**	**115**	**116**	---	°C
3	density of smoke - integral	**3**	**4**	**3**	**4**	---	%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 5).

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, im 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, 26.07.2018

clerk in charge:

(Dipl.-Ing.(FH) Jürgen Hammer)

ANERKANNTE PRÜF-, ÜBERWACHUNGS- UND ZERTIFIZIERUNGSSTELLE Hoch Fladungen

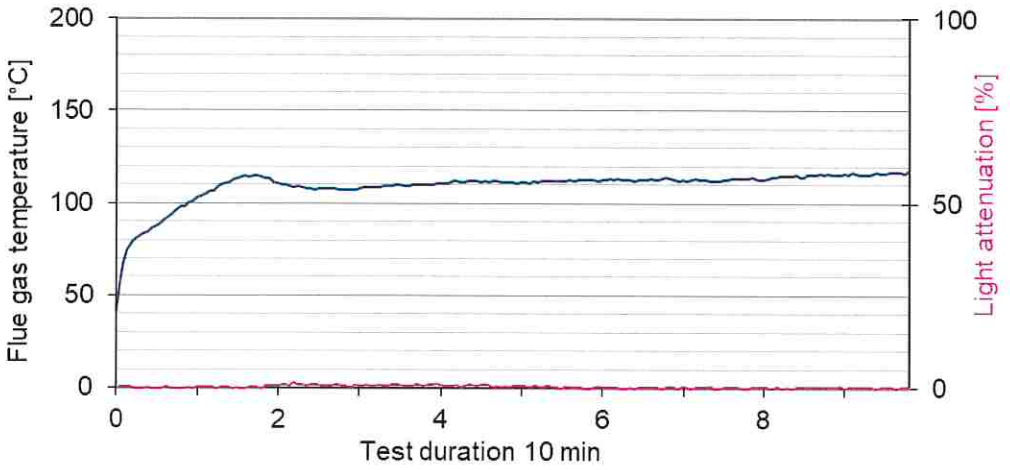
Head of the test laboratory:

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

„Brandschacht“-test #1471

measurement

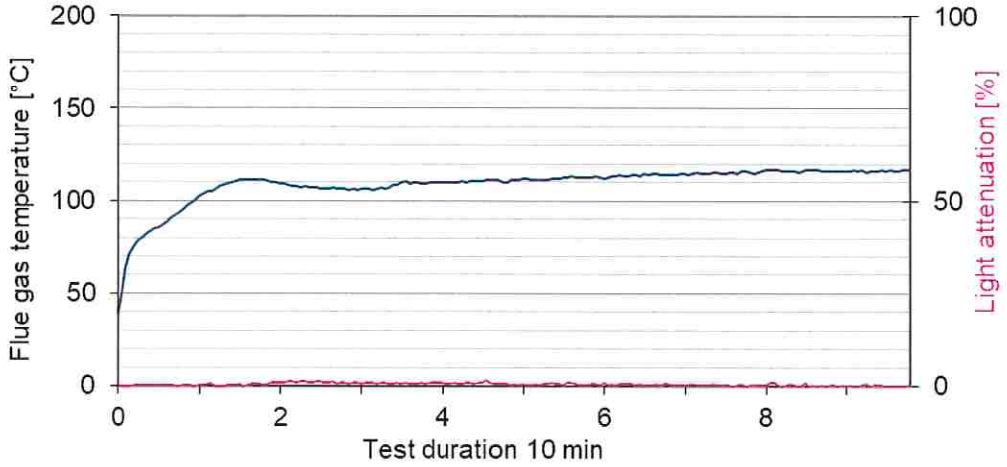
#1471, PN27598: ASLAN, "MetalEffect ASLAN CA 23", L
Max. flue temperature: 117°C, Smoke density integral: 3%min
Residual length: 36 cm



„Brandschacht“-test #1472

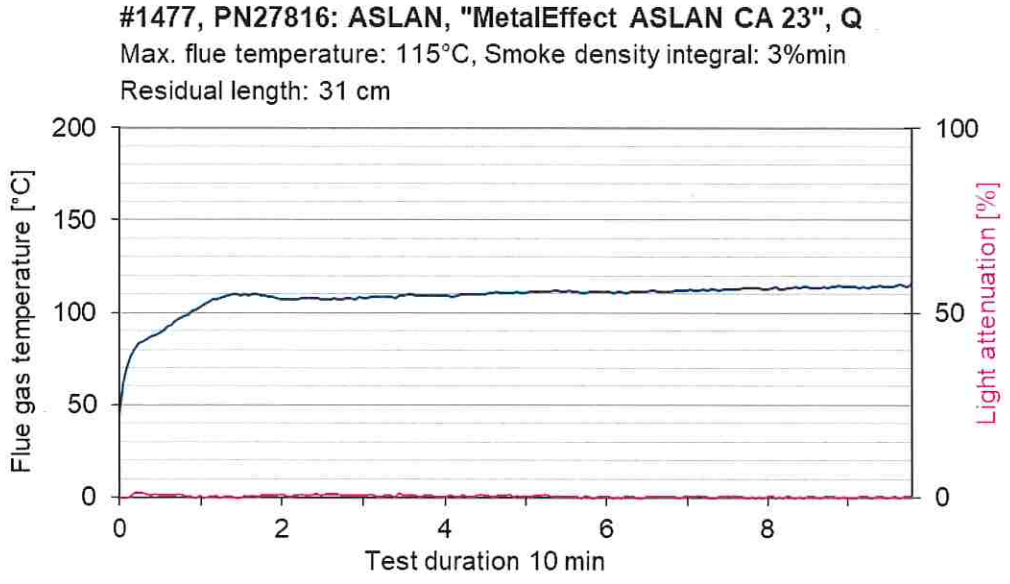
measurement

#1472, PN27598: ASLAN, "MetalEffect ASLAN CA 23", Q
Max. flue temperature: 117°C, Smoke density integral: 4%min
Residual length: 35 cm



„Brandschacht"-test #1477

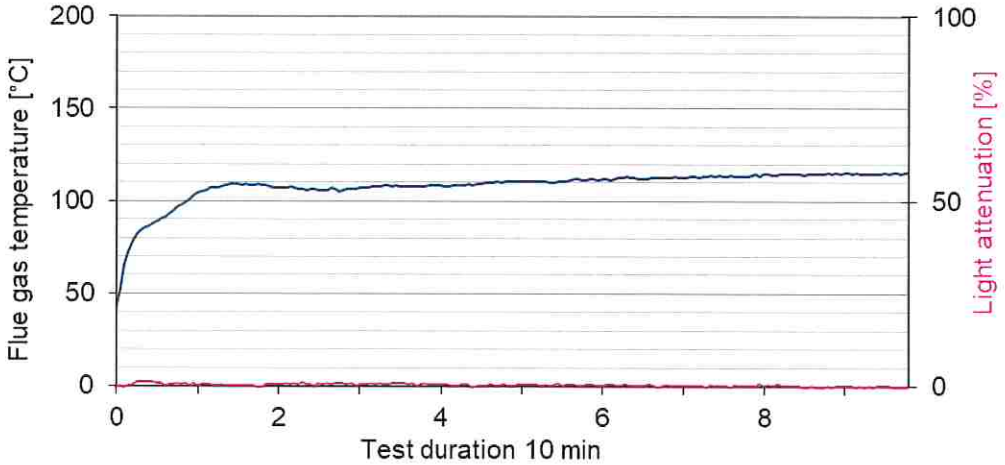
measurement



„Brandschacht“-test #1478

measurement

#1478, PN27816: ASLAN, "MetalEffect ASLAN CA 23", Q
Max. flue temperature: 116°C, Smoke density integral: 4%min
Residual length: 34 cm



Hoch
Fladungen
Prüfinstitut Hoch
Lerchenweg 1
D-97650 Fladungen

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

   glued on gypsum plasterboards / flaming in machine direction and in transverse direction
4. Date of test CW 28 2018
5. Results

PN 27598: flaming in transverse direction	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	2	--	--	--	--	s
reaching the mark of measurement[1)2)]	./.	./.	./.	./.	./.	--	./.	./.	--	--	--	--	s
max. flame height	**3**	**3**	**3**	**3**	**3**	--	**3**	**3**	--	--	--	--	cm
time	3	3	3	3	3	--	15	15	--	--	--	--	
self cessation of the flames end of afterflame[1)]	15	15	15	15	15	--	15	15	--	--	--	--	s
end of glowing[1)]	22	20	20	21	20	--	./.	./.	--	--	--	--	s
flames were extinguished after[1)]	./.	./.	./.	./.	./.	--	./.	./.	--	--	--	--	
smoke development (visual)	little						little						./.
dropping of burning material during 20 s[1)]	./.	./.	./.	./.	./.	--	./.	./.	--	--	--	--	s
Appearance after test: burned out till max. height 4 cm x width 2 cm													

PN 27598: flaming in machine direction	edge-test						surface-test						Dim
samples no.	1	2	3	4	5	6	1	2	3	4	5	6	
ignition[1)]	1	--	--	--	--	--	2	--	--	--	--	--	s
reaching the mark of measurement[1)2)]	-/-	--	--	--	--	--	-/-	--	--	--	--	--	s
max. flame height	3	--	--	--	--	--	3	--	--	--	--	--	cm
time	6	--	--	--	--	--	15	--	--	--	--	--	
self cessation of the flames end of afterflame[1)]	15	--	--	--	--	--	15	--	--	--	--	--	s
end of glowing[1)]	16	--	--	--	--	--	-/-	--	--	--	--	--	s
flames were extinguished after[1)]	-/-	--	--	--	--	--	-/-	--	--	--	--	--	s
smoke development (visual)	little						little						
dropping of burning material during 20 s[1)]	-/-	--	--	--	--	--	-/-	--	--	--	--	--	s
Appearance after test: burned out till max. height 4cm x width 2cm													

[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.