

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-180128

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	black self-adhesive plastic foil
name of the material	„FerroSoft ASLAN FF 410“
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	31.01.2023
result	The examined product meets <ul style="list-style-type: none">• glued on massive mineral substrates with a density $\geq 1500 \text{ kg/m}^3$ and a thickness $\geq 6 \text{ mm}$• glued massive mineral substrates with a density $\geq 650 \text{ kg/m}^3$ and a thickness $\geq 11 \text{ mm}$• 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, 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.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 26627: "FerroSoft ASLAN FF 410"

According to the manufacturer the tested material is a black plastic foil with aqueous acrylate adhesive.

characteristic values determined by the test laboratory:

area weight: about 285 g/m² thickness: about 0,50 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/m³, class A2-s1,d0 according to EN 13501-1.

3. Arrangement of samples -glued on gypsum boards-

#9827	flaming in transverse direction
#9847	flaming in machine direction
#9908	flaming in machine direction
#9909	flaming in machine direction

4. Date of test CW 03, CW 04 and CW 06 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	#9827	#9847	#9908	#9909	---	
	flamed direction	transv.	machine	machine	machine	---	
1	<u>Number of specimen arrangement acc. to. DIN 4102/T15, schedule 1</u>	7	7	7	7	---	
2	<u>Maximum flame height above bottom edge of the specimen</u>	80	70	70	70	---	cm
3	Time ¹⁾	1:05	0:51	0:41	0:43	---	min:s
4	<u>Burn through / melting</u> Time ¹⁾	./.	./.	./.	./.	---	min:s
5	<u>Observations on the back side of the specimen</u> <u>Flames / Glowing</u>	---	---	---	---	---	min:s
	Time ¹⁾	./.	./.	./.	./.	---	
6	<u>Change of color</u>	---	---	---	---	---	min:s
	Time 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⁾	./.	./.	./.	./.	---	
10	<u>Falling of burning droplets</u> <u>Start</u> ¹⁾	./.	./.	./.	./.	---	min:s
	<u>Extent</u>	./.	./.	./.	./.	---	
11	sporadic falling of burning droplets ²⁾	./.	./.	./.	./.	---	min:s
12	continuous falling of burning droplets ²⁾	./.	./.	./.	./.	---	
13	<u>Afterflame time at the bottom of the sieve (max.)</u>	./.	./.	./.	./.	---	min:s
14	<u>Impairment of the burner by dropping or falling material:</u> <u>Time</u> ¹⁾	./.	./.	./.	./.	---	min:s
	<u>Premature end of test</u>	./.	./.	./.	./.	---	
15	Final occurrence of burning at the specimen ¹⁾	./.	./.	./.	./.	---	min:s
16	Time of eventually end of test ¹⁾	./.	./.	./.	./.	---	min:s
17	<u>Afterflame after end of test</u> <u>Time</u> ¹⁾	./.	./.	./.	./.	---	min:s
	Number of specimen	./.	./.	./.	./.	---	
19	Front side of specimen ²⁾	./.	./.	./.	./.	---	cm
20	Back side of specimen ²⁾	./.	./.	./.	./.	---	
21	flame length	./.	./.	./.	./.	---	
22	<u>Afterglow after end of test</u> <u>Time</u> ¹⁾	./.	./.	./.	./.	---	min:s
	Number of specimen	./.	./.	./.	./.	---	
24	<u>Place of appearance</u> Lower half of the specimen ²⁾	./.	./.	./.	./.	---	min:s
	Upper half of the specimen ²⁾	./.	./.	./.	./.	---	
26	Front side of specimen ²⁾	./.	./.	./.	./.	---	min:s
27	Back side of specimen ²⁾	./.	./.	./.	./.	---	

line no.	Measurement	Result with the tested specimen					Dim.	
		#9827	#9847	#9908	#9909	---		
	Test number	#9827	#9847	#9908	#9909	---		
	flamed direction	transv.	machine	machine	machine	---		
28	Density of smoke ≤ 400 % * min	10	5	6	9	---	% * min	
29	> 400 % * min ⁴⁾	./.	./.	./.	./.	---	% * min	
30	Diagram: incl. no.	1	2	3	4	---		
31	Residual lengths: individual value ³⁾							
	Specimen 1	26	23	20	25	---	cm	
	Specimen 2	25	20	21	24	---	cm	
	Specimen 3	24	21	24	25	---	cm	
	Specimen 4	25	20	23	28	---	cm	
32	Average value, individual test ³⁾	25	21	22	26	---		
33	Photo of specimen in enclosure no.	1	2	3	4	---		
34	Flue gas temperature	108	112	113	114	---	°C	
35	Maximum of average value Time ¹⁾	09:45	03:44	10:00	09:45	---	min:s	
36	Diagram: incl. 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

line no	measurement	Result with the tested specimen					dimension
	test-no.	#9827	#9847	#9908	#9909	---	
	flamed direction flamed side	transv.	machine	machine	machine	---	
1	residual length	25	21	22	26	---	cm
2	max. smoke temperature	108	112	113	114	---	°C
3	density of smoke - integral	10	5	6	9	---	%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, 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, 02.05.2018

clerk in charge:



(Dipl.-Ing. (FH) Jürgen Hammer)



Head of the test laboratory:



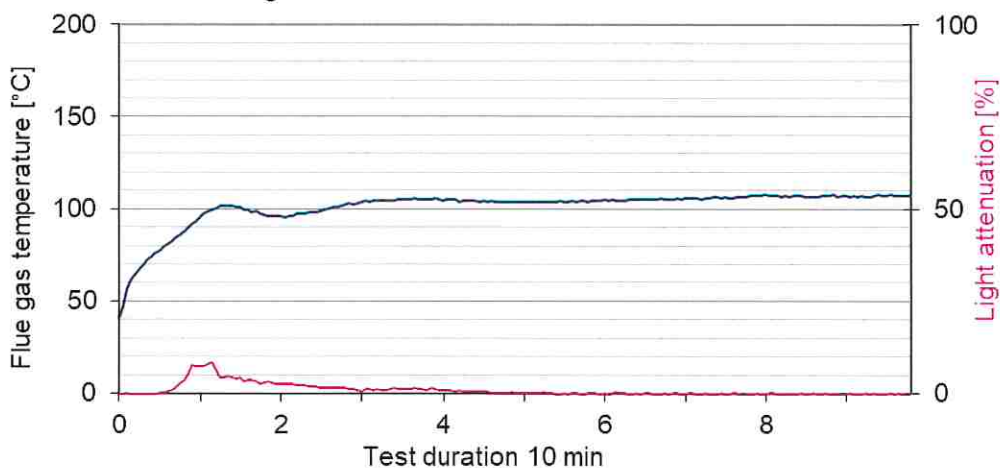
(Dipl.-Ing. (FH) Andreas Hoch)

„Brandschacht“-test #9827



measurement

#9827, PN26627: ASLAN, "FerroSoft ASLAN FF 410", quer
Max. flue temperature: 108°C, Smoke density integral: 10%min
Residual length: 25 cm

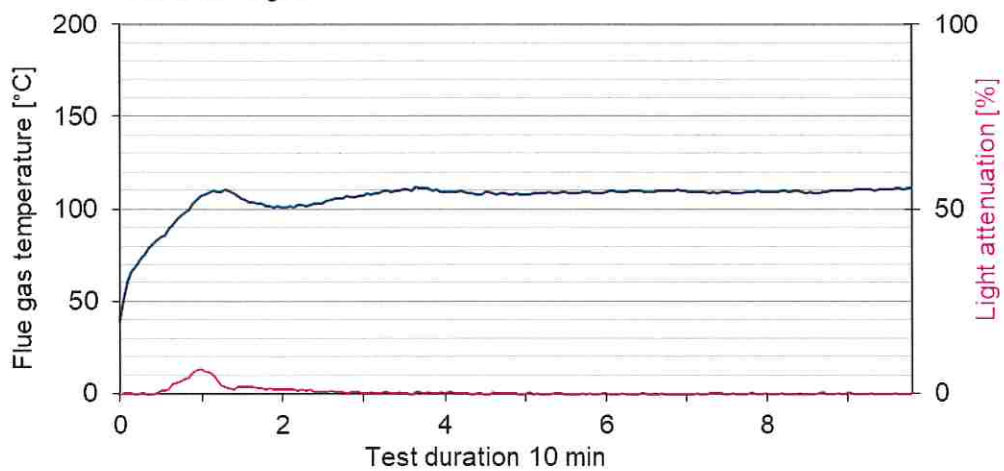


„Brandschacht“-test #9847



measurement

#9847, PN26627: ASLAN, "FerroSoft ASLAN FF 410", längs
Max. flue temperature: 112°C, Smoke density integral: 5%min
Residual length: 21 cm

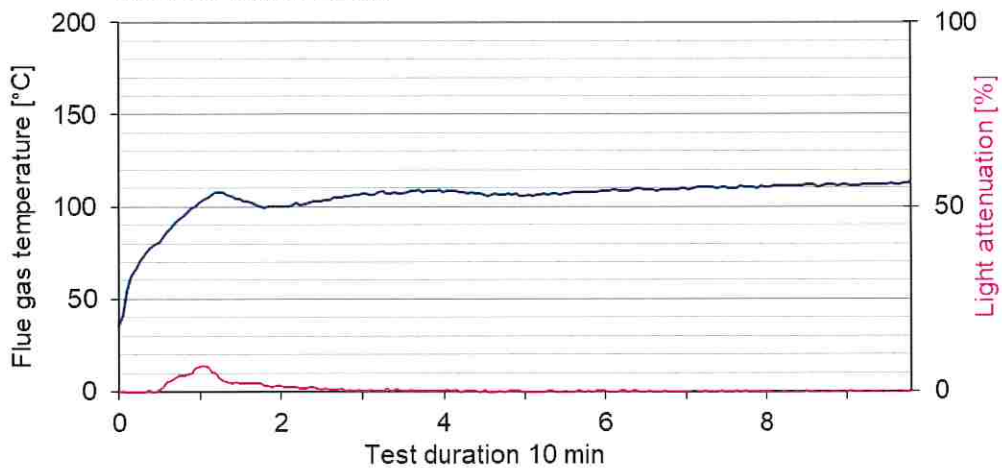


„Brandschacht“-test #9908



measurement

#9908, PN26627: ASLAN, "FerroSoft ASLAN FF 410", längs
Max. flue temperature: 113°C, Smoke density integral: 6%/min
Residual length: 22 cm

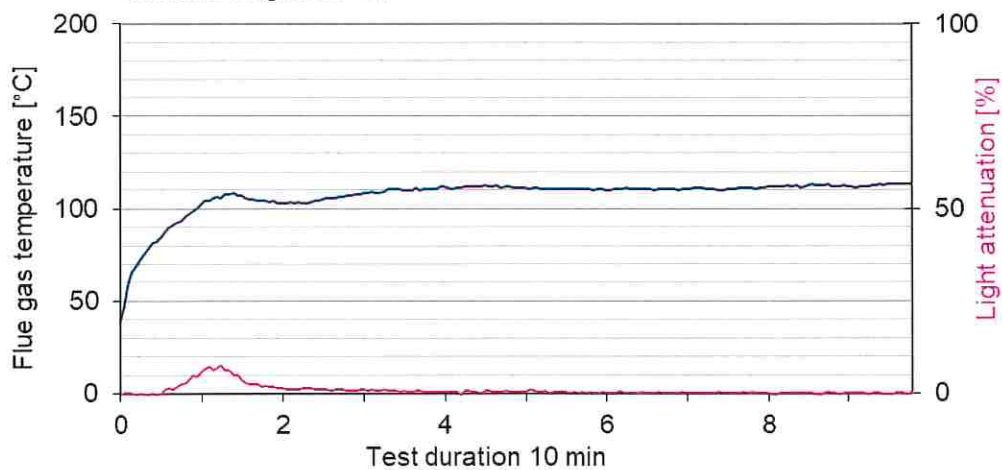


„Brandschacht“-test #9909



measurement

#9909, PN26627: ASLAN, "FerroSoft ASLAN FF 410", längs
Max. flue temperature: 114°C, Smoke density integral: 9%min
Residual length: 26 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

glued on gypsum plasterboards / flaming in machine direction and in transverse direction

4. Date of test CW 03 2018

5. Results

PN 26627: flaming in machine direction	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	1	1	--	4	--	--	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
max. flame height	2	2	2	2	2	--	1	--	--	--	--	--	cm
time	15	15	15	15	15	--	15	--	--	--	--	--	
self cessation of the flames end of afterflame ¹⁾	15	15	15	15	15	--	15	--	--	--	--	--	s
end of glowing ¹⁾	15	16	16	16	16	--	./.	--	--	--	--	--	s
flames were extinguished after ¹⁾	-/-	-/-	-/-	-/-	-/-	--	-/-	--	--	--	--	--	
smoke development (visual)	moderate						little						./.
dropping of burning material during 20 s ¹⁾	-/-	-/-	-/-	-/-	-/-	--	-/-	--	--	--	--	--	s
Appearance after test: burned out till max. height 3 cm x width 2 cm													

PN 26627: flaming in transverse direction	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	--	--	--	--	--	4	--	--	--	--	--	s
reaching the mark of measurement ¹⁾²⁾	-/-	--	--	--	--	--	-/-	--	--	--	--	--	s
max. flame height	2	--	--	--	--	--	1	--	--	--	--	--	cm
time	15	--	--	--	--	--	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)	moderate						little						
dropping of burning material during 20 s ¹⁾	-/-	--	--	--	--	--	-/-	--	--	--	--	--	s
Appearance after test: burned out till max. height 3cm 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.