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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-180767

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	**GF Genereal Formulations GmbH** Hansestraße 105 D-51149 Köln
description of samples	white polymer self-adhesive foil consisting of PVC in a nominal thickness of 90µ
name of the material	**„Concept E285“**
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 with an area weight of 188 g/m² meets affixed on metallic surfaces with a density of ≥ 5.890 kg/m³, a melting point of ≥ 1000 °C and a thickness of ≥ 0,6 mm the requirements of class B1 for “schwerentflammbare” (hardly flammable) building materials according to DIN 4102, part 1 (May 1998).**

This test report includes 4 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This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.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 27514: „Concept E285“

- white polymer self-adhesive foil consisting of PVC - nominal thickness 90µ

characteristic values determined by the test laboratory:

whole thickness including protection film: about 0,35 mm
whole area weight including protection film: about 337 g/m²
thickness of self-adhesive foil: about 0,16 mm
area weight of self-adhesive foil: about 188 g/m²

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 the dimensions 1000 mm height and 190 mm width where cut out from the material for fire testing. The self-adhesive foil was affix on steel panel with a thickness of 0,88 mm. The samples were kept in climate chamber 23/50 until they reached constant weight.

3. Arrangement of samples

#1403: flaming in machine direction
#1404: flaming in transverse direction
#1412: flaming in machine direction
#1413: flaming in machine direction

4. Date of test

CW 28 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	#1403	#1404	#1412	#1413	
	flaming direction	machine	transverse	machine	machine	
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	80	70	70	70	cm
3	Time [1]	1:17	1:06	0:35	0:38	min:s
4	Burn through / melting Time [1]	0:40	0:38	0:42	0:47	min:s
5	Observations on the back side of the specimen Flames / Glowing	./.	./.	./.	./.	
	Time [1]	./.	./.	./.	./.	min:s
6	Change of colour Time [1]	./.	./.	./.	./.	min:s
7	Falling of burning droplets Start [1]	./.	./.	./.	./.	min:s
8	Extent sporadic falling of burning droplets [2]	./.	./.	./.	./.	
9	continuous falling of burning droplets [2]	./.	./.	./.	./.	min:s

line no.	Measurement	Result with the tested specimen				Dim.
	Test number	#1403	#1404	#1412	#1413	
	flaming direction	machine	transverse	machine	machine	
	Falling of burning droplets	./.	./.	./.	./.	
10	Start [1]					min:s
	Extent	./.	./.	./.	./.	
11	sporadic falling of burning droplets [2]					
12	continuous falling of burning droplets [2]	./.	./.	./.	./.	
13	After flame 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 occurrence of burning at the specimen [1]	./.	./.	./.	./.	min:s
16	Time of eventually end of test [1]	./.	./.	./.	./.	min:s
17	After flame 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]	./.	./.	./.	./.	
	Density of smoke					
28	≤ 400 % * min	12	11	14	12	% * min
29	> 400 % * min [4]	./.	./.	./.	./.	% * min
30	Diagram: encl. no.	1	2	3	4	
	Residual lengths: individual value [3]					
	Specimen 1	39	42	41	42	cm
31	Specimen 2	40	43	41	43	cm
	Specimen 3	39	38	39	39	cm
	Specimen 4	39	39	39	42	cm
32	Average value, individual test [3]	**39**	**41**	**40**	**42**	
33	Photo of specimen in enclosure no.	1	2	3	4	
34	Flue gas temperature	124	125	120	119	°C
35	Maximum of average value Time [1]	01:23	01:26	01:23	01:20	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
		#1403 machine dir.	#1404 transv.dir.	#1412 machine.dir.	#1413 machine.dir.	
1	residual length	**39**	**41**	**40**	**42**	cm
2	max. smoke temperature	**124**	**125**	**120**	**119**	°C
3	density of smoke - integral	**12**	**11**	**14**	**12**	%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, 12.07.2018

clerk in charge:

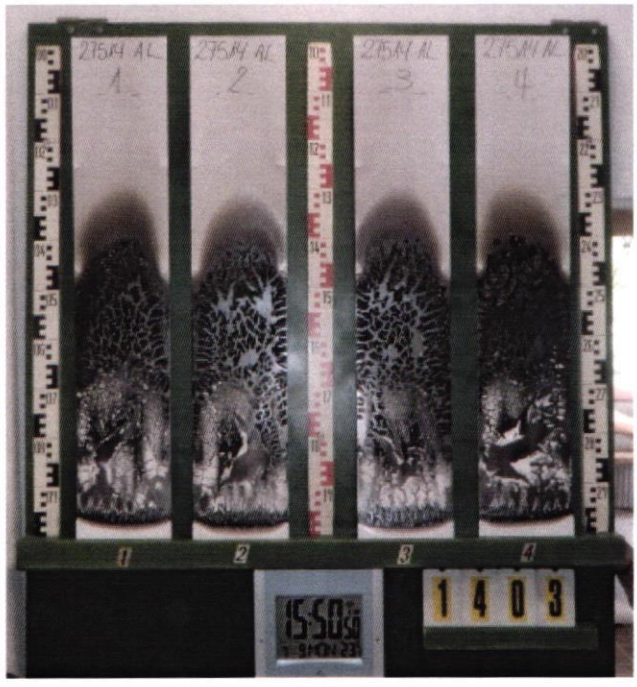
(Dipl.-Ing. (FH) Jürgen Hammer)

ANERKANNTE PRÜF-, ÜBERWACHUNGS- UND ZERTIFIZIERUNGSSTELLE
Hoch
Fladungen

Head of the test laboratory:

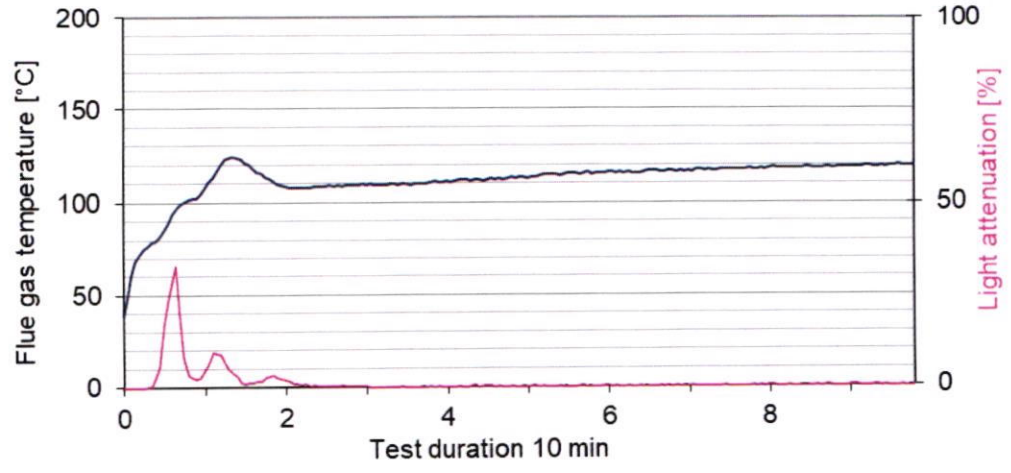
(Dipl.-Ing.(FH) Andreas Hoch)

„Brandschacht"-test #1403

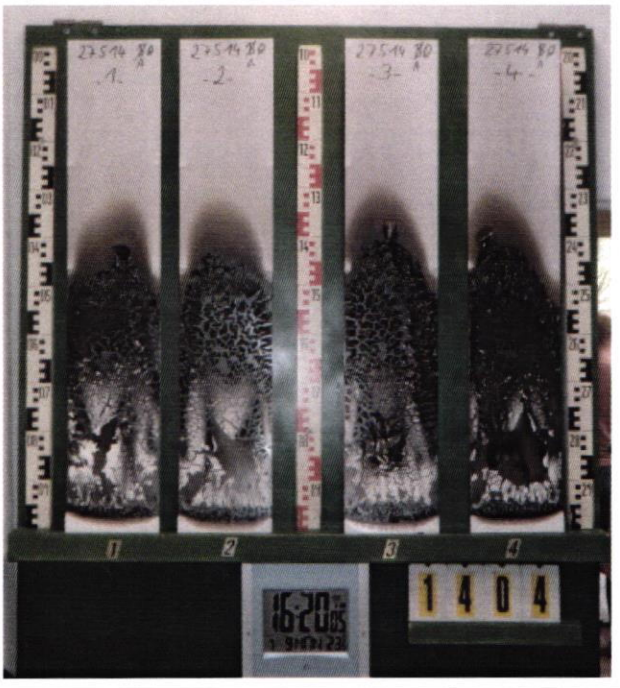


measurement

#1403, PN27514: GENERAL FORMULATIONS, "Concept E285",
Max. flue temperature: 124°C, Smoke density integral: 12%min
Residual length: 39 cm

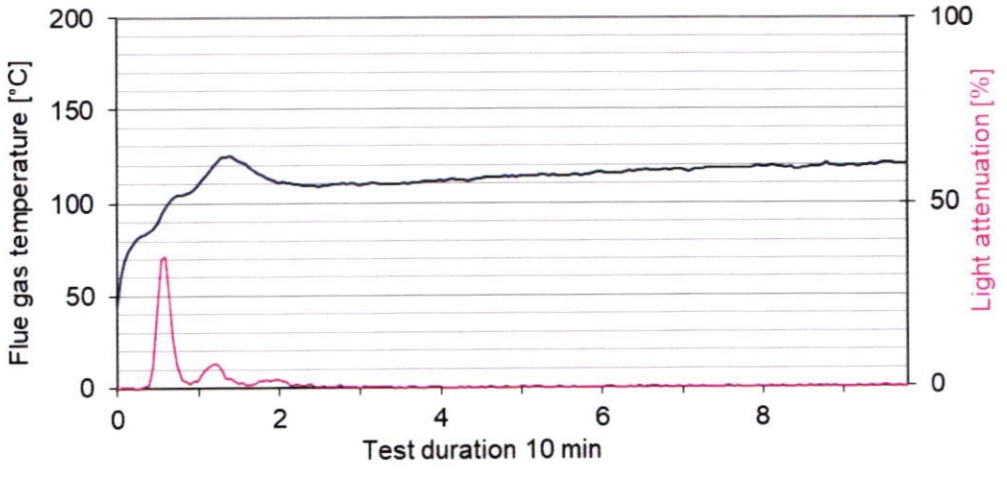


„Brandschacht"-test #1404



measurement

#1404, PN27514: GENERAL FORMULATIONS, "Concept E285",
Max. flue temperature: 125°C, Smoke density integral: 11%min
Residual length: 41 cm

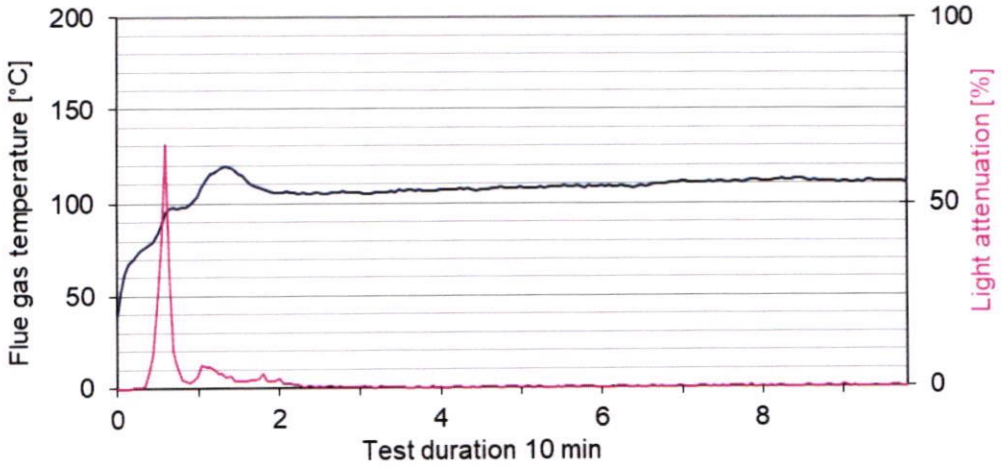


„Brandschacht“-test #1412

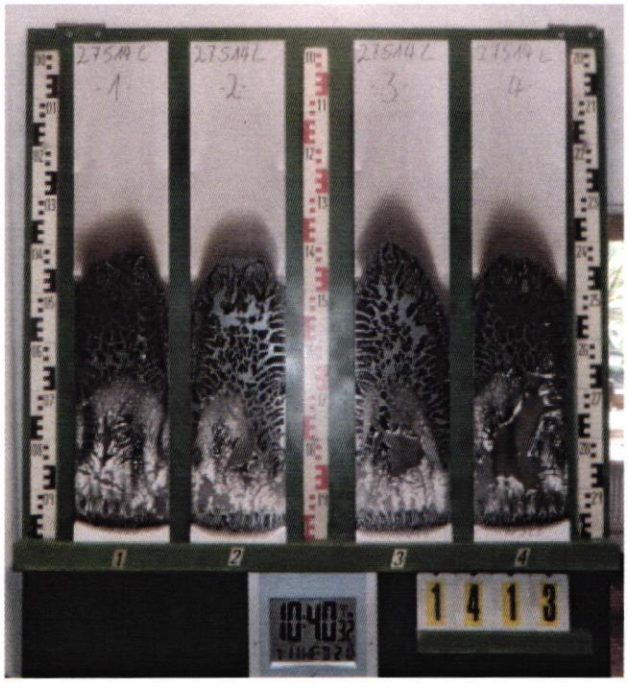


measurement

#1412, PN27514: GENERAL FORMULATIONS, "Concept E285",
Max. flue temperature: 120°C, Smoke density integral: 14%min
Residual length: 40 cm

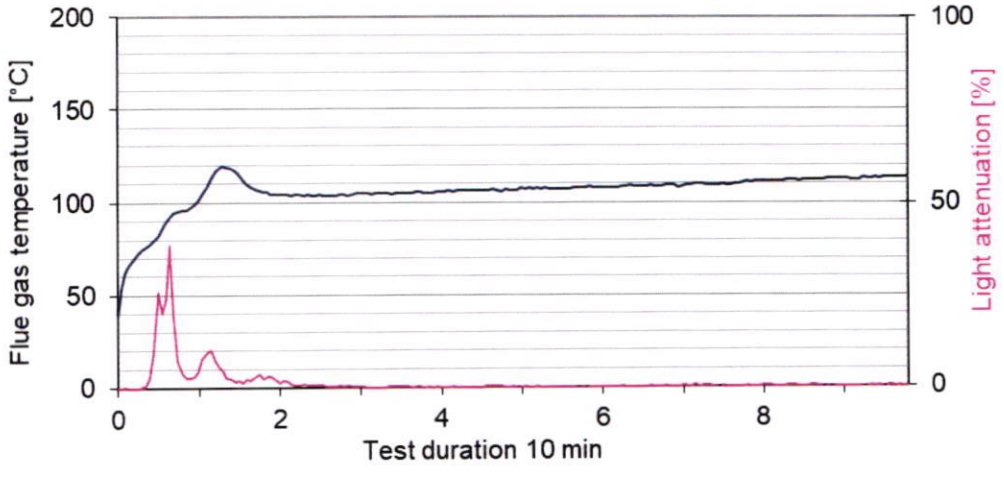


„Brandschacht“-test #1413



measurement

#1413, PN27514: GENERAL FORMULATIONS, "Concept E285",
Max. flue temperature: 119°C, Smoke density integral: 12%min
Residual length: 42 cm



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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 steel panels-

   Flaming in warp and weft direction
4. Date of test CW 24 in 2018
5. Results

PN 27514: 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	1	1	1	1	--	./.	--	--	--	--	--	s
reaching the mark of measurement[1)2)]	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	S
max. flame height	2	2	2	2	2	--	2	--	--	--	--	--	cm
time	15	15	15	15	15	--	./.	--	--	--	--	--	
self cessation of the flames end of afterflame[1)]	15	15	15	15	15	--	./.	--	--	--	--	--	s
end of glowing[1)]	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
flames were extinguished after[1)]	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
smoke development (visual)	little						very little						
dropping of burning material during 20 s[1)]	./.	./.	./.	./.	./.	--	./.	--	--	--	--	--	s
Appearance after test: burned out till max. height 1 cm x width 0,5 cm													

PN 27514: 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	--	--	--	--	--	./.	--	--	--	--	--	s
reaching the mark of measurement[1)2)]	./.	--	--	--	--	--	./.	--	--	--	--	--	s
max. flame height	2	--	--	--	--	--	2	--	--	--	--	--	cm
time	15	--	--	--	--	--	./.	--	--	--	--	--	
self cessation of the flames end of afterflame[1)]	15	--	--	--	--	--	./.	--	--	--	--	--	s
end of glowing[1)]	./.	--	--	--	--	--	./.	--	--	--	--	--	s
flames were extinguished after[1)]	./.	--	--	--	--	--	./.	--	--	--	--	--	s
smoke development (visual)	little						very little						
dropping of burning material during 20 s[1)]	./.	./.	./.	--	--	--	./.	./.	./.	--	--	--	s
Appearance after test: burned out till max. height 1 cm x width 0,5 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.