



Testing. Advising. Assuring.

Test report No. 2016-1120

for applying of a required "Verwendbarkeitsnachweis"
issued 24.02.2016

Applicant: Emirates Extruded Polystyrene LLC
DIP 1, Jebel Ali Industrial Area, Dubai
P.O Box: 28807

Date of order: 27.01.2016
Date of sampling: *no official sampling of the specimen by a representative of Exova Warringtonfire, Frankfurt*
Date of arrival: 03.02.2016
Date of test: 19.02.2016 und 22.02.2016

Order

Testing of the flammability (building class B1) according to DIN 4102-1 (May 1998)

Description / designation of the test object

Sample material designated as: Polystyrol green

Description of the relevant test procedure

DIN 4102 part 1 (Mai 1998)

This test report does not replace the required „Verwendbarkeitsnachweis“. It is only used for issuing the "Verwendbarkeitsnachweis".

1. Description of the test material

1.1 Details of the customer:

Sample material designated as: Polystyrol green

The standard product size is 1250mm length 600mm width 25mm thickness.
Apple green color, which contains GPPS, HCFC blowing agent, flame retardant, talc powder and color pigment.
Thermal insulation purpose for roofing, wall and floor.

1.2 At the specimen preparation by Exova Warringtonfire, Frankfurt determined values:

Polystyrol

Colour:	green
Thickness:	26,11 mm
Square weight:	879 g/m ²

Testing after storing 14- days under climatic conditions (23°C / 50 % rel. humidity).

2. Test results

2.1.1 Brandschachtprüfung according to DIN 4102-1

Sample A: Material tested in production direction

Test results of the Brandschacht tests part 1						
line no.		Measurements test sample				
			A	B	C	D
1	<u>no. test arrangement according to DIN 4102 part 15, table 1</u>		2			
2	<u>flame height max. over lower sample edge</u> time ¹⁾	cm	60			
		min : s	0:12			
3	<u>ascertainties on the front side</u> Flaming/glowing time ¹⁾	min : s	0:03			
4	<u>melting / burning through</u> time ¹⁾	min : s	0:16			
5	<u>ascertainties on the back side</u> Flaming/glowing time ¹⁾	min : s	no			
6	discolouring time ¹⁾	min : s	no			
7	<u>burning droplets</u> begin ¹⁾	min : s	not occured			
8	extent					
9	occasional dropping of material constant dropping of material					
10	<u>separating from burning sample parts</u> begin ¹⁾	min : s	no			
11	occasional separating parts					
12	constant separating parts					
13	duration of burning on the sieve tray (max.)	min : s	not occured			
14	<u>influence on the burner flame by dropping of / separating material</u> time ¹⁾	min : s	no			
15	<u>earlier end of test</u> end of the fire scenario on the sample ¹⁾	min : s	no			
16	time of a possible resulted test stop ¹⁾	min : s				

¹⁾ time from start of test

Test results of the Brandschacht tests part 2						
line no.		Measurements test sample				
			A	B	C	D
17	<u>flaming after end of test</u> duration	min : s	--/--			
18	number of sample		--/--			
19	front side of sample	cm	--/--			
20	backside of sample		--/--			
21	flame length		--/--			
22	<u>glowing after end of test</u> duration	min . s	not occured			
23	number of sample		--/--			
	place of occurrence		--/--			
24	lower sample part		--/--			
25	upper sample part		--/--			
26	front side of sample		--/--			
27	backside of sample	--/--				
28	<u>smoke density</u> < 400 % x min		10			
29	> 440 % x min		--/--			
30	<u>diagram in annex no.</u>		1			
31	<u>residual length</u> single results	cm	54 / 54 55 / 54			
32	average of the single results	cm	54			
33	photo of the sample on page		5			
34	<u>smoke temperature</u> max. of the average results	°C	116			
35	time ¹⁾	min : s	9:36			
36	diagram in annex no.		1			

¹⁾ time from start of test

Remarks: Melting the samples.
Because of the residual length of > 45 cm in the test, the quantity of tests could be reduced, according to DIN 4102-16

2.1.2 Appearance of the specimen after the test:



Sample A

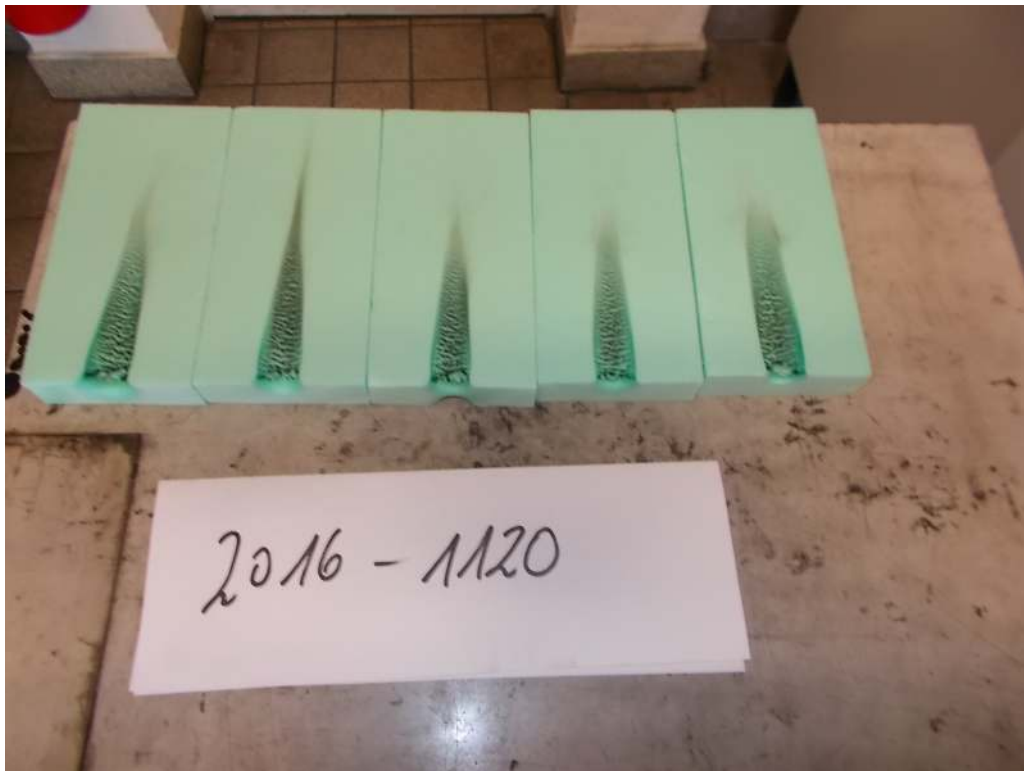
2.2.1 Normal flammability test according to DIN 4102-1

Test with edge ignition without deposit
 Flame application on: lower sample edge
 Edge ignition

Sample-no.	1	2	3	4	5
Time from start of test					
Ignition point [s]	1	1	1	1	1
Reaching the measuring mark within 20 seconds	no	no	no	no	no
Self-extinguishing of the flame [s]	5	5	5	5	5
Max. flame height [mm]	50	50	40	40	40
Time [s]	4	4	4	4	4
End of afterflaming [s]	-	-	-	-	-
End of afterglowing [s]	-	-	-	-	-
Flames extinguished after [s]	-	-	-	-	-
Smoke development (visuell impression)	strong smoke development				
Separating from burning material	no	no	no	no	no
Time [s]	-	-	-	-	-

Remarks: none

2.2.3 Appearance of the sample after the small burner test:



Assessment

The material, described in chapter one fulfils the requirements of the building class B2 according to DIN 4102-1 (Mai 1998).

The determined test results show that the material also fulfils the requirements

of the building class B1

according to DIN 4102-1 (Mai 1998).

Special comment

The fire test result is only valid for the in chapter one described material in the tested colour and square weight.

The test was carried out in free hanging configuration.

The distance to other plane material must be more or equal then 40 mm.

The material wasn't tested after an outside storage.

In combination with other materials (for example coatings, deposits) the burning behaviour could be influenced unfavourable so that the classification above is not valid any longer. According to DIN 4102-1 the burning behaviour in combination with other materials has to be tested separately.

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Frankfurt, the 24.02.2016



H. Anders

Tester in Charge



i. A.
P. Scheinkönig
Dipl.-Ing. T. Zachäus
Laboratory supervisor

This Test report is valid until 18.02.2021

The results of the tests relate only to the behaviour of the test specimen which is designated on the top.

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This test report is a translation of the German version 2016-1120 (issued 24.02.2016). In case of doubt only the German version is valid

This test report contains 8 pages and 1 annex.

Annex 1 to the Test report No. 2016-1120 issued 24.02.2016

Sample A:

