

TEST REPORT

Order no: 09.09.2022

Signature: SL/Z-677/EN45545-R26/0807a/2022

Police, 07.11.2022

Test method:

1. EN 60695-11-10:2014 - Fire hazard testing – Part 11-10: Test flames – 50 W horizontal and vertical flame test methods.
2. EN 45545-2:2020. Railway applications – Fire protection on railway vehicles – Part 2: Requirements for fire behavior of materials and components

Content of request: Tests according to EN 45545-2:2020 - requirement R26
EN 60695-11-10:2014. Method B; V-0.

Sponsor: Impakt S.A.
ul. Stanisława Lema 16
62-050 Mosina
Poland

Material: Polycarbonate (PC)

Composition: Lanberg AC-WS01-USB2-E, AC-WS01-USB2-F, AC-WS01-USB2-E-B, AC-WS01-USB2-F-B

Manufacturer/supplier: Impakt S.A.
ul. Stanisława Lema 16
62-050 Mosina
Poland

Assessment: “V-0 @ 3,2 mm” class according to EN 60695-11-10:2014.
The tested product fulfils the requirement of R26 according to
EN 45545-2:2020 for hazard level HL1, HL2 and HL3.

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Report applies only to the sample tested and is not necessarily indicative of the qualities of apparently identical or similar products.

Content of test report: five pages with signature and numbers.

1. EN 60695-11-10 - Test method B - Vertical Burning Test

Test conditions - temperature of 19 °C, and relative humidity of 64 %

Thickness of tested material 3,2 mm

Exposure time of pilot burner flame - 20 s (2 x 10 s).

Table 1. The first set of 5 samples “as received” conditioned > 48 h under temperature of 23±2°C and relative humidity of 50±5 %

Name of measured quantity	Unit	Specimen no					Test results
		1	2	3	4	5	
Afterflame time after first flame application, t_1	s	4	2	1	3	1	4
Afterflame time after second flame application, t_2	s	5	2	5	1	5	5
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens), s	s	9	4	6	4	6	29
Afterglow time after second flame application, t_3	s	0	0	0	0	0	0
Afterflame plus afterglow time for each individual specimen after the second flame application (t_2+t_3), s	s	5	2	5	1	5	5
Specimens burn up to the holding clamp	YES/NO	NO	NO	NO	NO	NO	NO
Specimens drip flaming particles that ignited the cotton indicator	YES/NO	NO	NO	NO	NO	NO	NO

Table 2. The first set of 5 samples after oven conditioned – 168 ± 2 h - temperature 70±2°C

Name of measured quantity	Unit	Specimen no					Test results
		1	2	3	4	5	
Afterflame time after first flame application, t_1	s	5	10	6	3	1	10
Afterflame time after second flame application, t_2	s	2	2	2	2	1	2
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens), s	s	7	12	8	5	2	34
Afterglow time after second flame application, t_3	s	0	0	0	0	0	0
Afterflame plus afterglow time for each individual specimen after the second flame application (t_2+t_3), s	s	2	2	2	2	1	2
Specimens burn up to the holding clamp	YES/NO	NO	NO	NO	NO	NO	NO
Specimens drip flaming particles that ignited the cotton indicator	YES/NO	NO	NO	NO	NO	NO	NO

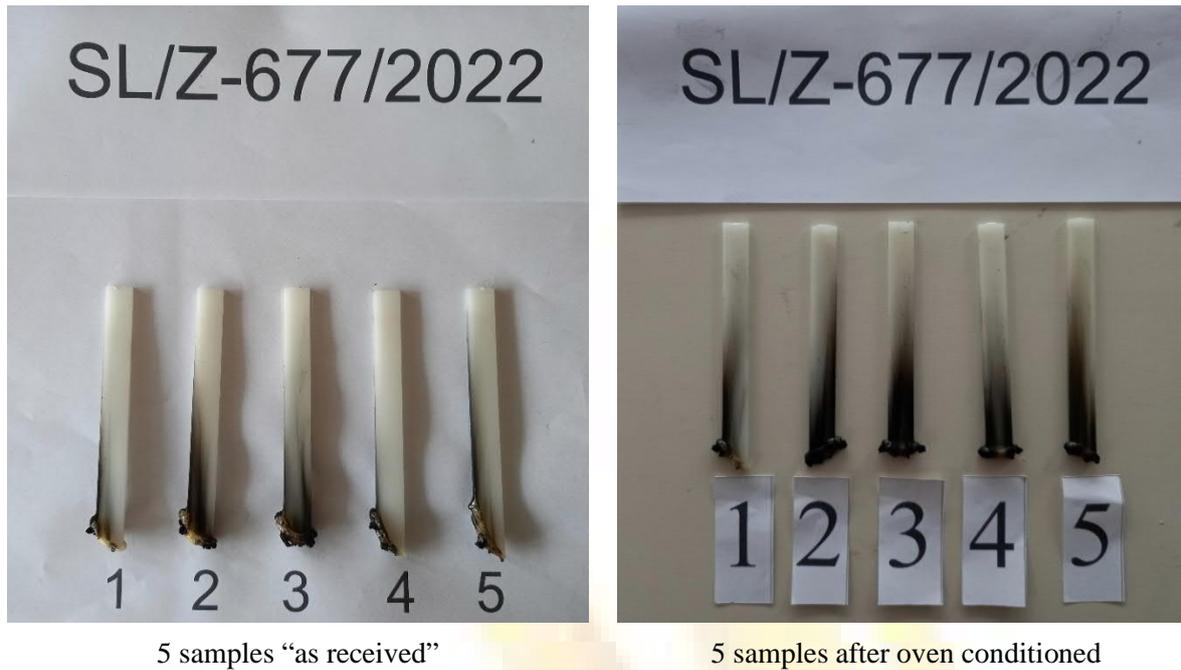


Fig. 1. Appearance of the samples of the first sets after the tests

 Table 3. The second set of 5 samples after oven conditioned – 168 ± 2 h - temperature $70 \pm 2^\circ\text{C}$

Name of measured quantity	Unit	Specimen no					Test results
		1	2	3	4	5	
Afterflame time after first flame application, t_1	s	4	3	3	2	6	6
Afterflame time after second flame application, t_2	s	2	2	4	2	3	4
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens), s	s	6	5	7	4	9	31
Afterglow time after second flame application, t_3	s	0	0	0	0	0	0
Afterflame plus afterglow time for each individual specimen after the second flame application (t_2+t_3), s	s	2	2	4	2	3	4
Specimens burn up to the holding clamp	YES/NO	NO	NO	NO	NO	NO	NO
Specimens drip flaming particles that ignited the cotton indicator	YES/NO	NO	NO	NO	NO	NO	NO

Remarks: A second set of samples was tested according to EN 60695-11-10:2014, Clause 9.2.5.



5 samples after oven conditioned

Fig. 2. Appearance of the samples of the second set after the tests

2. Assessment and evaluation - EN 60695-11-10 - Test method B

Criteria conditions	Test result	V-0	V-1	V-2	Materials classifications
Afterflame time for each individual specimen t_1 or t_2 , s	6	≤ 10	≤ 30	≤ 30	V-0 @ 3,2 mm
Total afterflame time for any condition set (t_1 plus t_2 for the 5 specimens), s	31	≤ 50	≤ 250	≤ 250	
Afterflame plus afterglow time for each individual specimen after the second flame application (t_2+t_3), s	5	≤ 30	≤ 60	≤ 60	
Afterflame or afterglow of any specimen up to the holding clamp, YES/NO	NO	NO	NO	NO	
Cotton indicator ignited by flaming particles or drops, YES/NO	NO	NO	NO	YES	

3. Final findings

Requirement	Method/norm	Measured quantity	Unit	Measured value	Critical value			Crossing coefficient		
					HL1	HL2	HL3	HL1	HL2	HL3
R26	T17 EN 60695-11-10	Vertical small flame test	-	V0	V0	V0	V0	-	-	-

The tested product fulfils the requirement of R26 according to EN 45545-2:2020 for hazard level HL1, HL2 and HL3.

4. Remaining required information

Date of receipt of samples: 24.11.2022

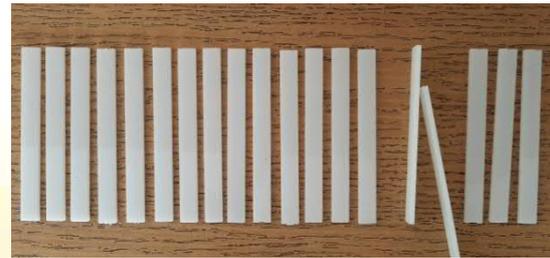
Sampling: sponsor took and delivered samples.

Description of the test material: plastic in white colour, described as "Polycarbonate (PC)", thickness of 3,2 mm and weight per unit area 3,8 kg/m². Sponsor took and delivered 19 samples with dimensions of 126,0-127,0x12,7-12,8 mm. Laboratory prepared samples for the tests.

Conditioning of specimens: >24 h at temperature of 15-35 °C and relative humidity of 45-75 %

Declarations:

1. The test results relate to the behaviour of the test specimens under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the products in use.
2. The information provided on the first page of the report concerning the scope of research and identification of the tested object/objects were provided by the Sponsor.



Operator:

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Date and place of test - 27.10 and 04-05.11.2022, Police