

RESEARCH REPORT

Your mark: 19.05.

2023Our mark: SL/Z-371/EN9239/0365/2023Police , 23.05.2023.

Research methods:

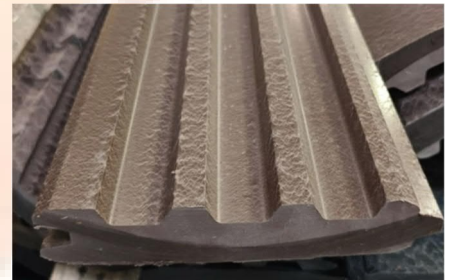
1. PN-EN ISO 9239-1:2010 - Tests of reaction to fire performance of floors - Part 1: Determination of fire properties using the radiant panel method
2. EN ISO 11925-2:2010 - Tests for reaction to fire - Ignitability of products subjected to direct flame - Part 2: Single flame tests.

Purpose of the test: To perform tests and classification according to the requirements of EN 13501-1:2019-02 (floor products).

Purchaser: VIVE Textile Recycling Sp. z o.o.
22 Łopuszańska Street
02-220 Warsaw

Material: composite planks

Description/composition: Panel made of composite, smooth top, undulating underside (tooth fault approximately 7 mm).
Overall thickness 20.5÷27.7 mm and weight per unit area 25.9 kg/m²



Manufacturer/supplier: VIVE Textile Recycling Sp. z o.o.
22 Łopuszańska Street
02-220 Warsaw

Fulfilment of requirements: The material meets the requirements for fire reaction class **Dfl-s1** according to EN 13501-1:2019-02.

According to the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location (Journal of Laws No. 75, item 690, as amended), a material with a reaction to fire class Dfl-s1, according to PN-EN 13501-1, is a **readily ignitable** material.

Reprinting and copying: only with the permission of VIVE Textile Recycling Sp. z o.o.

Without the written consent of the Sychta Laboratory Company's Materials Flammability Laboratory, the test report may **only** be copied **in its entirety**.

Conditions of validity of the document: this document applies only to test samples.

Volume of the report: this report contains six pages.

1. Reaction to fire of floors according to EN ISO 9239-1

Table 1.1. CHF critical radiant heat flux

Size name	Unit	Study direction	
		along	across
Critical CHF radiation flux	kW-m ⁻²	4,1	4,7

Size name	Unit	Sample			Average value	Standard deviation
		1	2	3		
Sample mass	g	6686	6684,6	6654	6675	18
Sample thickness	mm	27,7	27,7	27,7	27,7	0,0
Ignition time	s	187	187	194	189	4
Extinguishing time	s	-	-	-	-	-
Testing time	s	1800	1800	1800	1800	0
Range of flame after 10 min	mm	240	250	260	250	10
Flame range after 20 min	mm	400	400	430	410	17
Flame range	mm	470	470	480	473	6
Critical CHF radiation flux	kW-m ⁻²	4,1	4,1	4,0	4,1	0,1

Table 1.2. Time of flame passage through zones

Flame range	Thermal radiation on the sample surface	Zone crossing time		
		Sample		
		1	2	3
mm	kW-m ⁻²	s		
110	10,9	302	305	269
160	10,2	401	386	399
210	9,5	509	502	469
260	8,4	678	616	590
310	7,3	808	780	692
360	6,2	1019	1020	861
410	5,1	1318	1227	1132
460	4,2	1658	1566	1413
510	3,6	1658	1566	1413
560	2,9	-	-	-
610	2,6	-	-	-

Table 1.3. Smoke intensity

Size name	Unit	Sample			Average value	Standard deviation
		1	2	3		
Maximum light attenuation	%	24,7	25,0	27,6	25,8	1,6
Total attenuation of light Sc	% · min	170	191	202	188	16

Other observations: none

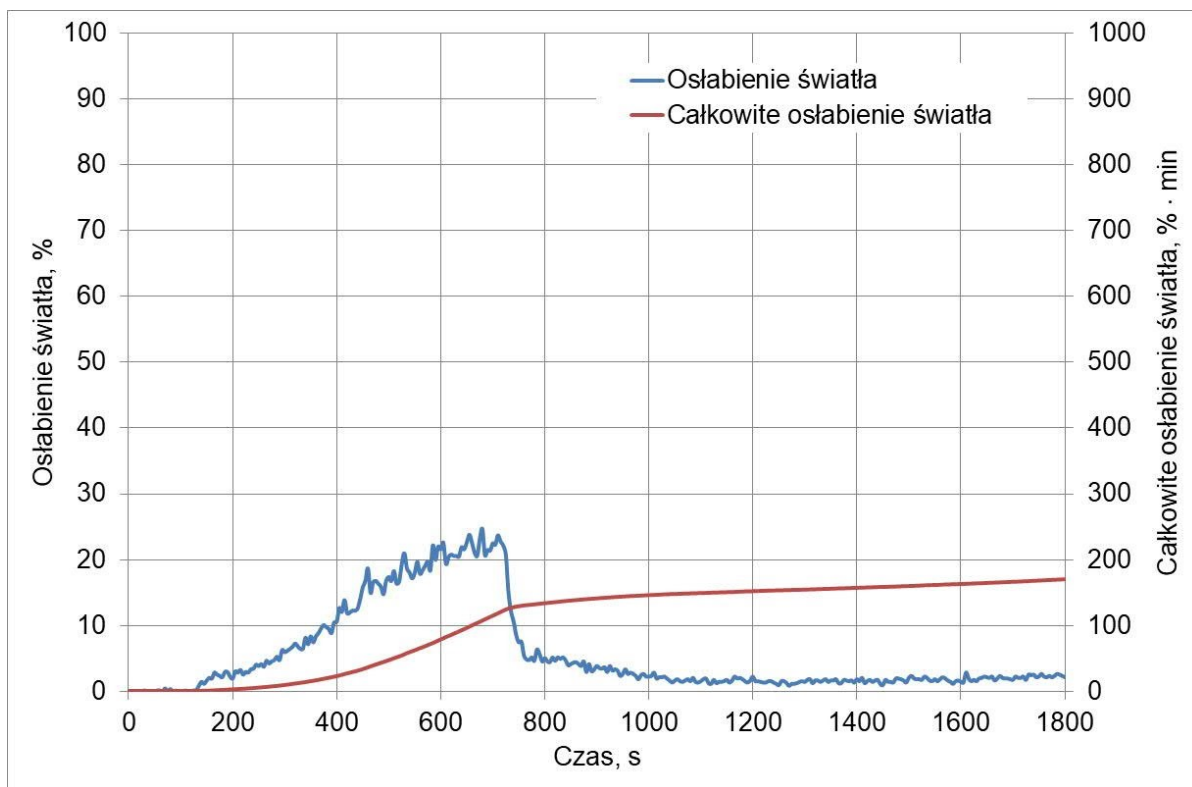


Fig. 1. Smoke intensity during the test - sample 1

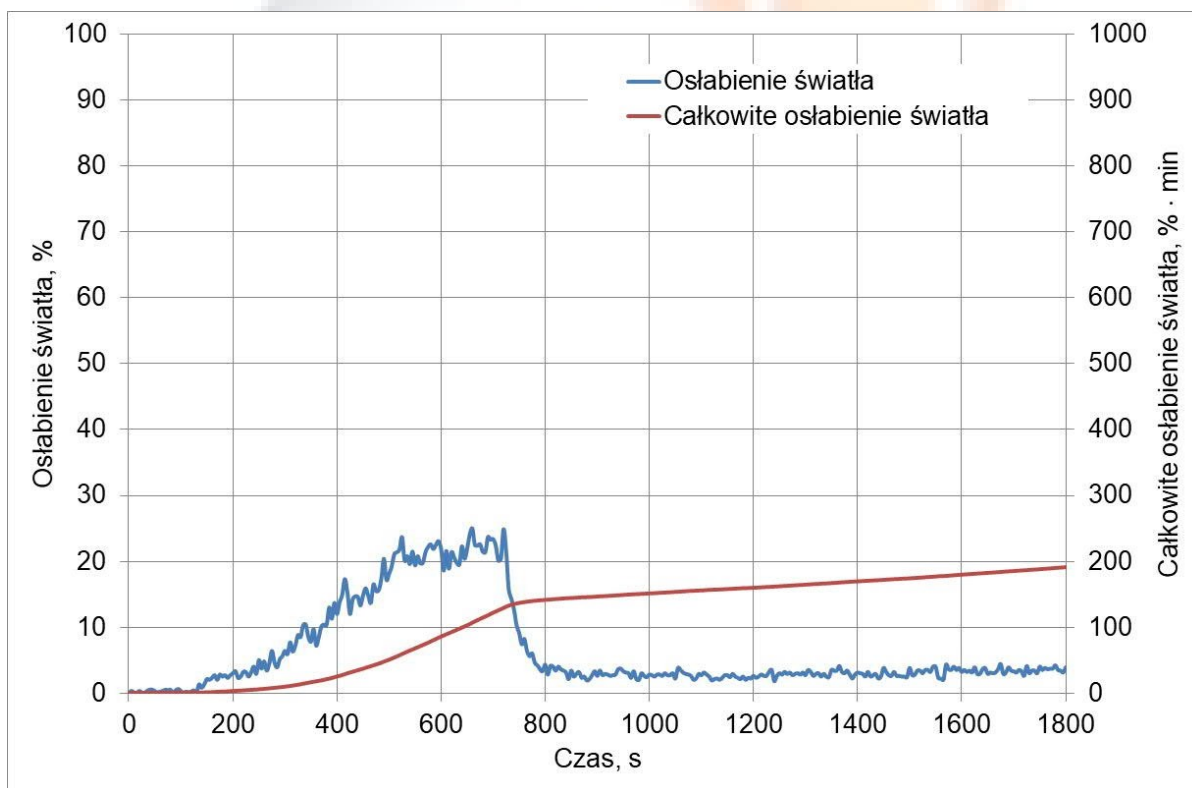


Fig. 2. Smoke intensity during the test - sample 2

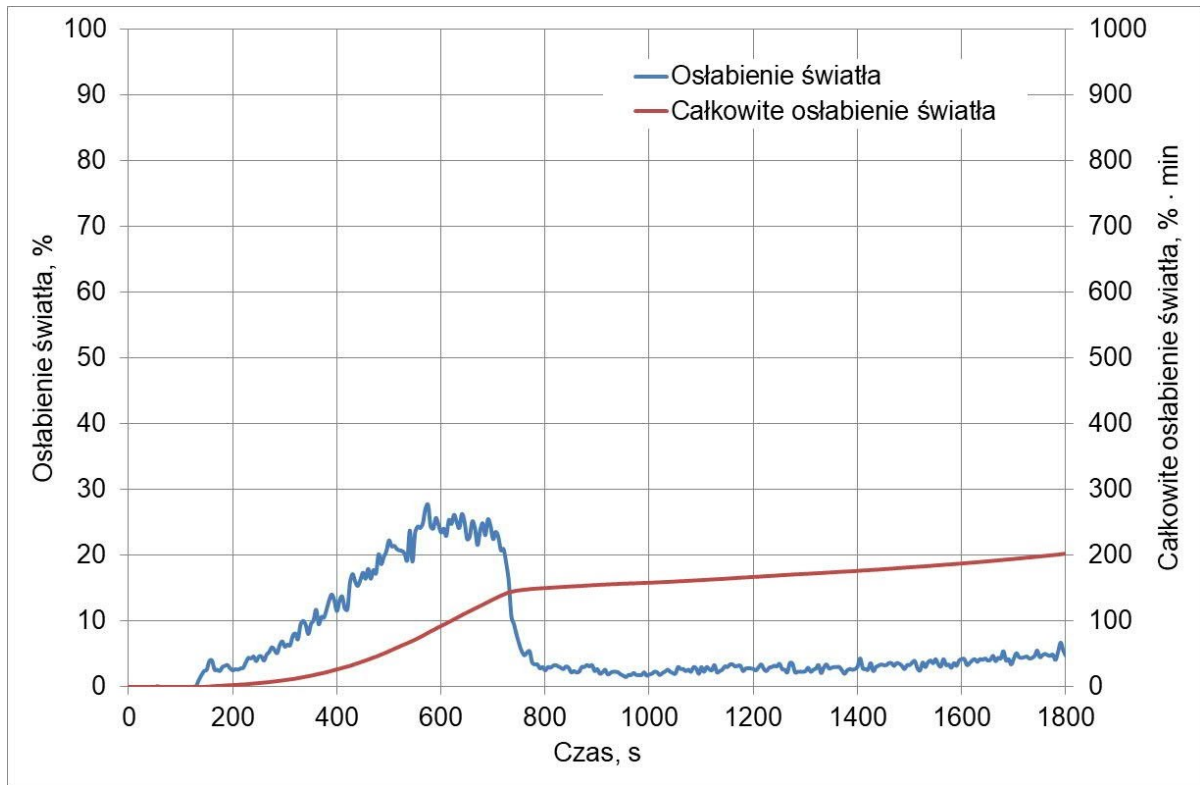


Fig. 3. Smoke intensity during the test - sample 3

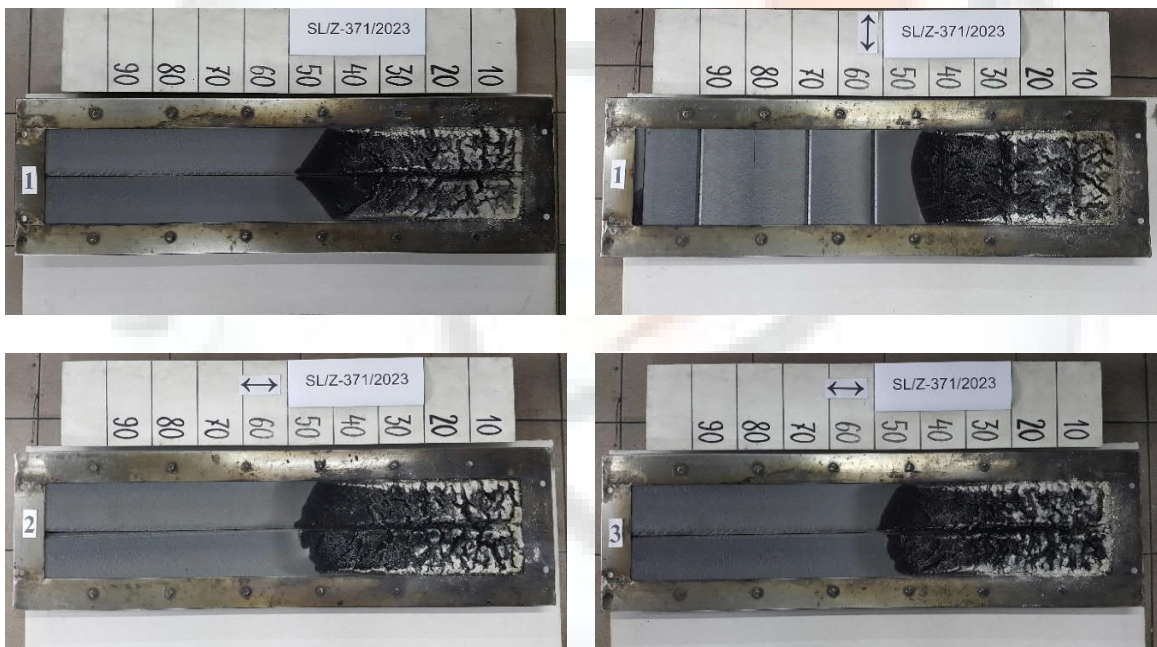


Fig. 4. View of the samples after the test

2. Ignitability of materials exposed to direct flame according to EN ISO 11925-2

Surface ignition

Pilot burner flame duration 15 s

Table 2.1. Results of ignitability tests

Size name	Unit	Sample No./Direction of test						Final value
		along			across			
		1	2	3	4	5	6	
Has ignition occurred?	YES/NO	NO	NO	NO	-	-	-	NO
Has paper ignition occurred?	YES/NO	NO	NO	NO	-	-	-	NO
Has the flame reached a range of 150 mm	YES/NO	NO	NO	NO	-	-	-	NO
Time to reach 150 mm	s	-	-	-	-	-	-	-

Edge ignition

Pilot burner flame

duration 15 s

Table 2.2. Results of ignitability tests

Size name	Unit	Sample No./Direction of test						Final value
		along			across			
		1	2	3	4	5	6	
Has ignition occurred?	YES/NO	YES	YES	YES	-	-	-	YES
Has paper ignition occurred?	YES/NO	NO	NO	NO	-	-	-	NO
Has the flame reached a range of 150 mm	YES/NO	NO	NO	NO	-	-	-	NO
Time to reach 150 mm	s	-	-	-	-	-	-	-

Other observations: none



Fig. 5 View of samples after testing

3. Fulfilment of the research objective

Test method	Parameter/unit	Result	Criterion	Class/Supplementary classification
PN-EN ISO 9239-1	CHF critical flux, kW-m ²	4,1	≥ 3,0	dn
	Smoke, %-min	188	≤ 750	s1
PN-EN ISO 11925-2 Exposure 15 s	FS in 20 s, mm	≤ 150	≤ 150	-

The tested material fulfils the requirements for reaction to fire class **Dfl-s1** according to EN 13501-1:2019-02

According to the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location (Journal of Laws No. 75, item 690, as amended), a material with a reaction to fire class **Dfl-s1**, according to PN-EN 13501-1, is a **readily ignitable** material.

Determination of the class of reaction to fire and the level of smoke generation from decomposition and combustion products was carried out for the purpose of assessing whether the objective of the study was met.

4. Other information required:

Sampling: Samples were taken and provided by the client.

Date of receipt of samples: 12.05.2023 r.

Sample description: floor panel made of grey coloured composite, smooth top, corrugated underside (tooth fault approximately 7 mm). Overall thickness $20.5 \div 27.7$ mm and weight per unit area 25.9 kg/m^2 . The purchaser provided 7 samples measuring 1047×148 mm. The laboratory prepared the samples for testing.



Substrate description and method of attachment: Material tested on a standard non-flammable substrate according to EN 13238:2011 - fibre cement board with a thickness of 8 ± 2 mm and density of $1800 \pm 200 \text{ kg/m}^3$ class A2fl-s1 - without attachment (e.g. gluing).



Conditioning conditions: Conditioning of material samples according to EN 13238:2011 clause 4.2 at a temperature of 23 ± 2 °C and a relative humidity of 50 ± 5 %, until a constant mass is achieved.

Statements:

1. "The test results refer to the behaviour of the product test samples under the specific test conditions; they must not be the sole criterion for assessing the potential fire hazard of the product used."
2. The information given on the first page of the report regarding the scope of the survey and identification of the object(s) surveyed was provided by the Contracting Authority.

Badanie wykonane:

carried out by:

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Data and place of tests: 16.05 and 23.05.2023. Police

