



TEST REPORT OF THE RESULTS OF TEST FOR THE FLAME SPREAD ON FLOOR COVERINGS

IBR/Z-022-2017

Signature No: TZ/PN9239a/060/2017

Szczecin, 06-04-2017

Test methods:

1. Reaction to fire tests for floor coverings – Part 1. Determination of the burning behaviour using radiant heat source. Polish Standard: PN-EN ISO 9239-1:2010,
2. Reaction to fire tests for building products – Part 2. Ignitability when subjected to direct impingement of flame. Polish Standard: PN-EN ISO 11925-2:2010.

Sponsor: Zakład Przemysłu Gumowego „STARGUM” Jan Stankiewicz
ul. Cieplna 7
73-110 Stargard, Poland

Material: EPDM rubber granules for sport surfaces.

Composition:

- ethylene propylene diene monomer rubber,
- mineral fillings,
- paraffin oil,
- organic and inorganic pigments,
- crosslinking agents.

Manufacturer: Zakład Przemysłu Gumowego „STARGUM” Jan Stankiewicz
ul. Cieplna 7
73-110 Stargard, Poland

Final findings

Critical flux at extinguishment	CHF	7.2 ± 0.9	kW/m ²
Maximum light attenuation	S	12 ± 4	%
Integrated smoke obscuration	Sc	187 ± 79	% · min
Maximum Flame spread distance according to PN-EN ISO 11925-2	Fs	-	mm

The clauses of test report validity: Report applies only to the sample tested and is not necessarily indicative of the qualities of apparently identical or similar products.

The reprint and the copying: only with the agreement Zakład Przemysłu Gumowego „STARGUM” Jan Stankiewicz

Without the written consent of the Laboratorium Badań Cech Pożarowych Materiałów Zachodniopomorski Uniwersytet Technologiczny in Szczecin the report can be copied only in one piece.

Adres: 71-065 Szczecin al. Piastów 41
tel./fax: +48 91 4339877 tel.: +48 91 4494174 www.zut.edu.pl/lbcpm e-mail: renata.dobrzynska@zut.edu.pl



AB 304

TESTING LABORATORY
ACCREDITED BY
POLISH CENTRE FOR
ACCREDITATION
No. AB 304

INTERNATIONAL
MARITIME
ORGANIZATION
LIST OF RECOGNIZED
TEST LABORATORIES
Doc. SSE 1/Circ.1/Rev.2
2015

POLISH REGISTER OF
SHIPPING,
APPROVAL
CERTIFICATE
No.TT/2/710405/15



1. REACTION TO FIRE TESTS FOR FLOOR COVERINGS ACCORDING TO PN-EN ISO 9239-1

1.1. Basic test results

Name of measured quantity	Unit	Direction of investigation	
		along	across
Critical flux at extinguishment CHF	kW/m ²	-	-

Name of measured quantity	Unit	Specimen			Average	Standard deviation	Coefficient of variability %
		1	2	3			
Ignition time	s	131	121	125	126	4	3
Extinguishment time	s	743	1302	1749	1265	411	33
Flame spread distance after 10 min.	mm	243	247	222	237	11	5
Flame spread distance after 20 min.	mm	243	357	299	299	46	16
Maximum flame spread distance	mm	243	332	333	303	42	14
Critical flux at extinguishment CHF	kW/m ²	8.5	6.6	6.5	7.2	0.9	12.6

1.2. Additional test results

1.2.1. Heat for sustained burning

Distance from exposed of the specimen	Calibration flux levels at the specimen	Time of arrival of the flame front		
		s		
		Specimen		
mm	kW/m ²	1	2	3
110	10.9	214	207	253
160	10.1	326	269	345
210	9.3	450	410	508
260	8.1	-	670	883
310	7.0	-	943.7	1294.1
360	6.0	-	-	-
410	5.0	-	-	-
460	4.2	-	-	-
510	3.6	-	-	-
560	2.9	-	-	-
610	2.6	-	-	-

1.2.2. Smoke generation of specimen

Name of measured quantity	Unit	Specimen			Average	Standard deviation	Coefficient of variability %
		1	2	3			
Maximum light attenuation	%	12	17	8	12	4	30
Integrated smoke obscuration	% · min	164	294	105	187	79	42

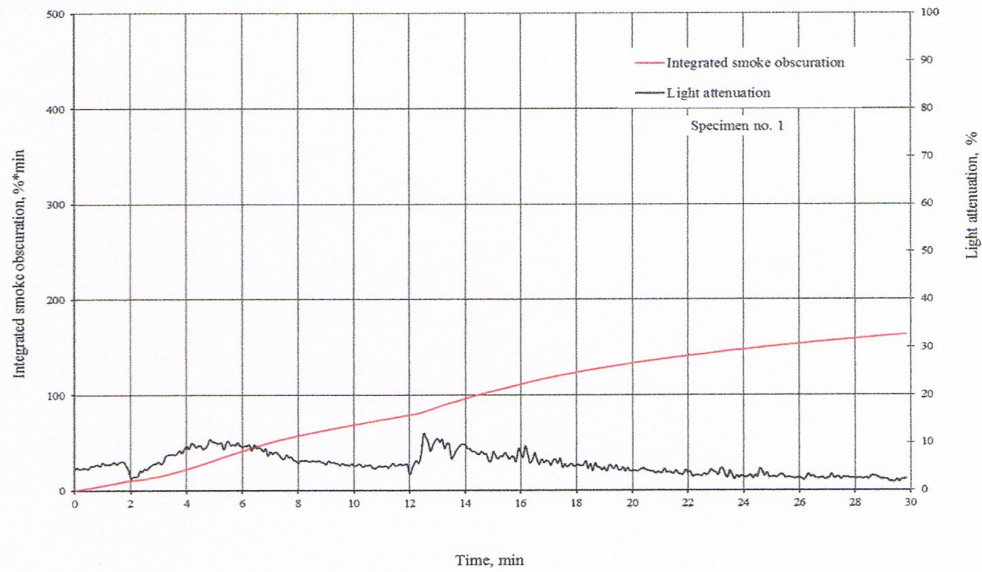


Figure 1. The relation smoke over time

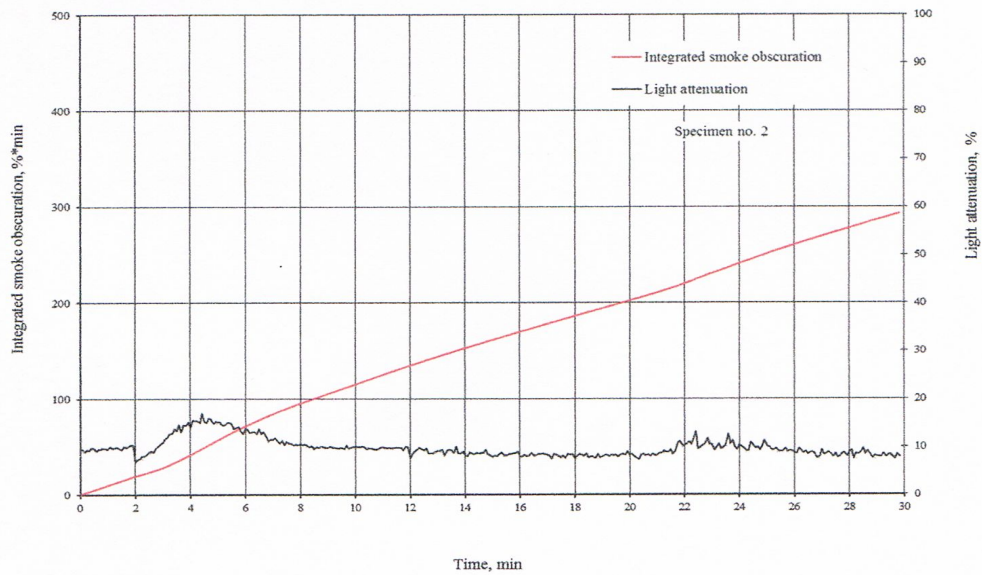


Figure 2. The relation smoke over time

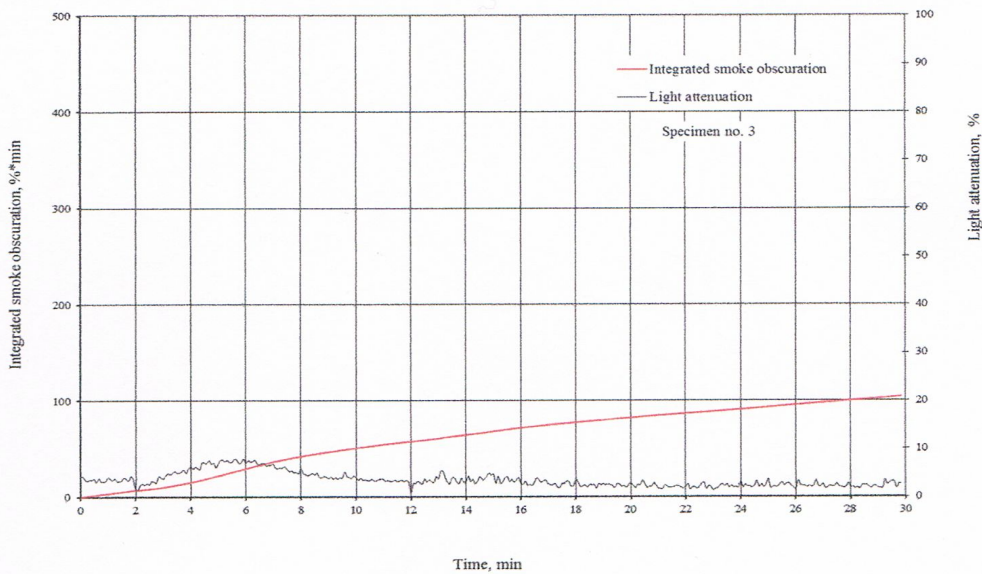


Figure 3. The relation smoke over time

1.3. Other relevant observations: nothing of importance

2. IGNITABILITY WHEN SUBJECTED TO DIRECT IMPINGEMENT OF FLAME ACCORDING TO PN-EN ISO 11925-2.

Due to the nature of the material –granules, the testing is not possible according to this method.

3. Norm required remaining information:

- 3.1. Sampling for testing: test samples obtained and delivered by the Employer.
- 3.2. Date of delivering the material: 28-03-2017
- 3.3. The thickness: 10 mm
- 3.4. Density of material: - kg/m²
- 3.5. Conditioning: conditioning the specimens according to PN-EN 13238:2011, point 4.2

4. Compliance with the requirements

Final findings

Critical flux at extinguishment CHF according to PN-EN ISO 9239-1	7.2 ± 0.9	kW/m ²
Integrated smoke obscuration according to PN-EN ISO 9239-1	187 ± 79	% · min
Maximum flame spread distance according to PN-EN ISO 11925-2	-	

Method of determining the measurement uncertainty $Y = \bar{Y}_{skr} \pm U(Y)$ - standard uncertainty

- 4.1. Compliance with the requirements acc. PN-EN 13501-1+A1:2010: the material meets the requirements for flooring materials class **Cfl - s1**
- 4.2. Material is considered to meet requirement for hardly ignitable in compliance with polish regulations (Dz.U. [Journal of Laws] from 2002, No. 75, item 690, as amended).

Declaring: The results of investigation treat to behaviour of samples to investigations of product in special conditions of investigation; they can not intended as a means of assessing the full potential the fire hazard of the materials or products in use.

Performer of tests:



Michał Kokosz

Zachodniopomorski Uniwersytet
Technologiczny w Szczecinie
LABORATORIUM
BADAŃ CECH POŻAROWYCH MATERIAŁÓW
71-065 Szczecin, al. Piastów 41
tel./fax 48 91 433 98 77, tel. 91 449 41 74

An authorizer report:

KIEROWNIK LABORATORIUM

dr inż. Renata Dobrzyńska

Date and place of test - 05-04-2017, Szczecin