

**TEST REPORT OF REACTION TO FIRE TESTS OF FLOOR COVERINGS**IBR/Z-056-2019
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Signature No: TZ/PN9239a/134/2019

Szczecin, 02-07-2019

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.

Customer: UNIRUBBER Sp. z o. o.
Zielonka 17
59-940 Węgliniec

Material: Coloured EPDM Virgin granules

Description/ Composition: The material is intended for use in external and internal sports surfaces, e.g. treadmills, courts, pitches and playgrounds

Manufacturer: UNIRUBBER Sp. z o. o.
Zielonka 17
59-940 Węgliniec

Final findings

Critical flux at extinguishment	CHF	5.5 ± 0.3	kW/m ²
Maximum light attenuation	S	5 ± 1	%
Integrated smoke obscuration	Sc	38 ± 6	% · 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.

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



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2018

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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	124	120	124	123	1	1
Extinguishment time	s	1619	1800	1800	1740	85	5
Flame spread distance after 10 min.	mm	271	298	270	279	13	5
Flame spread distance after 20 min.	mm	350	391	360	367	17	5
Maximum flame spread distance	mm	365	397	400	387	16	4
Critical flux at extinguishment CHF	kW/m ²	5.9	5.3	5.2	5.5	0.3	5.5

1.2. Additional test results

1.2.1. Heat for sustained burning

Distance from exposed of the specimen mm	Calibration flux levels at the specimen kW/m ²	Time of arrival of the flame front s		
		Specimen		
		1	2	3
110	10.9	211	189	227
160	10.1	293	246	297
210	9.3	388	336	411
260	8.1	564	445	563
310	7.0	726	651	758
360	6.0	989	896	1202
410	5.0	-	-	1605
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	%	7	6	5	6	1	15
Integrated smoke obscuration	% · min	55	43	32	43	9	22

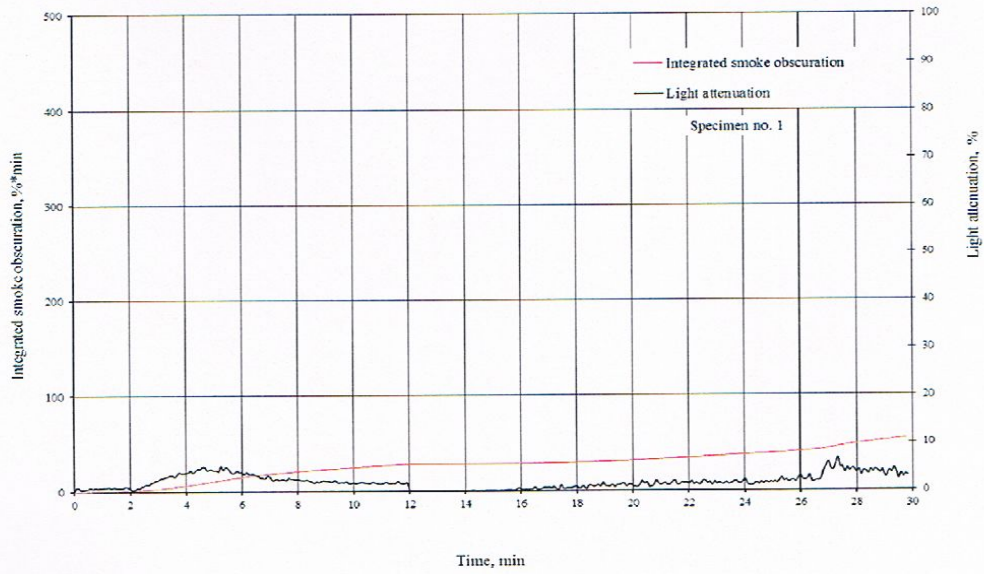


Figure 1. The relation smoke over time

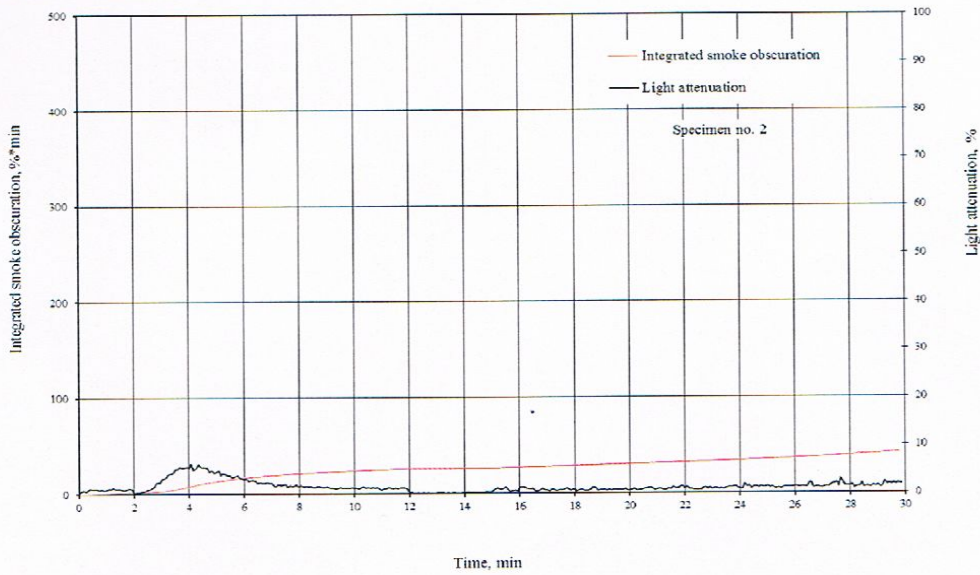


Figure 2. The relation smoke over time

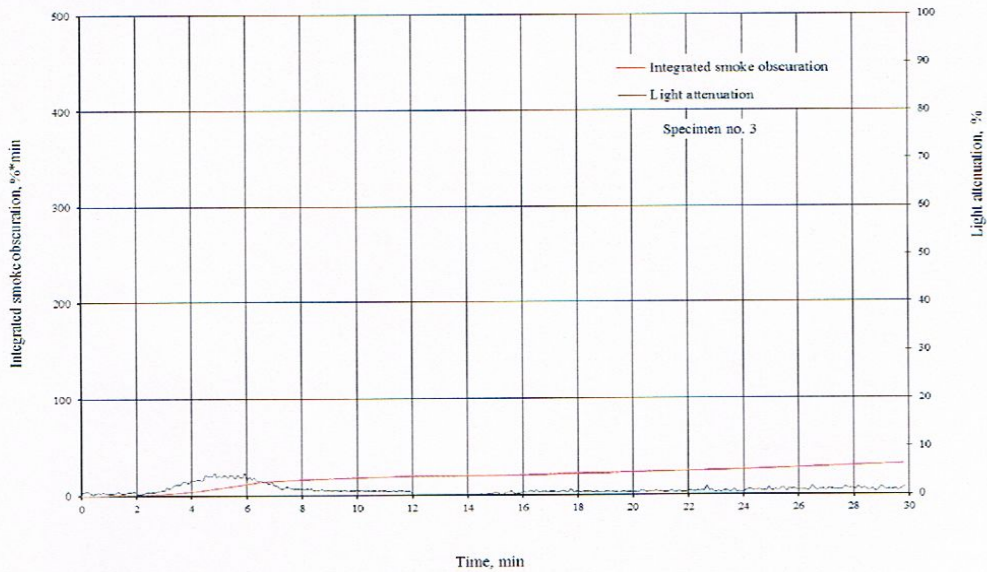


Figure 3. The relation smoke over time

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: 26-06-2019

3.3. The thickness of system: 10 mm

3.4. Density of material: ca. 13 kg/m²

3.5. Description of the product tested: Granules RAL1001 beige EPDM (1.0 mm - 3.5 mm), RAL1006 earth yellow EPDM (1.0 mm - 3.5 mm), RAL 1012 yellow EPDM (1.0 mm - 3.5 mm), RAL1013 pearl EPDM (1.0 mm - 3.5 mm), RAL 1015 eggshell EPDM (1.0 mm - 3.5 mm), RAL 2004 orange EPDM (1.0 mm - 3.5 mm), RAL 3016 red EPDM (1.0 mm - 3.5 mm), RAL 3017 rose EPDM (1.0 mm - 3.5 mm), RAL 4005 purple EPDM (1.0 mm - 3.5 mm), RAL 5003 sapphire blue EPDM (1.0 mm - 3.5 mm), RAL 5014 blue-grey EPDM (1.0 mm - 3.5 mm), RAL 5015 sky blue EPDM (1.0 mm - 3.5 mm), RAL 5017 rainbow blue EPDM (1.0 mm - 3.5 mm), RAL 5018 turquoise EPDM (1.0 mm - 3.5 mm), RAL 5019 capri blue EPDM (1.0 mm - 3.5 mm), RAL 5024 teal EPDM (1.0 mm - 3.5 mm), RAL 6000 patina green EPDM (1.0 mm - 3.5 mm), RAL 6011 reseda green EPDM (1.0 mm - 3.5 mm), RAL 6017 may green EPDM (1.0 mm - 3.5 mm), RAL 6025 rainbow green EPDM (1.0 mm - 3.5 mm), RAL 6032 signal green EPDM (1.0 mm - 3.5 mm), RAL 7015 slate grey EPDM (1.0 mm - 3.5 mm), RAL 7035 light grey EPDM (1.0 mm - 3.5 mm), RAL8024 brown EPDM (1.0 mm - 3.5 mm), RAL 9004 black EPDM (1.0 mm - 3.5 mm)

3.6. 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	5.5 ± 0.3	kW/m ²
Integrated smoke obscuration according to PN-EN ISO 9239-1	43 ± 9	% · min
Maximum flame spread distance according to PN-EN ISO 11925-2	-	

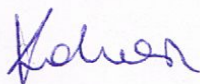
Method of determining the measurement uncertainty $Y = \bar{V}_y \pm U(Y)$ - standard uncertainty

4.1. Compliance with the requirements acc. PN-EN 13501-1+A1:2019: 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 - 28-06-2019 ÷ 01-07-2019, Szczecin