

## REPORT ON THE ASSESSMENT OF CONFORMITY OF THE PRODUCT

№. R.ITT.29.49.5.2.163 Edition I of 24.07.2017

*Name and address of the certificate holder:*

**Polska Grupa Tekstylna Sp. z o.o.**  
**ul. Zeusa 27**  
**01-497 Warszawa**  
**Poland**

*Product name and description:*

**Fabric WULKAN – dyed, flame retardant, raw material: 100 % cotton, surface mass: (330 ± 10) g/m<sup>2</sup>, intended for protective clothing**

*Document underlying the conformity assessment process:*

PN-EN ISO 13688:2013-12 [EN ISO 13688:2013] *Protective clothing – General requirements* – in terms of:

- p. 4.2 Innocuousness;
- p. 5.3 Dimensional change due to cleaning;

PN-EN ISO 11611:2015-11 [EN ISO 11611:2015] *Protective clothing for use In welding and allied processes* – in terms of:

- p. 6.2 Tensile strength;
- p. 6.3 Tear strength;
- p. 6.6 Dimensional change of textile materials;
- p. 6.7 Limited flame spread;
- p. 6.8 Impact of spatter (small splashes of molten metal);
- p. 6.9 Heat transfer (radiation);
- p. 6.10 Electrical resistance;

PN-EN ISO 11612:2015-11 [EN ISO 11612:2015] *Protective clothing – Clothing to protect against heat and flame – Minimum performance requirements* – in terms of:

- p. 6.2.1 Heat resistance at a temperature of (180 ± 5) °C;
- p. 6.3 Limited flame spread;
- p. 6.4 Dimensional change of textile materials;
- p. 6.5.1 Tensile strength;
- p. 6.5.2 Tear strength;
- p. 7.2 Convective heat;
- p. 7.3 Radiant heat;
- p. 7.5 Molten iron splash;
- p. 7.6 Contact heat;

**1. TEST RESULTS OBTAINED**

#	Parameter	Test method	Test result	PN-EN ISO 11611 Requirements	Number of test report
			Sample No. 1		
1.	6.2 Tensile strength – after 50 cycles of cleaning and drying	ISO 13934-1	warp: 1013 N; 1109 N; 1015 N; 1058 N; 1086 N; average value: 1056 N weft: 950 N; 721 N; 523 N; 634 N; 574 N; average value: 680 N	≥ 400 N	797-1/17 of 05.07.2017 <sup>1)</sup>
2.	6.2 Tear strength – after 50 cycles of cleaning and drying	ISO 13937-2	warp: 18 N; 17 N; 17 N; 17 N; 17 N; average value: 17 N weft: 20 N; 20 N; 20 N; 20 N; 19 N; average value: 20 N class 1	class 1: ≥ 15 N class 2: ≥ 20 N	797-1/17 of 05.07.2017 <sup>1)</sup>
3.	6.5 Dimensional change of textile materials – after 5 cycles of cleaning and drying	ISO 5077	warp: -3,0 ± 0,0 % weft: -2,0 ± 0,0 %	≤ ± 3,0 %	342.2/2016/G/A of 24.08.2016 r. <sup>2)</sup>
4.	6.7 Limited flame spread – Procedure A (code letter A1) – original fabric	ISO 15025 Procedure A	A1 The fabric does not burn to the edge, no hole is formed, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge. No specimen shall give flaming or molten debris. No specimen shall give hole formation of 5 mm or greater in any direction, except for an interlining that is used for specific protection other than heat and flame protection. Afterglow time shall be ≤ 2 s. Afterflame time shall be ≤ 2 s.	176/BP/16 of 11.07.2016 r. <sup>3)</sup>
5.	6.7 Limited flame spread – Procedure A (code letter A1) – after 50 cycles of cleaning and drying	ISO 15025 Procedure A	A1 The fabric does not burn to the edge, no hole is formed, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.	177/BP/16 of 11.07.2016 r. <sup>3)</sup>
6.	6.7 Limited flame spread – Procedure A (code letter A2) – original fabric	ISO 15025 Procedure B	A2 The fabric does not burn to the edge, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.	176/BP/16 of 11.07.2016 r. <sup>3)</sup>
7.	6.7 Limited flame spread – Procedure A (code letter A2) – after 50 cycles of cleaning and drying	ISO 15025 Procedure B	A2 The fabric does not burn to the edge, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall give flaming or molten debris. Afterglow time shall be ≤ 2 s. Afterflame time shall be ≤ 2 s.	177/BP/16 of 11.07.2016 r. <sup>3)</sup>
8.	6.8 Impact of spatter – after 50 cycles of cleaning and drying	ISO 9150	number of drops: 24; 23; 25; 24; 20; 25; 24; 20; 23; 24; average value: 23 ± 2 drops class 1	class 1: min. 15 drops class 2: min. 25 drops	IN-01385/2017-E of 11.07.2017 r. <sup>4)</sup>

#	Parameter	Test method	Test result	PN-EN ISO 11611 Requirements	Number of test report
			Sample No. 1		
9.	6.9 Heat transfer (radiation) – after 50 cycles of cleaning and drying	ISO 6942	RHTI <sub>24</sub> – 17,2 s; 17,4 s; 17,9 s average value: 17,5 ± 1 s class 2	class 1: RHTI 24 ≥ 7 s class 2: RHTI 24 ≥ 16 s	IN-01384/2017-E of 05.07.2017 r. <sup>4)</sup>
10.	6.10 Electrical resistance – after 50 cycles of cleaning and drying	EN 1149-2	R - 1,28 × 10 <sup>8</sup> Ω; 1,35 × 10 <sup>8</sup> Ω; 1,56 × 10 <sup>8</sup> Ω; 1,90 × 10 <sup>8</sup> Ω; 1,49 × 10 <sup>8</sup> Ω average value: 1,52 × 10 <sup>8</sup> Ω	R > 10 <sup>5</sup> Ω	797-1/17 of 05.07.2017 r. <sup>1)</sup>

#	Parameter	Test method	Test result	PN-EN ISO 11612 Requirements	Number of test report
			Sample No. 1		
11.	6.2.1 Heat resistance at (180 ± 5) °C – after 50 cycles of cleaning and drying	ISO 17493	The fabric is not caught fire, not melted. Dimensional change: warp: 0 % weft: 0 %	The specimen shall not ignite or melt. The specimen shall not shrink more than 5 %	797-1/17 of 05.07.2017 r. <sup>1)</sup>
12.	6.3.2 Limited flame spread – Procedure A (code letter A1) – original fabric	ISO 15025 Procedure A	A1 The fabric does not burn to the edge, no hole is formed, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge. No specimen shall give flaming or molten debris. No specimen shall give hole formation of 5 mm or greater in any direction, except for an interlining that is used for specific protection other than heat and flame protection. Afterglow time shall be ≤ 2 s. Afterflame time shall be ≤ 2 s.	176/BP/16 of 11.07.2016 r. <sup>3)</sup>
13.	6.3.2 Limited flame spread – Procedure A (code letter A1) – after 50 cycles of cleaning and drying	ISO 15025 Procedure A	A1 The fabric does not burn to the edge, no hole is formed, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.	177/BP/16 of 11.07.2016 r. <sup>3)</sup>
14.	6.3.3 Limited flame spread – Procedure A (code letter A2) – original fabric	ISO 15025 Procedure B	A2 The fabric does not burn to the edge, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall permit any part of the lowest boundary of any flame to reach the upper or either vertical edge.	176/BP/16 of 11.07.2016 r. <sup>3)</sup>
15.	6.3.3 Limited flame spread – Procedure A (code letter A2) – after 50 cycles of cleaning and drying	ISO 15025 Procedure B	A2 The fabric does not burn to the edge, no flaming or molten debris, afterflame time 0 s, afterglow time 0 s	No specimen shall give flaming or molten debris. Afterglow time shall be ≤ 2 s. Afterflame time shall be ≤ 2 s.	177/BP/16 of 11.07.2016 r. <sup>3)</sup>
16.	6.4 Dimensional change of textile materials – after 5 cycles of cleaning and drying	EN ISO 5077	warp: -3,0 ± 0,0 % weft: -2,0 ± 0,0 %	≤ ± 3,0 %	342.2/2016/G/A of 24.08.2016 r. <sup>2)</sup>

#	Parameter	Test method	Test result	PN-EN ISO 11612 Requirements	Number of test report
			Sample No. 1		
17.	6.5.1 Tensile strength – after 50 cycles of cleaning and drying	ISO 13934-1	warp: 1013 N; 1109 N; 1015 N; 1058 N; 1086 N; average value: 1056 N weft: 950 N; 721 N; 523 N; 634 N; 574 N; average value: 680 N	≥ 300 N	797-1/17 of 05.07.2017 <sup>1)</sup>
18.	6.5.2 Tear strength – after 50 cycles of cleaning and drying	ISO 13937-2	warp: 18 N; 17 N; 17 N; 17 N; 17 N; average value: 17 N weft: 20 N; 20 N; 20 N; 20 N; 19 N; average value: 20 N	≥ 10 N	797-1/17 of 05.07.2017 <sup>1)</sup>
19.	7.2 Convective heat (B) – after 50 cycles of cleaning and drying	ISO 9151	B1 HTI <sub>24</sub> – 6,6 s; 6,8 s; 6,6 s average value: 6,6 ± 0,3 s	4 s ≤ B1 < 10 s 10 s ≤ B2 < 20 s B3 ≥ 20 s	IN-01384/2017-E of 05.07.2017 r. <sup>4)</sup>
20.	7.3 Radiant heat (C) – after 50 cycles of cleaning and drying	ISO 6942 met. B (20 kW/m <sup>2</sup> )	C1 RHTI <sub>24</sub> – 17,2 s; 17,4 s; 17,9 s average value: 17,5 ± 1 s	7 s ≤ C1 < 20 s 20 s ≤ C2 < 50 s 50 s ≤ C3 < 95 s C4 ≥ 95 s	IN-01384/2017-E of 05.07.2017 r. <sup>4)</sup>
21.	7.5 Molten iron splash (E) – after 50 cycles of cleaning and drying	ISO 9185	E1 Used mass metal: 133,4 g; 69,1 g; 70,5 g; 67,8 g; 69,7 g; Index of fused iron splash: 67,0 ± 5,2 g	60 g Fe ≤ E1 < 120 g Fe 120 g Fe ≤ E2 < 200 g Fe E3 ≥ 200 g Fe	IN-01385/2017-E of 11.07.2017 r. <sup>4)</sup>
22.	7.6 Contact heat (F) – after 50 cycles of cleaning and drying	ISO 12127 T <sub>c</sub> = 250 °C	F1 t <sub>t</sub> – 7,2 s; 7,3 s; 7,2 s average value: 7,2 ± 0,2 s	5 s ≤ F1 < 10 s 10 s ≤ F2 < 15 s F3 ≥ 15 s	IN-01384/2017-E of 05.07.2017 r. <sup>4)</sup>

#	Parameter	Test method	Test result	PN-EN ISO 13688 Requirements	Number of test report
			Sample No. 1		
23.	4.2 Innocuousness The content of carcinogenic amines	EN 14362-1	Not detected	Should not be detected	Certificate Oeko-Tex Standard 100 No. BEWO 064635 of 22.12.2016 r. <sup>5)</sup>
24.	4.2 Innocuousness pH value	EN ISO 3071	3,5 < pH < 7,5	3,5 < pH < 9,5	Certificate Oeko-Tex Standard 100 No. BEWO 064635 of 22.12.2016 r. <sup>5)</sup>
25.	5.3 Dimensional change due to cleaning – after 5 cycles of cleaning and drying	EN ISO 5077	warp: -3,0 ± 0,0 % weft: -2,0 ± 0,0 %	≤ ± 3,0 %	342.2/2016/G/A of 24.08.2016 r. <sup>2)</sup>

Tests carried out in:

- 1) MIRTA-KONTROL d.o.o. – Zagreb
- 2) Instytut Włókiennictwa, Laboratorium Badań Surowców i Wytrobów Włókienniczych – Łódź
- 3) Instytut Włókiennictwa, Laboratorium Badań Palności Wytrobów – Łódź
- 4) LEITAT Technological Center – Barcelona
- 5) TESTEX AG, SWISS TEXTILE TESTING INSTITUTE – Zurich

**Pre-treatment:**

PN-EN ISO 6330:2012 [EN ISO 6330:2012] Textiles – Domestic washing and drying procedures for textile testing, 6N type washing – at 60 °C, F type drying – tumble drying.

**List of samples (number and type of sample)**

<b>1</b>	Fabric WULKAN, raw material: 100 % cotton, surface mass: (330 ± 10) g/m <sup>2</sup>
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**2. DELIVERY PROCESS ASSESSMENT**

On the basis of the assessment carried out on the supply of 6.09.2016 r. ITT CERTEX Sp. z o.o. certifies that the certificate holder: Polska Grupa Tekstylna Sp. z o.o., mentioned in the Certificate No. ITT.29.49.5.2.163 leads a stable process of importing the product certified to ensure the repeatability characteristics of the products, which has been confirmed by evaluation of stages: ordering, supply controls, labelling, packaging and storing.

**3. SUMMARY**

Performed process of conformity assessment of **Fabric WULKAN – dyed, flame retardant, raw material: 100 % cotton, surface mass: (330 ± 10) g/m<sup>2</sup>, intended for protective clothing**, confirms meeting requirements of:

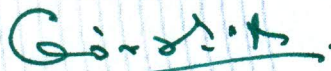
PN-EN ISO 13688:2013-12 [EN ISO 13688:2013] in scope of: p. 4.2, 5.3,

PN-EN ISO 11611:2015-11 [EN ISO 11611:2015] in scope of: p. 6.2, 6.3, 6.6, 6.7, 6.8, 6.9, 6.10,

PN-EN ISO 11612:2015-11 [EN ISO 11612:2015] in scope of: p. 6.2.1, 6.3, 6.4, 6.5.1, 6.5.2, 7.2, 7.3, 7.5, 7.6.

Report on the assessment of conformity made:

Michał Górski



Specialist for certification

Approved:

Anna Jakiel



CAB Manager

Łódź, 24<sup>th</sup> of July, 2017

Comments:

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