

LABORATORY OF TESTING TEXTILE RAW MATERIALS AND FABRICS
Testing Laboratory accredited by the Polish Centre for Accreditation

TEST CERTIFICATE NO. BM 12.7.2.1 / 2018 / B / A

declared raw material composition: 100% Polyester

- 3. Date of receiving material for testing:** 2018-05-21
- 4. Date of test performance:** 2018-06-20
- 5. Samples taken by:** correct sample size in appropriate state for testing, taken by the Client and delivered without the Sampling Protocol
- 6. Tests carried out according to:** methods presenting in testing table

Results of Laboratory Tests

see page 2/2

Test performed by: Elżbieta Olczak

1. Test results refer only to the tested material.
2. Neither of the parts of this Test Certificate can be copied without written permission of the Head of the Laboratory; it can be copied only as a whole document.
3. Test Certificate presents test results included within accreditation field of testing.
4. Test results not included in accreditation scope, if occur, are marked with *) in the test results table, at the parameter name.
5. Measurement uncertainty, if it is specified, has been determined according to the recommendations presented in document EA-4/16. Presented values of uncertainty constitute expanded uncertainty at 95% confidence level and coverage factor $k = 2$.

Certificate date: 2018-06-25

Number of Certificate copies: 2

Test Certificate handed to:

- 2) Laboratory of Testing Textile Raw Materials and Fabrics - 1 copy.

Certificate prepared by:

Patrycja Bąk

Person authorizing the Test Certificate:

Name and surname:

Function:

Signature

Zastępca Kierownika
Laboratorium Badań Surowców
i Włókien Włókienniczych
Instytut Włókiennictwa
mgr inż. Jerzy Andrysiak

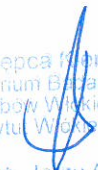
JT WŁÓKIENNICZWA
Laboratorium Badań Surowców
i Włókien Włókienniczych
Instytut Włókiennictwa
92-103 Łódź, ul. Brzezinska 5/15

TEST CERTIFICATE NO. BM 12.7.2.1 / 2018 / B / A

Parameter		Value	Remarks
Propensity to surface fuzzing and pilling, grade	<i>the number of rubs</i> 500	5	PN-EN ISO 12945-2:2002 (modified Martindale method) the conditioned sample, the abradant: the standard woolen fabric; mass of weight: 415 ± 2 g;
	1 000	5	
	2 000	5 No change	
	5 000	5	
<u>Evaluation</u> according to PN-EN 14465:2005+A1:2007: A category: grade ≥ 4 – 5; B category: grade 4; C category: grade 3 – 4; D category: grade 3			

_____ **The end of Test Certificate** _____

Person authorizing the Test Certificate


Zastępca Głównika
Laboratorium Badań Surowców
i Wytwarzania Włókna
Instytut Włókiennictwa
mgr inż. Jerzy Andrysiak

**Laboratory of Testing
Textile Raw Materials and Fabrics**

92-103 Łódź, 5/15 Brzezinska Str., phone 48 42 6163142, fax 48 42 6792638

90-520 Łódź, 118 Gdanska Str., phone 48 42 2534419, fax 48 42 2534490

e-mail: bwitkowska@iw.lodz.pl, jandrysiak@iw.lodz.pl

TEST CERTIFICATE NO. BM 12.7.2.2 / 2018 / B

2. **declared raw material composition: 100% Polyester.**
3. **Date of receiving material for testing: 2018-05-21**
4. **Date of test performance: 2018-06-21**
5. **Samples taken by:** correct sample size in appropriate state for testing, taken by the Client and delivered without the Sampling Protocol
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Results of Laboratory Tests

see page 2/2

Test performed by: Elżbieta Olczak

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Signature:

Zastępca Kierownika
Laboratorium Badań Surowców
i Wyrobów Włókienniczych
Instytut Włókiennictwa

mgr inż. Jerzy Andrysiak

INSTYTUT WŁÓKIENICTWA
Laboratorium Badań Surowców
i Wyrobów Włókienniczych
92-103 Łódź, ul. Brzezinska 5/15

TEST CERTIFICATE NO. BM 12.7.2.2 / 2018 / B

Parameter	Value	Remarks
Seam slippage resistance, mm: <u>Warp</u> The mean value of seam slippage resistance for warp direction, mm - individual results, mm <u>Weft</u> The mean value of seam slippage resistance for weft direction, mm - individual results, mm	3 2,5; 2,5; 2,5; 4; 2 3 2,5; 2,5; 2,5; 2,5; 3	PN-EN ISO 13936-2:2005 the conditioned sample tensile tester: Hounsfield H50 KM, testing force: 180 N, 100% PES sewing threads (74 ± 5) tex, the number of sewing needle: 110 the number of stitch: 32±2/100 mm rate of extension: 50 mm/min. number of test specimens: 5
Evaluation: according to PN-EN 14465:2005 + A1:2007 requirements level: A category: ≤ 4 mm; B category: ≤ 6 mm; C category: ≤ 8 mm		

_____ The end of Test Certificate _____

Person authorizing the Test Certificate

Zastępca Kierownika
 Laboratorium Białek Surowców
 i Wyrobów Włókienniczych
 Instytut Włókiennictwa
 mgr inż. Jerzy Andrysiak

LABORATORY OF TESTING TEXTILE RAW MATERIALS AND FABRICS
Testing Laboratory accredited by the Polish Centre for Accreditation

TEST CERTIFICATE NO. BM 12.7.2.3 / 2018 / B / A

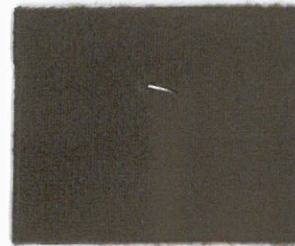
declared raw material composition: 100% Polyester

- 3. Date of receiving material for testing:** 2018-05-21
- 4. Date of test performance:** 2018-06-04÷07
- 5. Samples taken by:** correct sample size in appropriate state for testing, taken by the Client and delivered without the Sampling Protocol
- 6. Tests carried out according to:** methods presenting in testing table

Results of Laboratory Tests

see page 2/2

Test performed by: Elżbieta Olczak



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Certificate date: 2018-06-25

Number of Certificate copies: 2

Test Certificate handed to:

- 2) Laboratory of Testing Textile Raw Materials and Fabrics - 1 copy

Certificate prepared by:

Patrycja Bąk

Person authorizing the Test Certificate:

Name and surname:

Function:

Signature

Zastępca Merownika
Laboratorium Badań Surowców
i Wytrobów Włókienniczych
Instytut Włókiennictwa
mgr inż. Jerzy Andrysiak

INSTYTUT WŁÓKIENICTWA
Laboratorium Badań Surowców
i Wytrobów Włókienniczych
92-103 Łódź, ul. Brzezinska 5/15

TEST CERTIFICATE NO. BM 12.7.2.3 / 2018 / B / A

Parameter		Value	Remarks
Abrasion resistance, number of rubs	color change after 3 000 rubs, grade of grey scale	4	PN-EN ISO 12947-2:2017-02 + PN-EN 14465:2005+A1:2007, Annex A the conditioned sample, the abradant: the standard woolen fabric, the nominal pressure used in the test: 12 kPa, magnification factor in the magnifying device: 8. <u>Criterion of destruction of the testing specimens in accordance with that standard:</u> cut pile fabric – pile spots of 5 mm ² are fully worn off without any damage to the rows and columns in knitted fabric.
	1 specimen	60 000	
	2 specimen	70 000	
	3 specimen	60 000	
	4 specimen	70 000	
	Total abrasion resistance (the lowest individual result)	60 000	
Evaluation: according to PN-EN 14465:2005 + A1:2007: A category: number of rubs $\geq$ 45 000 rubs, B category: number of rubs: 25 000 ÷ 40 000, C category: number of rubs: 10 000 ÷ 20 000			

_____ **The end of Test Certificate** _____

Person authorizing the Test Certificate

Zastępca Kierownika
 Laboratorium Badań Surowców
 i Wytrobów Włókienniczych
 Instytut Włókiennictwa
 mgr inż. Jerzy Andrysiak

Laboratory of Chemical Testing and Instrumental Analysis

92-103 Lodz, 5/15 Brzezinska Str.
phone no. +48 42 6163130 (120, 128), fax +48 42 6163131
e-mail: jpiestrzeniewicz@iw.lodz.pl, labchem@iw.lodz.pl

Lódź 25th of June 2018

L - 234/2018

TEST CERTIFICATE No BCH 211/507/2018/A

1.

declared material composition 100% polyester

3. **Date of receiving sample for testing:** 23.05.2018
4. **Date of the tests conducting:** 04.06. - 22.06.2018
5. **Sampling:** sample in a proper size, in a proper condition for research, supplied by the client

RESULTS OF THE TESTS

Tested feature	Results of the test ¹⁾ [degree]	Reference dokument	Technical specifications	Level of requirements for categories according to PN-EN 14465:2005 + A1:2007		
				A	B	C
Colour fastness to rubbing:			<u>Acclimatization conditions:</u> temperature: (20,0±2)°C; relative humidity: (65,0±2)%; time: 4h;			
- Dry wale	a/ 4	PN-EN ISO 105-X12:2016-08	<u>Test conditions:</u> ambient temperature; rubbing pick: Ø 16±0,1mm; push: 9±0,2 N; degree of moisturising of the rubbing cotton fabric: 100%	≥ 4-5	≥ 4	
- course	a/ 4					
- Wet wale	a/ 4					
- course	a/ 4					
				≥ 4		

¹⁾ Colour fastness according to "Grey scale", indicator "5" means – no change in colour, indicator "1" means – big change in colour

a) staining rubbing to cotton

Remarks:

1. In accordance with ISO ILAC-IAF (January 2009) Communicate available on www.pca.gov.pl, laboratory accreditation referring to ISO/IEC 17025:2005 means fulfilling the demands concerning technical laboratory competence and managing system, which are required to ensure technical reliable results of the tests.
2. Test results refer only to the tested material.
3. Neither of the parts of this test certificate can be copied without written permission of the Head of the Laboratory.
4. Total number of pages of the test certificate 1.

Test authorized by:

LABORATORIUM BADAŃ CHEMICZNYCH
I ANALIZ INSTRUMENTALNYCH
KIEROWNIK TECHNICZNY
ds. Prac w Analiz Instrumentalnych

mgr inż. Agnieszka Lisiak-Kucińska

Confirmed by:

LABORATORIUM BADAŃ CHEMICZNYCH
I ANALIZ INSTRUMENTALNYCH
KIEROWNIK

mgr inż. Jerzy Piastreniewicz

Number of copies: 3

The test certificate receive:

- Customer – 1 copy
- IW – Laboratory of Chemical Testing and Instrumental Analysis – 1 copy

**Laboratory of Chemical Testing
and Instrumental Analysis**

92-103 Lodz, 5/15 Brzezinska Str.
phone no. +48 42 6163130 (120, 128), fax +48 42 6163131
e-mail: jpiestrzeniewicz@iw.lodz.pl, labchem@iw.lodz.pl

Lódź 25th of June 2018

L - 234/2018

TEST CERTIFICATE No BCH 211/507/2018/A/1

declared material composition 100% polyester

3. **Date of receiving sample for testing:** 23.05.2018
4. **Date of the tests conducting:** 04.06. - 22.06.2018
5. **Sampling:** sample in a proper size, in a proper condition for research, supplied by the client

RESULTS OF THE TESTS

Tested feature	Results of the test ¹⁾ [degree]	Reference dokument	Technical specifications	Level of requirements for categories according to PN-EN 14465:2005 + A1:2007		
				A	B	C
Colour fastness to: - artificial light	a/ 4	PN-EN ISO 105-B02:2014-11 Method 2	Device: Xenotest Alpha LM <u>Light conditions:</u> - wavelength: 380-750 nm - filters: 7 IR - BST temperature = 47 ± 3 °C - chamber temperature: 45 ± 3 °C - RH = 40% Estimation: Multilight chamber, light D65	≥ 6	≥ 5	≥ 4

¹⁾ Colour fastness according to "Blue scale", indicator "8" means – no change in colour, indicator "1" means – big change in colour
a/ change of colour

Remarks:

1. In accordance with ISO ILAC-IAF (January 2009) Communicate available on www.pca.gov.pl, laboratory accreditation referring to ISO/IEC 17025:2005 means fulfilling the demands concerning technical laboratory competence and managing system, which are required to ensure technical reliable results of the tests.
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4. Total number of pages of the test certificate 1.

Test authorized by:

LABORATORIUM BADAŃ CHEMICZNYCH
I ANALIZ INSTRUMENTALNYCH
KIEROWNIK TECHNICZNY
ds. Bad. i Instrumentalnych

mgr inż. Agnieszka Lisiak-Kucińska

Confirmed by:

LABORATORIUM BADAŃ CHEMICZNYCH
I ANALIZ INSTRUMENTALNYCH
KIEROWNIK

mgr inż. Jarzy Piestrzeniewicz

Number of copies: 3

The test certificate receive:

- Customer – 1 copy
- IW – Laboratory of Chemical Testing and Instrumental Analysis – 1 copy
- IW – Laboratory of Testing Textile Raw Materials and Fabrics – 1 copy

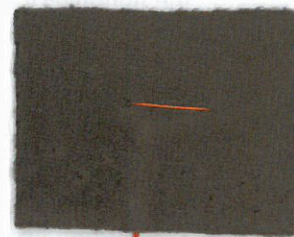
TEST CERTIFICATE ON FLAMMABILITY TESTING OF UPHOLSTERY COMPOSITE

No 241 / BP / 18

Test method:

PN-EN 1021-1:2014-12 Furniture. Assessment of the ignitability of upholstered furniture. Part 1: Ignition source smouldering cigarette.

Orderer:



Subject of testing:

Upholstery composite:

- T-3037 polyurethane foam, self-extinguished

Testing sample with the correct size, in appropriate state for testing,
supplied by the Orderer with its characteristic and without the Sampling Protocol.

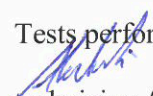
INSTYTUT WŁÓKIENNIC
LABORATORIUM
BADAŃ PALNOŚCI WYROBÓW
ul. Gdańska 118, 90-520 Łódź

Results of testing:

Standard	Test method	Result
PN-EN 1021-1:2014-12	Ignition source: smouldering cigarette	Neither progressive smouldering ignition nor flaming ignition occurred.

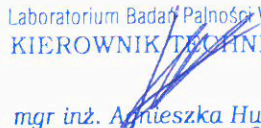
The above test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.

Tests performed by:


technician Andrzej Kubacki

Test Certificate authorized by

Laboratorium Badań Palności WYROBÓW
KIEROWNIK TECHNICZNY


mgr inż. Agnieszka Hulewicz
18. 06. 2018

Sample received on: 24.05.2018

Test performed on: 18.06.2018

NOTES:

1. The Testing results refer only to the tested sample.
2. Test Certificate consists of 2 pages.
3. Test Certificate must not be reproduced in another way, than as a whole without a prior written consent of the Testing Laboratory.
4. The Orderer using this Test Certificate is responsible for the conformity between the product and sample submitted for testing.

DETAILED TESTING RESULTSClimate conditions: temperature $(23 \pm 2) ^\circ\text{C}$; humidity $(50 \pm 5) \%$; time 24 hTesting conditions: temperature $24 ^\circ\text{C}$; humidity 53 %**Preparation of test samples:**

the upholstery fabric, exposed to wetting in water and drying procedure, in accordance with Appendix D of the PN-EN 1021-1:2014-12 standard.

Upholstery composite characteristic:

Upholstery composite:

- T-3037 polyurethane foam, self-extinguished

Criteria		Cigarette			Remarks
		1	2	3	
Smouldering criteria	Unsafe escalating combustion	NO	NO	-	Maximum cigarette smouldering time: 17 minutes 44 seconds
	Test assembly consumed	NO	NO	-	
	Smoulders to extremities	NO	NO	-	
	Smoulders through thickness	NO	NO	-	
	Smoulders more than 1 hour	NO	NO	-	
	In final examination, presence of active smouldering	NO	NO	-	Maximum upholstery composite destruction:
Flaming criteria	Occurrence of flames	NO	NO	-	horizontal [mm]
					length width depth
					vertical [mm] length width depth
					72 10 10 69 17 7

Result of testing: Neither progressive smouldering ignition nor flaming ignition occurred.

END OF THE TEST CERTIFICATE

TEST CERTIFICATE ON FLAMMABILITY TESTING OF UPHOLSTERY COMPOSITE

No 241 / BP / 18

Test method:

PN-EN 1021-1:2014-12 Furniture. Assessment of the ignitability of upholstered furniture. Part 1: Ignition source smouldering cigarette.

Orderer:

Subject of testing:

Upholstery composite:

- T-3037 polyurethane foam, self-extinguished

Testing sample with the correct size, in appropriate state for testing,
supplied by the Orderer with its characteristic and without the Sampling Protocol.

Results of testing:

Standard	Test method	Result
PN-EN 1021-1:2014-12	Ignition source: smouldering cigarette	Neither progressive smouldering ignition nor flaming ignition occurred.

The above test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.

Tests performed by:

technician Andrzej Kubacki

Test Certificate authorized by

Laboratorium Badań Palności Wyrobów
KIEROWNIK TECHNICZNY

mgr inż. Agnieszka Hulewicz
18. 06. 2018

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	In final examination, presence of active smouldering	NO	NO	-	
Flaming criteria	Occurrence of flames	NO	NO	-	horizontal [mm]
					vertical [mm]
					length width depth length width depth
					72 10 10 69 17 7

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END OF THE TEST CERTIFICATE