

**Laboratory of Chemical Testing
and Instrumental Analysis**

The ŁUKASIEWICZ Research Network – Textile Research Institute,
92-103 Łódź, 5/15 Brzezinska Str.
phone no. +48 42 61-631-30 (128), fax +48 42 61-63-131
e-mail: piestrzeniewicz@iw.lodz.pl, alisiak@iw.lodz.pl

Łódź, 26th of January 2021

L-4/2021

TEST CERTIFICATE No BCH 3/10/2021/A

1. Name and address of the principal ^{N)}:
2. Subject of study ^{N)}: Sample of furniture upholstery fabric MIU – raw material
composition: 100% Polyester
3. Date of receiving sample for testing: 05.01.2021
4. Date of the test conducting: 05.01 – 26.01.2021
5. Sampling : sample in a proper size, in a proper condition for research, supplied by
the customer

RESULTS OF THE TESTS

Tested feature	Result of the test [degree] ¹⁾	Reference document	Test conditions	Level of requirements for categories according to PN- EN 14465:2005 + A1:2007		
				A	B	C
Colourfastness to: - artificial light	a/ 6	PN-EN ISO 105- B02:2014-11 Metoda 2	Device: Xenotest Alpha LM Light conditions: A1 Radiation measurement in the range (300-400) nm Sample rotation was not used	≥ 6	≥ 5	≥ 4

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

Remarks:

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.
3. ^{N)} data provided by the principal/customer
4. Total number of pages of the test certificate: 1.

Test authorized by:

Laboratorium Badań Chemicznych
i Analiz Instrumentalnych
STARSZY SPECJALISTA ds. BADAWCZYCH
Z-CIA KIEROWNIKA TECHNICZNEGO

mgr inż. Zdzisława Mrozińska

Laboratorium Badań Chemicznych
i Analiz Instrumentalnych
LIDER ODSZARU
KIEROWNIK

mgr inż. Jerzy Piestrzeniewicz

Number of copies of the test certificate: 3

The Test Certificate receive:

- Customer – 2 copies
- The ŁUKASIEWICZ Research Network – Textile Research Institute – BCH – 1 copy

– THE END –

**Laboratory of Chemical Testing
and Instrumental Analysis**

The ŁUKASIEWICZ Research Network – Textile Research Institute,
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Łódź, 26th of January 2021

L-4/2021

TEST CERTIFICATE No BCH 3/10/2021/A/1

1. Name and address of the principal ^{N)}:

2. Subject of study ^{N)}:

Sample of furniture upholstery fabric MIU – raw material
composition: 100% Polyester

3. Date of receiving sample for testing:

05.01.2021

4. Date of the test conducting:

05.01 – 26.01.2021

5. Sampling :

sample in a proper size, in a proper condition for research, supplied by
the customer

RESULTS OF THE TESTS

Tested feature	Result of the test [degree] ¹⁾	Reference document	Test conditions	Level of requirements for categories according to PN-EN 14465:2005 + A1:2007		
				A	B	C
Colour fastness to rubbing:						
- Dry						
<i>longitudinal direction</i>	a/ 5	PN-EN ISO 105- X12:2016-08	Acclimatization time: 4h Temperature of the test: 17,3°C; Humidity of the test: 37,7%; rubbing pick: Ø 16±0,1mm; push: 9±0,2 N	≥ 4-5	4	3-4
<i>cross direction</i>	a/ 5					
- Wet						
<i>longitudinal direction</i>	a/ 4-5					
<i>cross direction</i>	a/ 4-5			≥ 3-4	3	2-3

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

a/ staining of the cotton rubbing fabric

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Test authorized by:

**Laboratorium Badań Chemicznych
i Analiz Instrumentalnych**
STARSZY SPECJALISTA ds. BADAWCZYCH
Z-CA KIEROWNIKA TECHNICZNEGO

mgr inż. Zdzisław Mrozińska

Confirmed by:
**Laboratorium Badań Chemicznych
i Analiz Instrumentalnych**
LIDER OBSZARU
KIEROWNIK

mgr inż. Jerzy Piestrzeniewicz

Number of copies of the test certificate: 3

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– THE END –

**Łukasiewicz**

Instytut Włókiennictwa

Laboratory of Flammability TestingThe Łukasiewicz Research Network - Textile Research Institute,
92-103 Łódź, 5/15 Brzezinska Str.

Laboratory: 90-520 Łódź, 118 Gdańska Str., phone 48 42 2534435 (436), fax 48 42 2534490

e-mail: mszejna@iw.lodz.pl

AB 029

TEST CERTIFICATE ON FLAMMABILITY TESTING OF UPHOLSTERY COMPOSITE

No. 5/BP/21

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:

- upholstery fabric named MIU, composition: 100% Polyester,
- T-3037 polyurethane foam, self-extinguish

Testing sample with the correct size, in appropriate state for testing,
supplied by the Orderer with its characteristic and without the Sampling Protocol.Sieć Badawcza Łukasiewicz-
Instytut Włókiennictwa
LABORATORIUM BADAŃ
PALNOŚCI WYROBÓW
90-520 Łódź, Gdańska 118
tel. 42 25 34 435, fax 42 25 34 490**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:

Kostanek
Krzysztof Kostanek Ph.D.

Test Certificate authorized by

Mszejna
mgr inż. Małgorzata Szejna

Sample received on: 07.01.2021

Test performed on: 29.01.2021

Test Certificate issued on: 29.01.2021

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.
5. *Data provided by the Customer.

The Testing Laboratory accredited by the Polish Centre for Accreditation (PCA), No AB 029.

DETAILED TESTING RESULTS

Climate conditions: temperature $(23 \pm 2) ^\circ\text{C}$; humidity $(50 \pm 5) \%$; time 24 h
 Testing conditions: temperature 22°C ; humidity 30 %

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:

- upholstery fabric named MIU, composition: 100% Polyester,
- T-3037 polyurethane foam, self-extinguish.

Criteria		Cigarette			Remarks					
		1	2	3						
Smouldering criteria	Unsafe escalating combustion	NO	NO	-	Maximum cigarette smouldering time: 13 minutes 11 seconds					
	Test assembly consumed	NO	NO	-						
	Smoulders to extremities	NO	NO	-						
	Smoulders through thickness	NO	NO	-	Maximum upholstery composite destruction:					
	Smoulders more than 1 hour	NO	NO	-						
	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	14	9	66	14	5

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

END OF THE TEST CERTIFICATE



Łukasiewicz

**Instytut Włókiennictwa
Laboratory of Testing Raw Materials, Textiles
and Electrostatic Properties**

Łukasiewicz Research Network – Textile Research Institute,
92-103 Łódź, 5/15 Brzezińska Str., phone 48 42 6163142, fax 48 42 6792638
90-520 Łódź, 118 Gdańska Str., phone 48 42 2534419, fax 48 42 2534490
e-mail: beata.witkowska@iw.lukasiewicz.gov.pl,
jerzy.andrysiak@iw.lukasiewicz.gov.pl



AB 164

Testing Laboratory accredited by the Polish Centre for Accreditation

TEST REPORT NO. BM 79.1 / 2021 / B / A

2. **Name and description of tested material:** the sample: ^N the upholstery woven fabric MIU, declared raw material composition: 100% Polyester.
3. **Date of receiving material for testing:** 2021-02-10
4. **Date of test performance:** 2021-02-18
5. **Samples taken by:** ^N 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: Małgorzata Frolow

1. Test results refer only to the tested material.
2. Neither of the parts of this Test Report can be copied without written permission of the Head of the Laboratory; it can be copied only as a whole document.
3. Test Report 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. Test Report consists of test results carried out in location 90-520 Łódź, ul. Gdańska 118 (G) / 92-103 Łódź, ul. Brzezińska 5/15 (B).
6. Measurement uncertainty, if it is specified, has been determined according to the recommendations presented in EA-4/16. Presented values of uncertainty constitute expanded uncertainty at 95% confidence level and coverage factor $k = 2$.
7. Laboratory uses the requirements of ILAC-G8:09/2019. The conformity statement of test result with requirements specification takes place, when the test results together with expanded uncertainty does not exceed the tolerance limit given in specification. The conformity statement's rules given by Client could be allowed.

Test Report date: 2021-02-23

Number of Test Report 's copies: 2

Test Report handed to:

2) Laboratory for Testing Raw Materials, Textiles and Electrostatic Properties (location: 5/15 Brzezińska str.) - 1 copy.

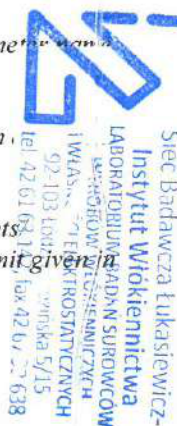
Test Report prepared by:

Patrycja Bąk

Person authorizing the Test Report:

Laboratorium Badań Surowców, Włókien
Włókienniczych i Własności Elektrostatycznych
GŁÓWNY SPECJALISTA
Z-CIA KIEROWNIKA

mgr inż. Jerzy Andrysiak



TEST REPORT NO. BM 79.1 / 2021 / B / A

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	4 ± 0 4; 3; 4; 4; 4 4 ± 0 3; 4; 4; 4; 4	PN-EN ISO 13936-2:2005 sample conditioned according to PN-EN ISO 139:2006 + A1:2012, temp. 20° C ± 2 °C, RH: 65% ± 4%, 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
<u>Evaluation:</u> according to PN-EN 14465:2005 + A1:2007 requirements level: A category: ≤ 4 mm; B category: ≤ 6 mm; C category: ≤ 8 mm		

Person authorizing the Test Report

Laboratorium Badań Surowców, Wyrobów
 Włókienniczych i Własności Elektrostatycznych
 GŁÓWNY SPECJALISTA
 Z-CIA KIEROWNIKA

mgr inż. Jerzy Andrysiak

_____ **The end of Test Report** _____



Łukasiewicz

Instytut Włókiennictwa
**Laboratory of Testing Raw Materials, Textiles
and Electrostatic Properties**

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92-103 Łódź, 5/15 Brzezińska Str., phone 48 42 6163142, fax 48 42 6792638
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e-mail: beata.witkowska@iw.lukasiewicz.gov.pl,
jerzy.andrysiak@iw.lukasiewicz.gov.pl



AB 164

Testing Laboratory accredited by the Polish Centre for Accreditation

TEST REPORT NO. BM 79.2 / 2021 / B / A

2. **Name and description of tested material:** the sample: ^X the upholstery woven fabric MIU, declared raw material composition: 100% Polyester.
3. **Date of receiving material for testing:** 2021-02-10
4. **Date of test performance:** 2021-02-16
5. **Samples taken by:** ^X 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: Małgorzata Frołow

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6. 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 $k = 2$.
7. Laboratory uses the requirements of ILAC-G8:09/2019. The conformity statement of test result with requirements/specification takes place, when the test results together with expanded uncertainty does not exceed the tolerance limit given in specification. The conformity statement's rules given by Client could be allowed.

Test Report date: 2021-02-23

Number of Test Report 's copies: 2

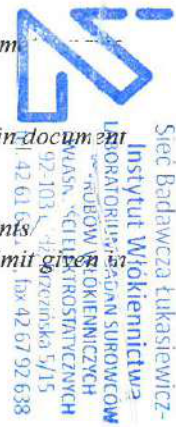
Test Report handed to:

2) Laboratory for Testing Raw Materials, Textiles and Electrostatic Properties (location: 5/15 Brzezińska str.) - 1 copy.

Test Report prepared by:
Patrycja Bąk

Person authorizing the Test Report:

Laboratorium Badań Surowców, Wyrobów
Włókienniczych i Własności Elektrostatycznych
GŁÓWNY SPECJALISTA
Z-CIA KIEROWNIKA
mgr inż. Jerzy Andrysiak



TEST REPORT NO. BM 79.2 / 2021 / B / A

Parameter		Value	Remarks
Propensity to surface fuzzing and pilling, grade	the number of rubs		PN-EN ISO 12945-2:2002 (modified Martindale method) sample conditioned according to PN-EN ISO 139:2006 + A1:2012, temp. 20° C ± 2 °C, RH: 65% ± 4%, number of test specimens: 3, number of evaluators: 3, the abradant: the standard woolen fabric; mass of weight: (415 ± 2) g.
	500	4 – 5	
	1 000	4 – 5	
	2 000	4 – 5 Slight surface fuzzing	
	5 000	4 - 5	
Evaluation 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			

Person authorizing the Test Report

Laboratorium Badań Surowców, Wyrobów
 Włókienniczych i Własności Elektrostatycznych
 GŁÓWNY SPECJALISTA
 Z-CIA KIEROWNIKA
 mgr inż. Jerzy Andrysiak

_____ The end of Test Report _____



Łukasiewicz

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Laboratory of Testing Raw Materials, Textiles
and Electrostatic Properties**

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e-mail: beata.witkowska@iw.lukasiewicz.gov.pl,
jerzy.andrysiak@iw.lukasiewicz.gov.pl



AB 164

Testing Laboratory accredited by the Polish Centre for Accreditation

TEST REPORT NO. BM 79.3 / 2021 / B / A

declared raw material composition: 100% Polyester.

3. **Date of receiving material for testing:** 2021-02-10
4. **Date of test performance:** 2021-02-11 ÷ 19
5. **Samples taken by:** ^N 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: Małgorzata Frołow

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Test Report date: 2021-02-23

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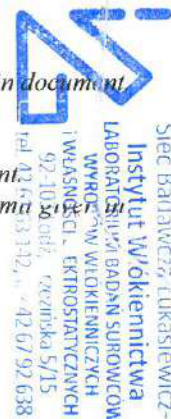
Test Report handed to:

- 2) Laboratory of Testing Raw Materials, Textiles and Electrostatic Properties (location: 5/15 Brzezińska str.) - 1 copy.

Test Report prepared by:
Patrycja Bąk

Person authorizing the Test Report:

Laboratorium Badań Surowców, Wyrobów
Włókienniczych i Własności Elektrostatycznych
GŁÓWNY SPECJALISTA
Z-CIA KIEROWNIKA
mgr inż. Jerzy Andrysiak



TEST REPORT NO. BM 79.3 / 2021 / B / A

Parameter		Value	Remarks
Abrasion resistance, number of rubs	color change after 3 000 rubs, grade of grey scale	4 - 5	PN-EN ISO 12947-2:2017-02 + PN-EN 14465:2005+A1:2007, Annex A
	1 specimen	90 000	sample conditioned according to PN-EN ISO 139:2006 + A1:2012, temp. 20° C ± 2 °C, RH: 65% ± 4%, the abradant: the standard woolen fabric, the nominal pressure used in the test: 12 kPa, magnification factor in the magnifying device: 8. Criterion of destruction of the testing specimens in accordance with that standard: chenille fabric – three threads are completely broken or when the chenille pile is fully worn off (whatever comes first). Three threads are completely broken in this chenille fabric.
	2 specimen	90 000	
	3 specimen	90 000	
	4 specimen	90 000	
	Total abrasion resistance (the lowest individual result)	90 000	
Evaluation: according to PN-EN 14465:2005 + A1:2007: A category: number of rubs ≥ 35 000 rubs, B category: number of rubs: 12 000 ÷ 30 000, C category: number of rubs: 4 000 ÷ 10 000			

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Włókienniczych i Własności Elektrostatycznych
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The end of Test Report