



Łukasiewicz

Instytut Włókiennictwa

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

The 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: bwitkowska@iw.lodz.pl, jandrzyak@iw.lodz.pl



AB 164

Testing Laboratory accredited by the Polish Centre for Accreditation

TEST REPORT NO. 147 / 2020 / B / A

2. **Name and description of tested material:** the sample: ^ the upholstery woven fabric AURORA, declared raw material composition: 100% Polyester.
3. **Date of receiving material for testing:** 2020-03-13
4. **Date of test performance:** 2020-03-20
5. **Samples taken by:** X correct sample in appropriate state for testing, taken by the Client and delivered without the Sampling Protocol
6. **Tests carried out according to:** met 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 Report can be copied only as a whole document.
3. Test Report presents test results included in accreditation field of testing.
4. Test results not included in accreditation field of testing occur, are marked with * in the test results table, at the parameter name.
5. Test Report consists of test results carried out in the location 90-520 Łódź, ul. Gdańska 118 (G) /
6. Measurement uncertainty, if it is specified in the test results table, is determined according to the recommendations presented in document EA-4/16. Presented values of uncertainty are expanded uncertainty at 95% confidence level
7. Laboratory uses the requirements of ILA: when the test result is given in specification. The conformity assessment is carried out according to the rules given by Client could be allowed.

Test Report date: 2020-03-24

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:

Person authorizing the Test Report:

LABORATORIUM BADAŃ SUROWCÓW,
WŁÓKNOBÓW WŁÓKIENNICZYCH
I WŁASNOŚCI ELEKTROSTATYCZNYCH
ZASTĘPCA KIEROWNIKA

mgr inż. Jerzy Andrzyak

TEST REPORT NO. BM 147 / 2020 / 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; 3,5; 3,5; 4; 4 4 ± 0 3,5; 3,5; 4; 4; 4	PN-EN ISO 13936-2:2005 the conditioned sample, 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		

_____ **The end of Test Report** _____

Person authorizing the Test Report

LABORATORIUM BADAŃ SUROWCÓW,
 WYROBÓW WŁÓKIENNICZYCH
 I WŁAŚNOŚCI ELEKTROSTATYCZNYCH
 ZASTĘPCA KIEROWNIKA

mgr inż. Jerzy Andrysiak

Laboratory of Testing

Textile Raw Materials and Fabrics

The Łukasiewicz Research Network – Textile Research Institute,
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 613 / 2019 / B

2. **Name and description of tested material:** the sample: the upholstery fabric AURORA, declared raw material composition: 100% Polyester
3. **Date of receiving material for testing:** 2019-09-09
4. **Date of test performance:** 2019-09-19
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. *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: 2019-10-09

Number of Certificate copies: 2

Test Certificate handed to:

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

Certificate prepared by:

Jerzy Andrysiak

Person authorizing the Test Certificate:

Name and surname:

Function:

Signature:

Zastępca Kierownika
Laboratorium Badań Surowców
i Włókienicznych

mgr inż. Jerzy Andrysiak

Sieć Badań
INSTYTUT ŁUKASIEWICZ
Laboratorium Badań Surowców
i Włókienicznych
92-103 Łódź, ul. Brzezinska 5/15

TEST CERTIFICATE NO. BM 613 / 2019 / B

Parameter	Value	Remarks
The mean of bursting strength, kPa	560 ± 9	PN-EN ISO 13938-1:2002 (hydraulic method) the conditioned sample, test area: 50 cm ² , time at burst of test specimen: (20 ± 5) s
The mean of height at burst, mm	30 ± 1	
Evaluation according to PN-EN 14465:2005+A1:2007: A category: ≥ 600 kPa; B category: ≥ 400 kPa ; C category: ≥ 200 kPa		

_____ The end of Test Certificate _____

Person authorizing the Test Certificate

Zastępca Kierownika
Laboratorium Badań Surowców
i Wytrobów Włókienniczych

mgr inż. Jerzy Andrysiak

**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 6163130 (128), fax +48 42 6163131
 e-mail: piestrzeniewicz@iw.lodz.pl, alisiak@iw.lodz.pl



AB 077

Łódź, 8th of October 2019

L - 439/2019

TEST CERTIFICATE no BCH 389/976/2019/A/1

- Name and address of the principal ^{X)}:**
- Name and description of tested sample ^{X)}:** Sample no 1 – furniture upholstery fabric AURORA
- Date of receiving sample for testing:** 10.09.2019
- Date of performance of testing:** 19.09. – 07.10.2019
- 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 [degree] ¹⁾	Reference document	Technical specifications	Level of requirements for categories according to PN-14465:2005 + A1:2007		
				A	B	C
Colour fastness to rubbing:			<u>Acclimatization conditions:</u> temperature: (20,0±2)°C; relative humidity: (65,0±4)%; time: 4h;			
- Dry			<u>Test conditions:</u> ambient temperature			
<i>longitudinal direction</i>	a/ 4-5	PN-EN ISO 105-X12:2016-08	rubbing pick: Ø 16±0,1mm;	≥ 4-5	4	3-4
<i>cross direction</i>	a/ 4-5		push: 9±0,2 N;			
- Wet			degree of moisturising of the			
<i>longitudinal direction</i>	a/ 4-5		rubbing cotton fabric: 100%	≥ 3-4	3	2-3
<i>cross direction</i>	a/ 4-5					

¹⁾ Colour fastness according to "Grey scale", indicator "5" means – no change in colour, indicator "1" means – big change in colour
 a/ the staining of the cotton rubbing fabric

Remarks:

- Test results refer only to the tested material.
- Neither of the parts of this test certificate can be copied without written permission of the Head of the Laboratory.
- ^{X)} data provided by the principal/customer.
^{Y)} The decision-making principle in the event that the principal requires a statement of compliance:
 - in accordance with the Principle of Acceptance described in Procedure No. 7.1:
Acceptance (compliant) - the results are within the tolerance limit. The risk of incorrect acceptance is up to 50% in the case of results close to the tolerance limit,
Rejection (incompatible) - the results obtained are outside the tolerance limit. The risk of incorrect rejection is 50% in the case of results close to the tolerance limit
^{Z)} The decision-making principle specified by the principal/customer.
- Total number of pages of the test certificate: 1.

Test authorized by:
 Zdzisława Mrozińska, M.Sc. Eng.

Confirmed by:

LABORATORIUM BADAŃ CHEMICZNYCH
 I ANALIZ INSTRUMENTALNYCH
 KIEROWNIK

mgr inż. Jerzy Piestrzeniewicz

Number of copies: 4

The test certificate receive:

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

**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 6163130 (128), fax +48 42 6163131
 e-mail: jpiestrzeniewicz@iw.lodz.pl, alisiak@iw.lodz.pl



AB 077

Łódź, 8th of October 2019

L - 439/2019

TEST CERTIFICATE no BCH 389/976/2019/A

1. Name and address of the principal ^{X)}:
2. Name and description of tested sample ^{X)}: Sample no 1 – furniture upholstery fabric AURORA
3. Date of receiving sample for testing: 10.09.2019
4. Date of performance of testing: 19.09. – 07.10.2019
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 [degree] ¹⁾	Reference document	Technical specifications	Level of requirements for categories according to PN-EN 14465:2005 + A1:2007		
				A	B	C
Colourfastness to: - artificial light	a/ 5-6	PN-EN ISO 105-B02:2014-11 Method 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

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. ^{X)} data provided by the principal/customer.
 - ^{Y)} The decision-making principle in the event that the principal requires a statement of compliance:
 - in accordance with the Principle of Acceptance described in Procedure No. 7.1:
 - Acceptance** (compliant) - the results are within the tolerance limit. The risk of incorrect acceptance is up to 50% in the case of results close to the tolerance limit,
 - Rejection** (incompatible) - the results obtained are outside the tolerance limit. The risk of incorrect rejection is 50% in the case of results close to the tolerance limit
 - ^{Z)} The decision-making principle specified by the principal/customer.
4. Total number of pages of the test certificate: 1.

Test authorized by:
 Zdzisława Mrozińska, M.Sc. Eng.

Confirmed by:

LABORATORIUM BADAŃ CHEMICZNYCH
 I ANALIZ INSTRUMENTALNYCH
 KIEROWNIK
 mgr inż. Jerzy Piestrzeniewicz

Number of copies: 4

The test certificate receive:

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

TEST CERTIFICATE ON FLAMMABILITY TESTING OF UPHOLSTERY COMPOSITE

No399 / BP / 19

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 AURORA, 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.

**Stół Badawczy Łukasiewicz-
INSTYTUT WŁOKIENNICTWA
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:

Kostanek
Krzysztof Kostanek Ph.D.

Test Certificate authorized by

Sample received on: 11.08.2019
Test performed on: 20.09.2019
Test Certificate issued on: 23.09.2019

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 RESULTSClimate conditions: temperature $(23 \pm 2) ^\circ\text{C}$; humidity $(50 \pm 5) \%$; time 24 hTesting conditions: temperature 21°C ; humidity 39 %**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 AURORA, 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: 14 minutes 56 seconds					
	Test assembly consumed	NO	NO	-						
	Smoulders to extremities	NO	NO	-						
	Smoulders through thickness	NO	NO	-						
	Smoulders more than 1 hour	NO	NO	-	Maximum upholstery composite destruction:					
	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
					71	15	10	70	15	5

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

END OF THE TEST CERTIFICATE



AB 164

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

TEST CERTIFICATE NO. BM 613 / 2019 / B / A

- 2. Name and description of tested material:** the sample: **the upholstery fabric AURORA**, declared raw material composition: 100% Polyester
- 3. Date of receiving material for testing:** 2019-03-28
- 4. Date of test performance:** 2019-09-24÷27
- 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

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: 2019-10-09

Number of Certificate copies: 2

Test Certificate handed to:

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

Certificate prepared by:

Jerzy Andrysiak

Person authorizing the Test Certificate:

Name and surname:

Function:

Signature:

Zastępca Kierownika
Laboratorium Badań Surowców
i Włókien Włókienniczych

mgr inż. Jerzy Andrysiak

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

TEST CERTIFICATE NO. BM 613 / 2019 / 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 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. Criterion of destruction of the testing specimens in accordance with that standard: complete worn off chenille
	1 specimen	50 000	
	2 specimen	50 000	
	3 specimen	50 000	
	4 specimen	50 000	
Total abrasion resistance (the lowest individual result)		50 000	
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 Wyrobów Włókienniczych

mgr inż. Jerzy Andrysiak



AB 164

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

TEST CERTIFICATE NO. BM 613 / 2019 / B / A

- 2. Name and description of tested material:** the sample: **the upholstery fabric AURORA**, declared raw material composition: 100% Polyester
- 3. Date of receiving material for testing:** 2019-09-09
- 4. Date of test performance:** 2019-10-04
- 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

Test performed by: Elżbieta Olczak

- 1. Test results refer only to the tested material.*
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Certificate date: 2019-10-09

Number of Certificate copies: 2

Test Certificate handed to:

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

Certificate prepared by:

Jerzy Andrysiak

Person authorizing the Test Certificate:

Name and surname:

Function:

Signature:

Zastępca Kierownika
Laboratorium Badań Surowców
i Wyrobów Włókienniczych

mgr inż. Jerzy Andrysiak

Sieć Badawcza Łukasiewicz-
INSTYTUT WŁÓKIENNICZWA
Laboratorium Badań Surowców
i Wyrobów Włókienniczych
ul. Brzezinska 5/15

TEST CERTIFICATE NO. BM 613 / 2019 / B / A

Parameter		Value	Remarks
Propensity to surface fuzzing and pilling, grade	the number of rubs 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	4 - 5 Slight surface fuzzing	
	5 000	4 - 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 Kierownika
Laboratorium Białych Surowców
i Włókien Włókienniczych

mgr inż. Jerzy Andrysiak

Laboratory of Testing

Textile Raw Materials and Fabrics

The Łukasiewicz Research Network – Textile Research Institute,

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 613 / 2019 / B

2. **Name and description of tested material:** the sample: : **the upholstery fabric AURORA**,
declared raw material composition: 100% Polyester
3. **Date of receiving material for testing:** 2019-09-09
4. **Date of test performance:** 2019-10-04
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: Elzbieta Olczak

1. *Test results refer only to the tested material.*
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Certificate date: 2019-10-09

Number of Certificate copies: 2

Test Certificate handed to:

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

Certificate prepared by:

Jerzy Andrysiak

Person authorizing the Test Certificate:

Name and surname:

Function:

Signature:

Zastępca Kierownika
Laboratorium Badań Surowców
i Wytrobów Włókienniczych

mgr inż. Jerzy Andrysiak

Sieć Ba
INSTYT
Laborat
i Wytrobów Włókienniczych
Łukasiewicz-
92-103 Łódź, ul. Brzezinska 5/15

TEST CERTIFICATE NO. BM 613 / 2019 / B

Parameter	Result	Test method
Resistance to drawing out the threads for longitudinal direction, degree	3-4	PN-79/P-04664 conditioned sample, device for testing resistance to drawing out the threads: Shirley ICI Mace snag tester, England, number of the template used for sewing: 2, number of the roller revolutions: 600, number of tested specimens: 2 for each direction
Resistance to drawing out the threads for cross direction, degree	3	<u>Assessment according to photographic standard:</u> degree 5: very good resistance to drawing out the threads (without puffs), degree 4: good resistance to drawing out the threads, degree 3: sufficient resistance to drawing out the threads, degree 2: insufficient resistance to drawing out the threads, degree 1: very poor resistance to drawing out the threads.

_____ The end of Test Certificate _____

Person authorizing the Test Certificate

Zastępca Kierownika
Laboratorium Badań Surowców
i Wyrobów Włókienniczych

mgr inż. Jerzy Andrysiak