



**Laboratorium Badań Surowców
i Wyróbów Włókienniczych**

Siedziba: ul. Brzezińska 5/15, 92-103 Łódź, tel. +48(0) 42 6163140
Siedziba: ul. Gdańska 118, 90-520 Łódź, tel. +48(0) 42 2534421



AB 164

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

TEST CERTIFICATE NO. BM 2.2.1.3 / 2015 / G / A

declared raw materials: **40% Wool, 30% Acryl, 20% Cotton, 10% Polyester**

3. **Date of receiving material for testing:** 2015-01-26
4. **Date of test performance:** 2015-01-28÷06-02
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: Ewa Gontarska M.Sc. Eng

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: 2015-02-09

Number of Certificate copies: 4

Test Certificate handed to:

- 2) Laboratory for Testing Textile Raw Materials and Fabrics (location: 5/15 Brzezińska str.) - 1 copy,
- 3) Laboratory for Testing Textile Raw Materials and Fabrics (location: 118 Gdańska str.) - 1 copy.

Certificate prepared by:

Izabela Jasinska, Ph.D.

Person authorizing the Test Certificate:

Surname and name: Beata Witkowska, Ph. D.

Function: Technical Head of Laboratory

Signature
Kierownik Techniczny
Laboratorium Badań Surowców
i Wyróbów Włókienniczych
siedziba ul. Gdańska 118
dr inż. Beata Witkowska

INSTYTUT WŁOKIENNICTWA
Laboratorium Badań Surowców
i Wyróbów Włókienniczych
92-103 Łódź, ul. Brzezińska 5/15
Siedziba Laboratorium
90-520 Łódź, ul. Gdańska 118

TEST CERTIFICATE NO. BM 2.2.1.3 / 2015 / G / A

Parameter		Value	Remarks
Abrasion resistance, number of rubs	color change after 3 000 rubs, grade of grey scale	5	PN-EN ISO 12947-2:2000 +AC:2006 + PN-EN 14465:2005+A1:2007 the abradant – the standard woollen fabric, the nominal pressure used in the test: 12 kPa, magnification factor in the magnifying device - 8, in holders used foam.
	1 specimen	10 000	
	2 specimen	10 000	
	3 specimen	10 000	
	4 specimen	12 000	
	Total abrasion resistance (the lowest individual result)	10 000	
Criterion of breakdown: flat woven fabric - three threads are completely broken.			

According to standard PN-EN 14465:2005+A1:2007 "Textiles. Upholstery fabrics. Specification and methods of test", **the upholstery fabric CLARK**, declared raw materials: **40% Wool, 30% Acryl, 20% Cotton, 10% Polyester** was classified as:
- Level C in reference to the abrasion resistance (Level C: 4 000÷10 000 rubs).

_____ **The end of Test Certificate** _____

Person authorizing the Test Certificate

Kierownik Techniczny
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i Wyrobów Włókienniczych
siedziba ul. Gdańska 118
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Results of Laboratory Tests

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Certificate prepared by:

Izabela Jasinska, Ph.D.

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Function: Technical Head of Laboratory

Signature

Kierownik Techniczny
Laboratorium Badań Surowców
i Wyrobów Włókienniczych
siedziba ul. Gdańska 118

dr inż. Beata Witkowska

TEST CERTIFICATE NO. BM 2.2.1.1 / 2015 / G / A

Parameter	Value / degree	Remarks
Colour fastness to light, degree	6-7	PN-EN ISO 105-B02:2013-08 Method 2 testing apparatus - Xenotest Alpha HE exposure conditions: standard atmosphere in accordance with point 7 of this standard, Assessment: comparison with blue woolen standard: <i>degree 1</i> - very low color fastness to light, <i>degree 8</i> - very high color fastness to light.

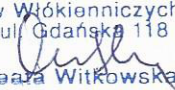
According to standard PN-EN 14465:2005+A1:2007 "Textiles. Upholstery fabrics.

40% Wool, 30% Acryl, 20% Cotton, 10% Polyester was classified as:

- **Level A** in reference to the colour fastness to light (Level A: $\geq$ degree 6).

_____ The end of Test Certificate _____

Person authorizing the Test Certificate

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dr inż. Beata Witkowska



92-103 ŁÓDŹ, ul. Brzezińska 5/15,
tel. +48(0)42 6163101, fax. +48(0)42 6792638

INSTYTUT WŁOKNIENICTWA
Textile Research Institute



Laboratory of Chemical Testing and Instrumental Analysis

Accredited by Polish Center for Accreditation for the testing specified in Scope of Accreditation No AB 077

92-103 Lodz, Brzezińska 5/15 Street
phone no. (0-42) 61-63-130 (120, 128), fax (0-42) 61-63-131
e-mail: jpiestrzeniewicz@iw.lodz.pl, labchem@iw.lodz.pl

AB 077

Łódź 29th January 2015

L - 35/2015

TEST CERTIFICATE No BCH BCH 32/50/2015/A

1. Name and address of the principal:

composition: 40% wool, 30% acrylic, 20% cotton, 10% polyester

3. Date of receiving sample for testing: 27.01.2015

4. Date of performance of testing: 28.01. - 29.01.2015

5. Sampling: by Client personally

RESULTS OF THE TESTS

Property of investigation	Results ¹⁾	Testing method	Test conditions	Level of requirements for categories according to PN-EN 14465:2005 + A1:2007		
				A	B	C
Colour fastness to rubbing:						
- Dry		PN-EN ISO 105-X12:2005	Rubbing pick: Ø 16±0,1mm; push: 9±0,2 N; time of acclimatisation: 4h; temperature of acclimatisation: (20,0±2)°C; relative humidity: (65,0±2)%; ambient temperature: degree of moisturising of rubbing to fabric: 100%	≥ 4-5	4	3-4
- weft	a/ 3					
- warp	a/ 3					
- Wet				≥ 3-4	3	2-3
- weft	a/ 3					
- warp	a/ 3					

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:

- 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.
- 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.
- Total number of pages of the test certificate 1.

Test authorized by:

Wiesława Lota, M.Sc. Eng.

W. Lota

Confirmed by:

LABORATORIUM BADAŃ CHEMICZNYCH
I ANALIZ INSTRUMENTALNYCH
KIEROWNIK

mgr inż. Jerzy Piestrzeniewicz

Number of copies: 4

The test certificate receive:

- Customer – 2 copies
- IW – Laboratory of Chemical Testing and Instrumental Analysis – 1 copy
- IW – Laboratory of Testing Textile Raw Materials and Fabrics – 1 copy



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AB 164

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

TEST CERTIFICATE NO. BM 2.2.1.4 / 2015 / G / A

declared raw materials: **40% Wool, 30% Acryl, 20% Cotton, 10% Polyester**

3. **Date of receiving material for testing:** 2015-01-26
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Certificate prepared by:

Izabela Jasinska, Ph.D.

Person authorizing the Test Certificate:

Surname and name: **Beata Witkowska, Ph. D.**

Function: **Technical Head of Laboratory**

Signature:

dr inż. Beata Witkowska

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TEST CERTIFICATE NO. BM 2.2.1.4 / 2015 / G / A

Parameter		Value	Remarks
Propensity to surface fuzzing and pilling, degree	the number of rubs	the abradant the standard woolen fabric	PN-EN ISO 12945-2:2002 load - 415 g, the number of testing specimens - 3, the number of assessment persons - 3, <u>Assessment scale:</u> 5 - without change, 1 - strong fuzzing and intensive pilling on the whole area of sample.
	500	3	
	1 000	2-3	
	2 000	2 distinct surface fuzzing, distinct pilling	
	5 000	2 distinct surface fuzzing, distinct pilling	

According to standard PN-EN 14465:2005+A1:2007 "Textiles. Upholstery fabrics. Specification and methods of test", **the upholstery fabric CLARK**, declared raw materials: **40% Wool, 30% Acryl, 20% Cotton, 10% Polyester** was classified as:
- outside the Level in reference to the fuzzing and pilling (the lowest Level D: degree 3).

_____ The end of Test Certificate _____

Person authorizing the Test Certificate

Kierownik Techniczny
 Laboratorium Badań Surowców
 i Wytrobów Włókienniczych
 siedziba ul. Gdańska 118
 dr inż. Beata Witkowska

Laboratorium Badań Surowców
i Wytwarzania WłókienSiedziba: ul. Brzezińska 5/15, 92-103 Łódź, tel. +48(0) 42 6163140
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AB 164

LABORATORY OF TESTING TEXTILE RAW MATERIALS AND FABRICS
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TEST CERTIFICATE NO. BM 2.2.1.2 / 2015 / G / A

Parameter	Value	Remarks
Seam slippage resistance, mm: <u>Warp</u> The mean value of seam slippage resistance for warp, mm - individual results, mm <u>Weft</u> The mean value of seam slippage resistance for weft, mm - individual results, mm	4 ± 0 4; 4; 4; 4; 4 4 ± 0 4; 4; 4; 4; 4	PN-EN ISO 13936-2:2005 tensile tester Instron 3367, testing force - 180N, 100% PES sewing threads – 79 tex, the number of sewing needle - 110, the number of stitch - 32/100 mm, rate of extension - 50 mm/min.

According to standard PN-EN 14465:2005+A1:2007 "Textiles. Upholstery fabrics. Specification and methods of test", **the upholstery fabric CLARK**, declared raw materials: **40% Wool, 30% Acryl, 20% Cotton, 10% Polyester** was classified as:
 - **Level A** in reference to the seam slippage resistance (Level A: ≤ 4 mm),

_____ The end of Test Certificate _____

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