



Textilní zkušební ústav, s.p.

Václavská 237/6, 603 00 Brno, Česká republika
(Textile Testing Institute)

TESTING LABORATORY NO. 1001

accredited according to EN ISO/IEC 17025:2005 by the Czech Accreditation Institute

TEST REPORT

AZL 18/0250-03A

CUSTOMER:

UAB ROTMA
Santariškių, 105-2
LT-08465 Vilnius
Lithuania

SAMPLE:
(according to the customer order)

Fabric No. 17P3-SL BLACK
Colour: black
Knit construction – plush fabric. Plush loops in a knitting report
60±15%. Face to back yarn denier gradient 1:2
1.0 Denier (110dtex / 96 filament)
2.0 Denier (167dtex / 70 filament)



SUBJECT OF ASSESSMENT:

Tests according to request of customer

**CONDITIONS OF
APPLICATION OF THE TEST
REPORT:**

Test Report contains results of the tests related to the submitted sample only. Sampling has been done by customer. The Report may not be reproduced in any way other than as a complete set. Reproduction of certain parts of the Report is subject to approval of the test laboratory, which has issued it. All information about subcontracted tests results or unaccredited test methods is presented in text part of the Test report. This Report is a literal translation of the Czech version.

PREPARED BY:

Štorková *Štorková*

CHECKED BY:

Drabálková *Drabálková*

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+420 543 426 730
+420 543 426 742
<http://www.tzu.cz>
azl@tzu.cz



PROCEDURE OF ASSESSMENT

Determination of number of stitches per unit length and unit area

was determined according to ČSN EN 14971:2006

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Standard atmosphere for testing: relative humidity 66 %, temperature 20 °C
- Measured length: 1 cm
- The number of tests: 5x in column, 5x in line

Results: Number of stitches per unit length.

Thermal resistance

was determined according to ČSN EN ISO 11092:2015

- Conditioning: relative humidity (65±4) %; temperature (20±2) °C
- Standard atmosphere for testing: air temperature (20±0,1) °C, relative humidity (65±3,0) %
- Temperature of hotplate (35±0,1) °C, temperature of measuring unit (35±0,1) °C
- Dimension: 29 x 29 cm, number of samples: 3
- Area of measuring unit: 0,0497 m²
- Air flow velocity: 1 m.s⁻¹

Results: thermal resistance R_{ct} expressed as m².K.W⁻¹

Water – vapour resistance (sweating guarded-hotplate test)

was determined according to ČSN EN ISO 11092:2015

- Conditioning: relative humidity (40±3) %; temperature (35±0,1) °C
- Standard atmosphere for testing: air temperature (35±0,1) °C, relative humidity (40±3) %
- Temperature of hotplate (35±0,1) °C, temperature of measuring unit (35±0,1) °C
- Sample dimension: 21 x 21 cm, number of samples: 3
- Area of measuring unit: 0,044 m²
- Air flow velocity: 1 m.s⁻¹

Results: water – vapour resistance R_{et} expressed as m².Pa.W⁻¹

Hydraulic method for determination of bursting strength and bursting distension

was determined according to ČSN EN ISO 13938-1:2000

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Standard atmosphere for testing: relative humidity 65%, temperature 20 °C
- Tensile strength tester: MPT – 1
- Test area: 7,3 cm²
- Number of specimens tested: 5
- Time to burst: (20 ± 5) s

Results: bursting strength expressed as kPa

Resistance to pilling

was determined according to ČSN EN ISO 12945-2:2001

- Conditioning: relative humidity (65±4) %; temperature (20±2) °C
- Standard atmosphere for testing: relative humidity 65 %, temperature 21 °C
- Pilling tester: Martindale - modified according to ČSN EN ISO 12945-2:2001
- Total load: (415±2) g
- Number of specimens tested: 3
- Abrasion method: face test fabric

Results: Resistance to pilling expressed in grades





Determination of thickness of textiles and textile products

was determined according to ČSN EN ISO 5084:1998

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Standard atmosphere for testing: relative humidity 63 %, temperature 21 °C
- Test specimen size: 100 x 100 mm
- Number of specimen tested: 5
- Pressure applied: 0,1 kPa
- Area of presser foot: 20 cm²

Results: Thickness expressed in mm

All values of uncertainty of measurement were calculated with assumption of normal distribution. For purposes of calculation of expanded uncertainty values will be multiplied by coverage factor $k=2$ for statistical level 95%. Sampling was not taken into consideration.

Mass per unit area

was determined according to LST EN 12127:1999

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Standard atmosphere for testing: relative humidity 63 %, temperature 21 °C
- Dimension: 100 cm²
- Number of samples: 5

Results: Mass per unit area expressed as g.m⁻²

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Quantitative chemical analysis of textile fibres

was determined according to LST EN ISO 1833-12:2011.

- pre-treatment method: acetone

Results: Content of analysed fibres as a percentage corrected using agreed allowances (Annex IX of the Regulation No. 1007/2011 of the European Parliament and of the Council)

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Colour fastness to rubbing

was determined according to LST EN ISO 105-X12:2016

- Rubbing conditions: dry/wet
- Rubbing finger: for other textiles [diameter (16±0,1) mm; downward force 9 N]
- Climatic conditions during testing: temperature (20±2) °C, relative humidity (65±2) %

Result: numerical rating for the staining of tested specimen to the cotton rubbing cloth, assessed according to the EN 20105-A03

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Colour fastness to washing

was determined according to LST EN ISO 105-C06:2010

- Test conditions: test A1M (t = 40 °C)
- Number of steel balls: 10
- Detergent: ECE
- Adjacent fabrics used: multifibre DW (Acetate/Cotton/Polyamide/Polyester/Acryl/Wool)

Results: numerical rating of the tested specimen colour change, assessed according to EN 20105-A02.

Staining of the tested specimen to the individual adjacent fabrics, assessed according to EN 20105-A03.

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18





Colour fastness to perspiration

was determined according to LST EN ISO 105-E04:2013

- Alkaline solution of model perspiration
- Acid solution of model perspiration
- Adjacent fabric: multifibre DW (Acetate/Cotton/Polyamide/Polyester/Acryl/Wool)

Results: numerical rating of the tested specimen colour change, assessed according to EN 20105-A02.

Staining of the tested specimen to the individual adjacent fabrics, assessed according to EN 20105-A03.

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Colour fastness to light

was determined according to LST EN ISO 105-B02:2014

- Filter system: LST EN ISO 105-B02
- Lighting procedure: method 1
- Testing apparatus: MEGASOL V2.01

Results: change of colour shade after exposition of the specimen to artificial light, expressed as numerical value according to the blue scale (EN ISO 105-B02)

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Dimensional change after washing and drying

was evaluated according to LST EN ISO 5077:2008 The samples for evaluation were prepared according to LST EN ISO 3759:2012. Washing was carried out according to LST EN ISO 6330:2012.

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Method: 4N (40±3) °C,
- Number of washing: 1x
- Washing machine: FOM-71MP
- Detergent: standard ECE, Detergent dose: 20 g
- Total mass of the specimens and loading fabric: 2 kg
- Drying: procedure A – Line dry

Results: dimensional change expressed in %

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Permeability of fabric to air

was determined according to LST EN ISO 9237:1997

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Number of specimens tested: 10
- Surface of the sample: 20 cm²
- Gradient pressure: 100 Pa

Results: Permeability of fabric to air expressed as mm.s⁻¹

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18

Overall Moisture Management Capability (OMMC)

was determined according to AATCC Test method 195-2012

- Conditioning: relative humidity (65±4) %, temperature (20±2) °C
- Standard atmosphere for testing: relative humidity 65%, temperature 20 °C
- Test performed on: Original sample and after washing (number of washing cycles 5x; EN ISO 6330, at 40 °C, procedure 4N, free drying
- Number of specimens tested: 5

Results: index Overall Moisture Management Capability

The determination was carried out at FTMC, Kaunas Lithuania – No. LA.01.048, Test Report No. 41-18





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TEST RESULTS:

Fabric No. 17P3-SL BLACK Knit construction – plush fabric. Plush loops in a knitting report 60±15% Face to back yarn denier gradient 1:2 1.0 Denier (110dtex / 96 filament) 2.0 Denier (167dtex / 70 filament)			
Characteristics	Test method	Measuring unit	Values found
Determination of number of stitches . coefficient of variation	ČSN EN 14971:2006	number of stitches/1 cm %	column / line 13,0 / 15,0 0,8 / 0,7
Thermal resistance R_{ct} . coefficient of variation	ČSN EN ISO 11092:2015	$m^2.K.W^{-1}$ %	0,081 3,79
Water-vapour resistance $R_{et}^{*)}$. coefficient of variation	ČSN EN ISO 11092:2015	$m^2.Pa.W^{-1}$ %	6,5 4,0
Bursting strength . coefficient of variation	ČSN EN ISO 13938-1:2000	kPa %	527,6 3,3
Pilling resistance number of cycles . 125 . 500 . 1000 . 2000 . 5000	ČSN EN ISO 12945-2:2001	grade	5 4-5 4-5 4 4
Thickness $^{*)}$. coefficient of variation	ČSN EN ISO 5084:1998	mm %	2,30 1,23

*) results taken from the test report AZL17/1298; date of issue 7.12.2017





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Characteristics	Test method	Measuring unit	Values found
Mass per unit area . coefficient of variation	LST EN 12127:1999	g.m ⁻² %	218
Fibre composition	LST EN ISO 1833-12:2011	%	Polyester 92,5 Elastane 7,5
Colour fastness to rubbing . dry . wet	LST EN ISO 105- X12:2016	grade grey scale	staining of the adjacent fabric - warp / weft *) 4-5 / 4-5 4 / 4
Colour fastness to washing . test A1M (40 °C) (after 5 washes)	LST EN ISO 105-C06:2010	grade grey scale	change in colour// staining of the adjacent fabric *) 4-5 // 3 / 4-5 / 3 / 4 / 5/ 4
Colour fastness to perspiration . alkaline solution . acid solution	LST EN ISO 105-E04:2013	grade grey scale	change in colour// staining of the adjacent fabric *) 4-5 // 4 / 4-5 / 4 / 4 / 4-5/ 4 4-5 // 4-5 / 4-5 / 4 / 4-5 / 5/ 4-5
Colour fastness to light	LST EN ISO 105-B02:2014	grade blue scale	change in colour > 5
Dimensional change after washing and drying . temperature 40 °C	LST EN ISO 6330:2012 LST EN ISO 5077:2008	%	longitudinal / transverse -0,5 / -1,0
Permeability of fabric to air . coefficient of variation	LST EN ISO 9237:1996	mm.s ⁻¹ %	1024,9 5,4
One – way transport index ⁺⁾	AATCC TM 195-2012	index	5
Overall moisture management ⁺⁾		index	5
Max wetted radius ⁺⁾		ratio obverse / reverse	1

* multifibre DW (Acetate/Cotton/Polyamide/Polyester/Acryl/Wool)

+) Non-accredited method

Petr Nasadil
Head of Testing Laboratory

