



**Feabrik bv**  
**Terheijdenstraat 3C**  
**4811 AW BREDA**  
**Netherlands**

**Your notice of**  
27-07-2023

**Your reference**

**Date**  
31-08-2023

## Analysis Report 23.04144.02

Required tests :

ISO 12947-2 (1998)/cor.1 (2002)	Determination of the abrasion resistance - Martindale
EN ISO 5077 (2008) & ISO 6330 (2021)	Determination of dimensional change in washing and drying
ISO 13936-2 (2004)	Determination of the seam slippage at a specified force.
ISO 12945-2 (2000)	Determination of the resistance to pilling - Martindale
ASTM D3939/D3939 M (2017)	Determination of the snagging
ISO 13938-1 (1999)	Determination of the bursting strength

Sample id	Information given by the client	Date of receipt
T2317604	RUMOR	27-07-2023

Joceleyne Coreelman  
Order responsible

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The results of the analysis cover the received samples. Centexbel is not responsible for the representativeness of the samples.  
In assessing compliance with the specifications, we did not take into account the uncertainty on the test results.

**Reference: T2317604 - RUMOR**

**Determination of the abrasion resistance - Martindale**

Date of ending the test 04-08-2023  
 Standard used ISO 12947-2 (1998)/cor.1 (2002)  
 Product standard EN 14465 (2003) + A1 (2006)

Deviation from the standard -  
 Conditioning 20°C, relative humidity 65%  
 Apparatus Martindale Wear and Abrasion Tester  
 Pressure on test specimen 12 kPa  
 Abradant Standard wool fabric  
 Type of the felt Woven felt  
 Approximate g/m<sup>2</sup> > 500  
 Number of test specimens 4

Assessment of colour change according to the grey scales (ISO 105 A02)  
 Assessment after 3 000 rubs 4-5  
 Test end point Knitted - 1 loop completely damaged

Specimen	Number of rubs	Final result
#1	100 000	≥ 100 000
#2	100 000	≥ 100 000
#3	100 000	≥ 100 000
#4	100 000	≥ 100 000
Minimum value	100 000	≥ 100 000



**Reference: T2317604 - RUMOR**

**Determination of dimensional change in washing and drying**

Date of ending the test 04-08-2023  
Standard used EN ISO 5077 (2008) & ISO 6330 (2021)

Deviation from the standard -  
Conditioning 20°C, relative humidity 65%  
Preparation, marking and measuring Based on ISO 3759 (2011)  
Apparatus Wascator FOM 71 (type A)  
Used detergent ECE detergent (Type 3)  
Washing method and temperature 3HD- 30°C (2021)  
Number of washing cycles 1  
Drying method C = Flat dry at the end (2021)  
Mass of the test specimens 616 g  
Mass of the ballast The washing machine is filled with ballast to achieve 2 kg in total

Number of test specimens 3  
Precision for measuring 0,25%  
Number of measurements on each test specimen 3 (Wales direction)  
3 (Course direction)

Remark Washing always occurs with a ballast type III 100% PES regardless of the composition of the fabric.

- Means shrinkage  
+ Means extension

	Wales direction	Course direction
1-1	-2.00	-3.50
1-2	-2.50	-4.00
1-3	-1.50	-3.00
2-1	-3.25	-2.50
2-2	-2.75	-3.25
2-3	-1.00	-2.75
3-1	-1.25	-2.25
3-2	-3.50	-2.25
3-3	-4.00	-2.25
Average	-2.5 %	-3.0 %

**Reference: T2317604 - RUMOR**

**Determination of the seam slippage at a specified force.**

Date of ending the test	29-08-2023
Standard used	ISO 13936-2 (2004)
Product standard	EN 14465 (2003) + A1 (2006)
Deviation from the standard	-
Conditioning	20°C, relative humidity 65%
Stitching type	74 tex (PES) and a needle size N° 110 and 32 stitches per 100 mm
Apparatus	Instron, type CRE, class 0,5
Cell	1 kN
Rate	50 mm/min
Number of test specimens	5 (Wales direction (course//seam)) 5 (Course direction (Wales//seam))

Seam opening after reducing of the strength of 180 N to 5 N (mm)

	Wales direction (course//seam)	Course direction (Wales//seam)
	Seam opening after reduction at 5 N (mm)	Seam opening after reduction at 5 N (mm)
#1	1.5	1.5
#2	1.5	1.0
#3	1.5	1.0
#4	1.5	1.0
#5	1.5	1.5
Average	1.5 mm	1.0 mm

During the test executed in the direction of the wales, the courses are gliding, during the test executed in the direction of the courses, the wales are gliding



**Reference: T2317604 - RUMOR**

**Determination of the resistance to pilling - Martindale**

Date of ending the test 29-08-2023  
 Standard used ISO 12945-2 (2000)  
 Product standard EN 14465 (2003) + A1 (2006)

Deviation from the standard -  
 Conditioning 20°C, relative humidity 65%  
 Apparatus Martindale Wear and Abrasion Tester  
 Pressure on test specimen 6,5 cN/cm<sup>2</sup>  
 Abradant Standard wool fabric  
 Number of test specimens 3  
 Number of assessors 2

	Assessment at ... number of cycles			
	500	1000	2000	5000
#1	5	4-5	4-5	4-5
#2	5	4-5	4-5	4-5
#3	5	4-5	4-5	4-5

The final assessment is based on Fuzzing and pilling



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**Determination of the snagging**

Date of ending the test 29-08-2023  
 Standard used ASTM D3939/D3939 M (2017)

Deviation from the standard On specimen without pretreatment  
 Apparatus I.C.I Mace Snag Tester  
 Number of revolutions 60 / min  
 Assessment After 600 cycles (= 10 min.) in the I.C.I. Mace Snag Viewing cabinet

	Assessment
Wales direction (course//seam) // cylinder	4-5
Wales direction (course//seam) // cylinder	4-5
Average	4-5
Course direction (Wales//seam) // cylinder	4-5
Course direction (Wales//seam) // cylinder	4-5
Average	4-5

**Reference: T2317604 - RUMOR**

**Determination of the bursting strength**

Date of ending the test 30-08-2023  
 Standard used ISO 13938-1 (1999)  
 Product standard EN 14465 (2003) + A1 (2006)

Deviation from the standard Bursting time out of range  
 Conditioning 20°C, relative humidity 65%  
 Apparatus PSI - Burst Digital Bursting Strength Tester model 111A  
 Measuring surface 50 cm<sup>2</sup>  
 Time duration 20±5 s  
 Number of measurements 5

**Conditioned**

Test specimen	Measured bursting strength (kPa)	Height (mm)
#1	642	27
#2	650	27
#3	650	27
#4	646	29
#5	661	29
Average	650 kPa	28 mm

mean of measured bursting strength	650 kPa
average correction for the distension of the diaphragm	30 kPa
mean value for the corrected bursting strength	620 kPa