



TEST REPORT

Client: Gabriel
Hjulgagervej 55
Postbox 59
DK-9100 Aalborg
Denmark

Entry No: 101092-04

Date received: 26/07/2018

Client's Description: Sample of fabric: Noma, colour: 64217

Test Required: Abrasion, Pilling, Tensile Strength, Tear Resistance and Seam Slippage in accordance with BS EN 14465. Colour Fastness to Rubbing, Colour Fastness to Rubbing with Organic Solvents, Colour Fastness to Light, Colour Fastness to Perspiration, Colour Fastness to Washing^S, Colour Fastness to Water, Colour Fastness to Water Spotting^S, Dimensional Stability to Washing and Stretch and Recovery^S

Conditioning: In accordance with BS EN ISO 139: 2005 for a minimum of 24 hours at 65+/-4%, Relative Humidity, 20+/-2°C

Date Tests Completed: 30/08/2018

Abrasion Resistance: BS EN ISO 12947-2: 2016^F

The tests were carried out using a pressure of 12 +/- 0.3 kPa
The criterion for judging end point was three threads broken

Specimen 1	90,000 rubs
Specimen 2	80,000 rubs
Specimen 3	100,000 rubs
Specimen 4	80,000 rubs
Overall Result	80,000 rubs

Change in colour after 6,000 rubs: **4-5**

Observation Technique: 10 fold magnification
Type of Fabric: Flat Woven

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This is hereby certified to be a correct return of the tests made of the items referred to herein

Vivienne Brockbank
Technician
09 September 2018

- ❖ Unless instructed otherwise by the client sample remnants will be disposed of after 28 days.
 - ❖ Tests marked ^N in this certificate are not included in the UKAS Accreditation Schedule for this Laboratory.
 - ❖ Tests marked ^F in this certificate are performed under the Laboratory's Flexible Scope of Accreditation.
 - ❖ Tests marked ^S in this certificate have been subcontracted to another ISO17025 Accredited Laboratory.
 - ❖ Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.
 - ❖ Uncertainty budgets for test methods contained within this report are available on request.
- This Certificate relates only to the sample received and, unless that sample has been drawn by the staff of this laboratory, or its agent, and endorsed accordingly, any application of the result to a bulk quantity or other material is entirely the responsibility of the client.



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Pilling: BS EN ISO 12945-2: 2000 Load 415g

	<u>Rating</u>
After 2,000 rubs	4-5
After 5,000 rubs	4-5

Tensile Strength: BS EN ISO 13934-1: 2013

Warp Way	1900 N
Weft Way	1600 N

Tear Resistance: BS EN ISO 13937-3: 2000

Torn across Warp	155 N
Torn across Weft	126 N

Seam Slippage: BS EN ISO 13936-2: 2004

	<u>Mean Seam opening</u>
Warp Way Seam	3 mm
Weft Way Seam	3 mm

Colour Fastness to Rubbing: BS EN ISO 105–X12: 2016^F

<u>Staining</u>		<u>Dry</u>	<u>Wet</u>
	Warp Way	4-5	4-5
	Weft Way	4-5	4-5
<u>Change in Colour</u>		<u>Dry</u>	<u>Wet</u>
	Warp Way	5	5
	Weft Way	5	5

Note: Change in colour is not a requirement of the method but was carried out at the request of the client.

Colour Fastness to Rubbing with Organic Solvents: BS EN ISO 105–D02: 2016^F

		<u>Tetrachloroethylene</u>	<u>White Spirit</u>
Staining:	Length Way	5	4-5
	Width Way	5	5
		<u>Tetrachloroethylene</u>	<u>White Spirit</u>
Change in colour:	Length Way	5	5
	Width Way	5	5

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Colour Fastness to Light: BS EN ISO 105-B02: 2014 Method 2

A specimen was exposed together with Standard References numbers 1-8. By comparison with the standard references the grading was found to be:

BWS Rating
6

Colour Fastness to Perspiration: BS EN ISO 105-E04: 2013

Staining on:	Acid	Alkali
Acetate	5	5
Cotton	5	5
Nylon 6.6	5	5
Polyester	5	5
Acrylic	5	5
Wool	5	5
Change in Colour	5	5

Colour Fastness to Washing: BS EN ISO 105-C06: 2010^S Procedure C2S at 60°C using 25 steel balls

Staining on:	
Tri-Acetate	4-5
Cotton	5
Nylon 6.6	4
Polyester	4-5
Acrylic	5
Viscose	4-5
Change in Colour	4-5

Colour Fastness to Water: BS EN ISO 105-E01: 2013

Staining on:	
Acetate	5
Cotton	5
Nylon 6.6	5
Polyester	5
Acrylic	5
Wool	5
Change in Colour	5

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Colour Fastness to Water Spotting: BS EN ISO 105–E16:2007^S

	<u>Grade</u>
Inner circle of tested area:	5
Outer periphery of tested area:	4-5
Cross staining	n/a
Change in appearance	5

Dimensional Stability: BS EN ISO 5077: 2008

Washing Procedure: BS EN ISO 6330: 2012 Procedure 6M (60°C), Drying Procedure C Flat dry

Length	-1.5 %
Width	-1.5 %

Note: a negative result indicates shrinkage.

Stretch & Recovery: BS EN ISO 14704-1: 2005 Method A Load 27.5N^S

	<u>1 Min & 30 Mins</u>	
	<u>1 Min</u>	<u>30 Mins</u>
Length		
Average % Recovery	100%	100%
Average % Residual Extension	0%	0%
Average % Stretch	4.3%	
Width		
Average % Recovery	100%	100%
Average % Residual Extension	0%	0%
Average % Stretch	4.4%	

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