



TEST REPORT

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

Entry No: 78452-04

Date received: 30/08/2016

Client's Description: Sample of fabric: Art. Rhythm 66151 Light Blue

Test Required: Abrasion, Pilling, Tensile Strength, Tear Resistance and Seam Slippage in accordance with BS EN 14465. Colour Fastness to Water, Colour Fastness to Perspiration, Colour Fastness to Rubbing, Colour Fastness to Rubbing with Foam Detergent, Colour Fastness to Rubbing with Organic Solvents, Colour Fastness to Washing, Colour Fastness to Water Spotting^S, Dimensional Stability to Washing and Stretch & 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: 21/09/2016

Abrasion Resistance: BS EN ISO 12947-2: 1998 (tested on face side)

The tests were carried out using a pressure of 12 +/- 0.3 kPa
The criterion for judging end point was hole formation in top layer / breakdown of outer surface

Specimen 1	80,000 rubs
Specimen 2	80,000 rubs
Specimen 3	70,000 rubs
Specimen 4	70,000 rubs
Overall Result	70,000 rubs

Change in colour after 3,000 rubs: **4**

Observation Technique: 10 fold magnification
Type of Fabric: 3D-Knitted

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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
06 October 2016

- ❖ 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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Client: Gabriel
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Abrasion Resistance: BS EN ISO 12947-2: 1998 (tested on reverse side)

The tests were carried out using a pressure of 12 +/- 0.3 kPa
The criterion for judging end point was hole formation in top layer / breakdown of outer surface

Specimen 1	50,000 rubs
Specimen 2	50,000 rubs
Specimen 3	55,000 rubs
Specimen 4	60,000 rubs
Overall Result	50,000 rubs

Change in colour after 3,000 rubs: **4**

Observation Technique: 10 fold magnification
Type of Fabric: 3D- Knitted

Tensile Strength: BS EN ISO 13934-1: 2013

Length Way	770 N
Width Way	610 N

Tear Resistance: BS EN ISO 13937-3: 2000

Torn across Length	96 N
Torn across Width	55 N

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

	<u>Rating</u>
After 2,000 rubs	5
After 5,000 rubs	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 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 Rubbing: BS EN ISO 105–X12: 2002

Staining:		<u>Dry</u>	<u>Wet</u>
	Length Way	4-5	5
	Width Way	4-5	5
Change in colour:	Length Way	5	5
	Width 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 Foam Detergent: BS EN ISO 105–X12: 2002

	<u>Staining</u>	<u>Change in Colour</u>
Length Way	4-5	5
Width Way	4-5	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: 2002

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

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

Staining on:	
Acetate	5
Cotton	5
Nylon 6.6	4-5
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:	5
Change in appearance:	None

Dimensional Stability: BS EN ISO 5077: 2008

Washing Procedure: BS EN ISO 6330: 2012 Procedure 4M (40°C), Drying Procedure C Flat dry

Length	-4.0 %
Width	-2.0 %

Note: a negative result indicates shrinkage.

Stretch & Recovery: BS EN ISO 14704-1: 2005 using a load of 27.5N^S

	<u>60 Secs</u>	
	<u>1 Min</u>	<u>30 Mins</u>
Time @ full extension		
Length		
Average % Recovery	98.6%	99.0%
Average % Residual Extension	1.4%	1.0%
Average % Stretch	6.0%	
Width		
Average % Recovery	97.0%	97.8%
Average % Residual Extension	3.0%	2.2
Average % Stretch	7.1%	

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