


The following sample(s) was/were submitted and identified on behalf of the client as:

Sample Description : (A)Woven fabric: 100% polyester 150D Oxford breath able in hv-yellow
(B)Woven fabric:100% polyester 150D Oxford breatha ble in hv-orange

Proposed Care Instruction : 
Machine wash cold, no bleach, tumble dry low, do not dry clean, do not iron, max 25 cycles

Test Performed : Selected test(s) as requested by applicant

Sample Receiving Date : Sep 05, 2018

Testing Period : Sep 05, 2018 - Sep 20, 2018

Test Result(s) : Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. For further details, please refer to the following page(s).

Signed for and on behalf of
SGS-CSTC Standards Technical Services (Shanghai) Co. Ltd



Hattie Chen
Account Executive

QUANTUM
SAFETY NETWORK PTE LTD



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Test Result

American National Standard for High-Visibility Safety Apparel and Headwear
(ANSI/ISEA 107-2015)

Sample A

TESTS FOR ALL MATERIALS				
Test/Method	Section	ANSI/ISEA 107-2015 Requirement	Test Result	Pass/ Fail/ NA
Determination of Color ASTM E1164-12 (Two layers of the same material)	8.1.1	Test specimen must fulfill the colorimetric requirements of Table 3 for background material	As submitted:	Pass
	8.2.4		x= 0.382	
	10.2		y= 0.554	
			%Y= 119.67	
			After 40AFU	
		x= 0.378	Pass	
		y= 0.545	Pass	
		%Y= 113.02	Pass	
		After 25 washes	Pass	
		x= 0.380	Pass	
		y= 0.554	Pass	
		%Y= 118.06	Pass	

Washing procedure: AATCC 135-2012, Test No. (3)(III)(A) (iii); Machine wash at 105±5 degree F with 1.8 kg total loading (type 1 ballast+ specimen) and 66±1g of 1993 AATCC standard reference detergent, permanent press cycle, tumble dry permanent press at 155±10 degree F

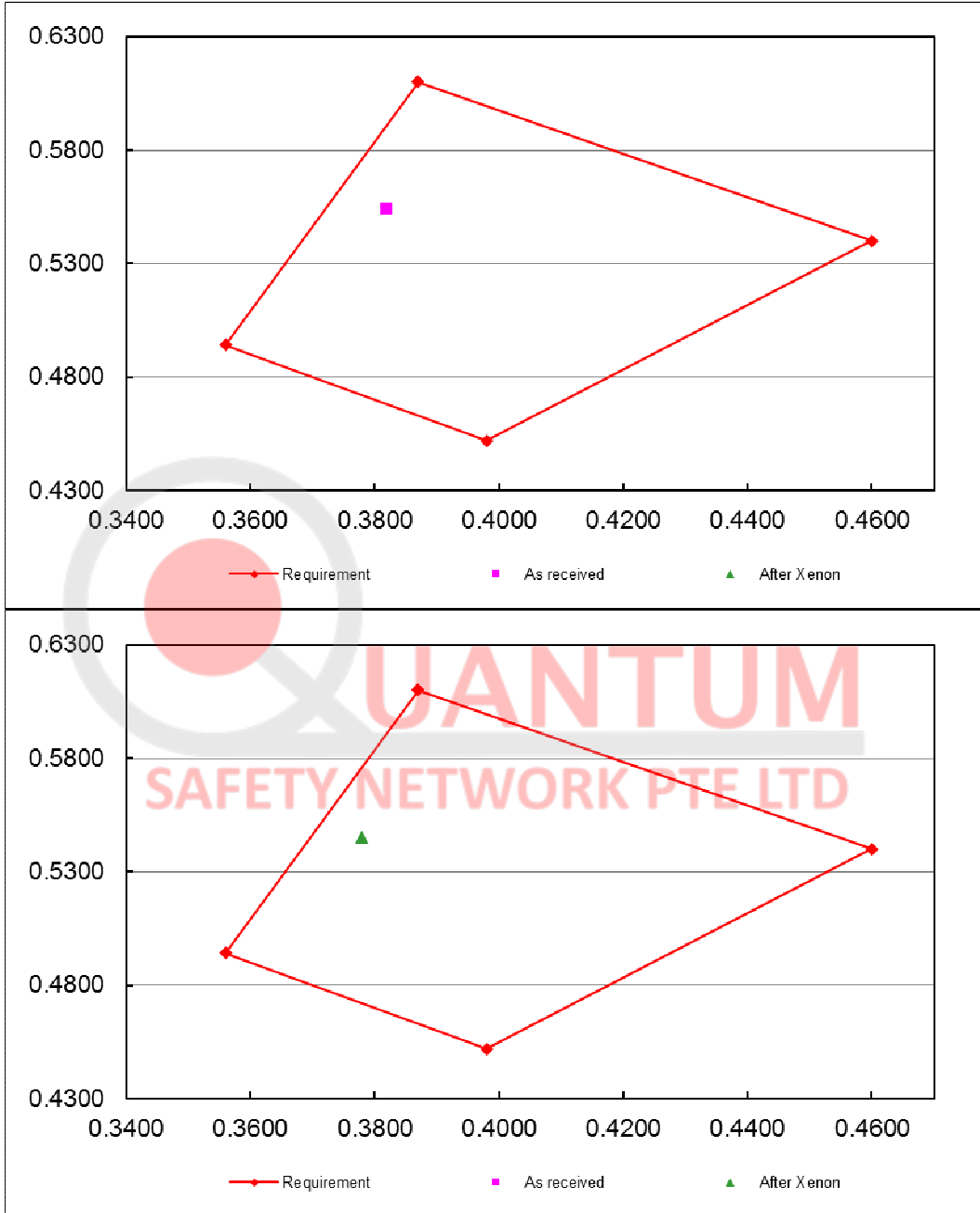
Table 3. Color of background and combined-performance material

Color	Chromaticity coordinates		Minimum total luminance factor
	x	y	Y (%)
Fluorescent yellow-green	0.387	0.610	70
	0.356	0.494	
	0.398	0.452	
	0.460	0.540	



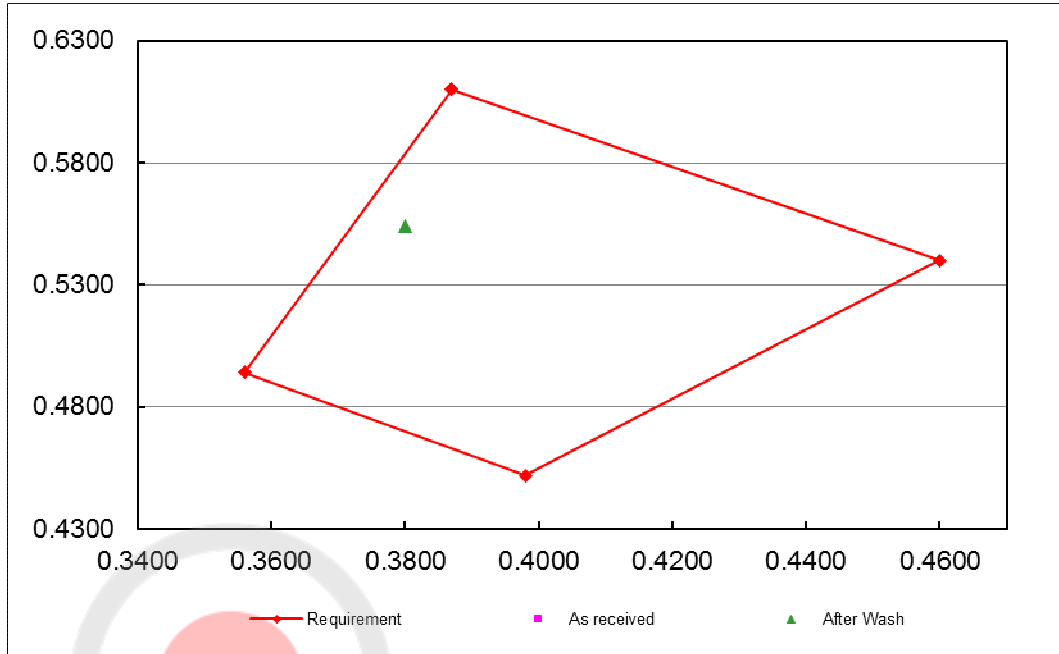
Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Graphs:



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com
 3rd Building, No.889, Yishan Road, Xuhui District Shanghai, China 200233 t (86-21) 61402666 f (86-21) 64958763 www.sgsgroup.com.cn
 中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t (86-21) 61402666 f (86-21) 64958763 e sgs.china@sgs.com



Sample B

TESTS FOR ALL MATERIALS				
Test/Method	Section	ANSI/ISEA 107-2015 Requirement	Test Result	Pass/ Fail/ NA
Determination of Color ASTM E1164-12 (Two layers of the same material)	8.1.1	Test specimen must fulfill the colorimetric requirements of Table 3 for background material	As submitted:	
	8.2.4		x= 0.602	Pass
	10.2		y= 0.359	Pass
			%Y= 49.94	
			After 40AFU	
			x= 0.581	Pass
	y= 0.364			
	%Y= 52.28			
	After 25 washes			
	x= 0.602	Pass		
	y= 0.359			
	%Y= 49.62	Pass		

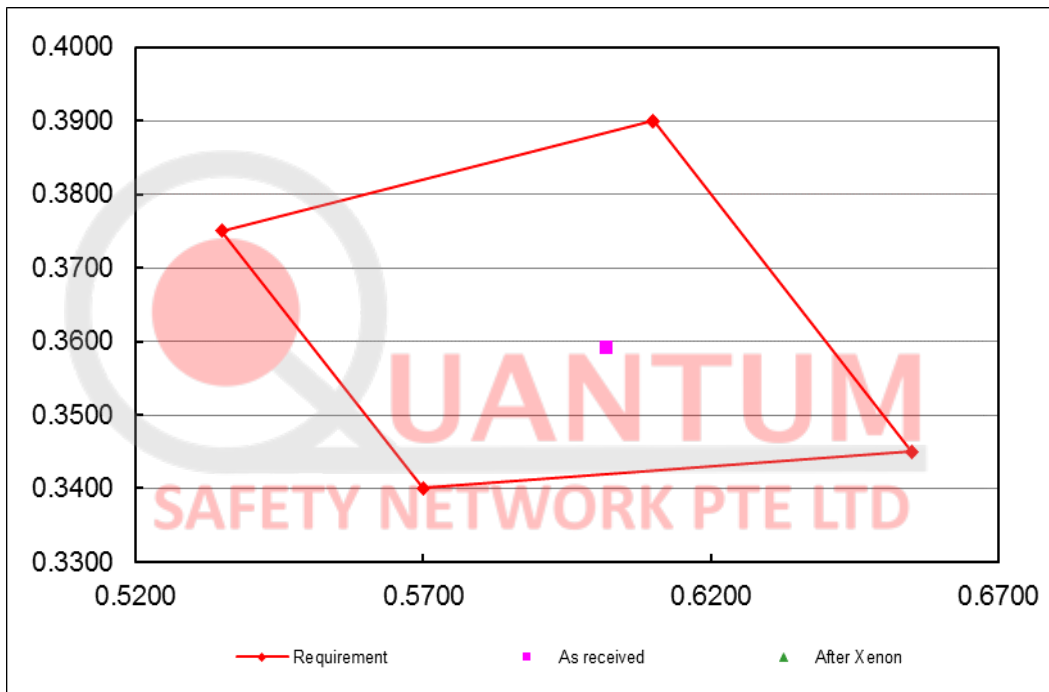
Wash procedure: AATCC 135-2012, Test No. (3)(III)(A) (iii); Machine wash at 105±5 degree F with 1.8 kg total loading (type 1 ballast+ specimen) and 66±1g of 1993 AATCC standard reference detergent, permanent press cycle, tumble dry permanent press at 155±10 degree F



Table 3. Color of background and combined-performance material

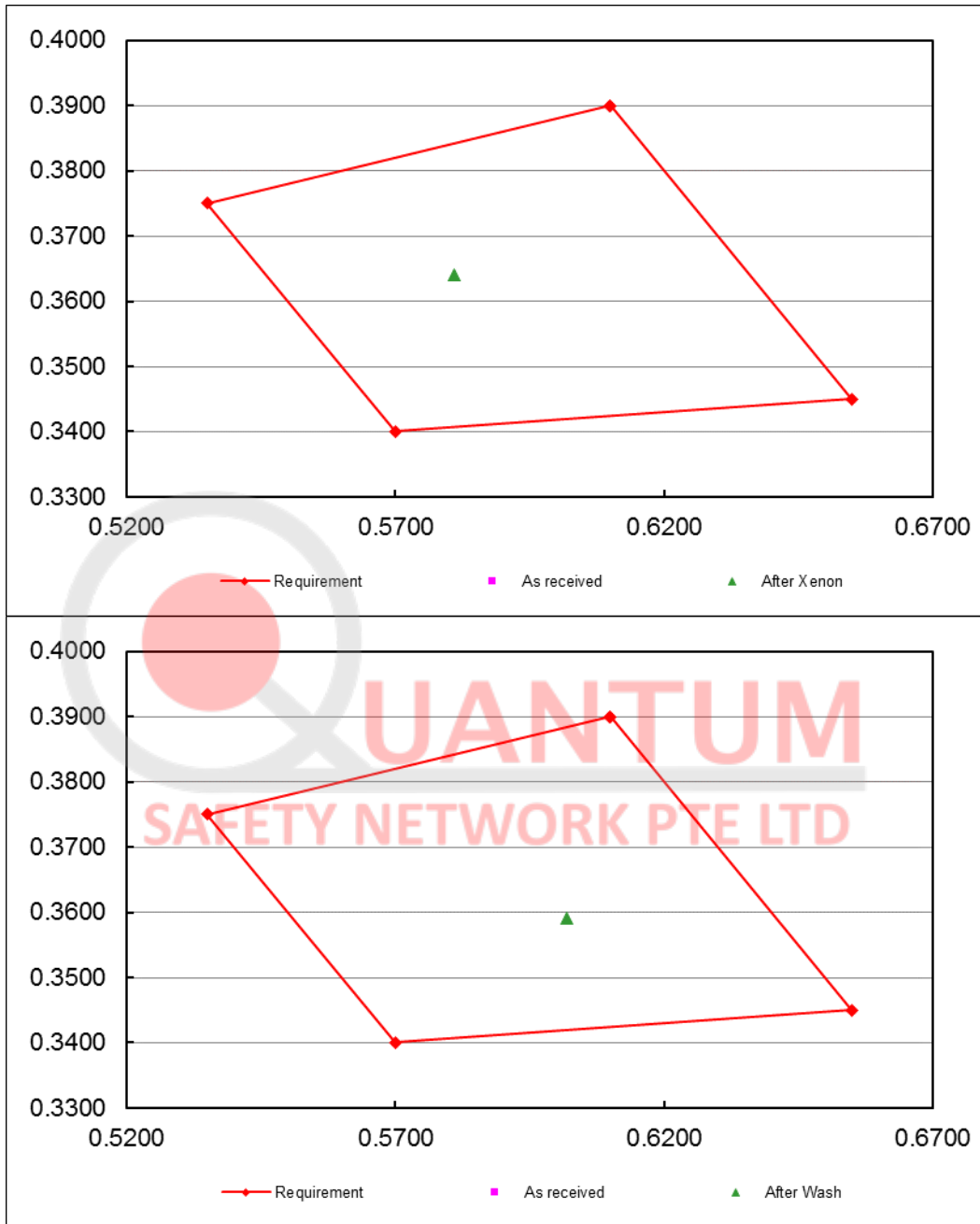
Color	Chromaticity coordinates		Minimum total luminance factor
	x	y	Y (%)
Fluorescent orange-red	0.610	0.390	40
	0.535	0.375	
	0.570	0.340	
	0.655	0.345	

Graphs:



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Sample A

TESTS FOR ALL MATERIALS

Test/Method	Section	ANSI/ISEA 107-2015 Requirement	Test Result	Pass/ Fail/ NA
Colorfastness Crocking AATCC 8-2013	8.2.1	Dry 3.0 Wet 3.0	Dry: 4.5 Wet: 4.5	Pass
Colorfastness Perspiration AATCC 15-2013	8.2.2	Color change 4.0 Staining 3.0	Color change: 4.5 Acetate: 4.0 Cotton: 4.5 Nylon: 4.0 Polyester: 4.5 Acrylic: 4.5 Wool: 4.0	Pass
Colorfastness Domestic Laundry AATCC 61-2013-2A 105°F (modified)	8.2.3 Table 4	Color change 4.5 Staining 3.0	Color change: 4.5 Acetate: 4.0 Cotton: 4.5 Nylon: 3.5 Polyester: 4.5 Acrylic: 4.5 Wool: 4.0	Pass
Colorfastness Water AATCC 107-2013	8.2.3 Table 4	Color change 3.0 Staining 3.0	Color change: 4.5 Acetate: 4.0 Cotton: 4.5 Nylon: 4.0 Polyester: 4.5 Acrylic: 4.5 Wool: 4.0	Pass
Dimensional change Domestic AATCC 135-2012 (3)IIIA(iii)@105°F	8.3.1	Woven L +/- 4% W +/-2%	25 th Cycle Length (%) = -0.8 Width (%) = NIL	Pass
Tear Resistance (Woven) ASTM D1424-09 (2013)	8.4.2	13 N (1326 gf) (2.92 lbf) Average force machine Average force cross-machine	Warp(N): >13 Weft(N): >13	Pass
Water Resistance AATCC 35-2013	8.5.2	≤ 1 gram of water penetration Level 1	New: 0.0 g After 25 washings: 0.0 g	Pass
Waterproof AATCC 127-2013	8.5.3	200 cm new and after 25 washings	New: >200 cm H ₂ O After 25 washings: >200 cm H ₂ O	Pass
Breathability ASTM E96-13 Procedure B or BW	8.6	Procedure BW 3600 g/m ² /24 hr hydrophilic	Procedure BW: 5852	Pass

Wash procedure: AATCC 135-2012, Test No. (3)(III)(A) (iii); Machine wash at 105±5 degree F with 1.8 kg total loading (type 1 ballast+ specimen) and 66±1g of 1993 AATCC standard reference detergent, permanent press cycle, tumble dry permanent press at 155±10 degree F



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Sample B

TESTS FOR ALL MATERIALS

Test/Method	Section	ANSI/ISEA 107-2015 Requirement	Test Result	Pass/ Fail/ NA
Colorfastness Crocking AATCC 8-2013	8.2.1	Dry 3.0 Wet 3.0	Dry: 4.5 Wet: 4.5	Pass
Colorfastness Perspiration AATCC 15-2013	8.2.2	Color change 4.0 Staining 3.0	Color change: 4.5 Acetate: 4.5 Cotton: 4.5 Nylon: 4.5 Polyester: 4.5 Acrylic: 4.5 Wool: 4.5	Pass
Colorfastness Domestic Laundry AATCC 61-2013-2A 105°F (modified)	8.2.3 Table 4	Color change 4.5 Staining 3.0	Color change: 4.5 Acetate: 4.5 Cotton: 4.5 Nylon: 4.5 Polyester: 4.5 Acrylic: 4.5 Wool: 4.5	Pass
Colorfastness Water AATCC 107-2013	8.2.3 Table 4	Color change 3.0 Staining 3.0	Color change: 4.5 Acetate: 4.5 Cotton: 4.5 Nylon: 4.5 Polyester: 4.5 Acrylic: 4.5 Wool: 4.5	Pass
Dimensional change Domestic AATCC 135-2012 (3)IIIA(iii)@105°F	8.3.1	Woven L +/- 4% W +/-2%	25 th Cycle Length (%) = -0.9 Width (%) = NIL	Pass
Tear Resistance (Woven) ASTM D1424-09 (2013)	8.4.2	13 N (1326 gf) (2.92 lbf) Average force machine Average force cross-machine	Warp(N): >13 Weft(N): >13	Pass
Water Resistance AATCC 35-2013	8.5.2	≤ 1 gram of water penetration Level 1	New: 0.0 g After 25 washings: 0.0 g	Pass
Waterproof AATCC 127-2013	8.5.3	200 cm new and after 5 washings	New: >200 cm H ₂ O After 25 washings: >200 cm H ₂ O	Pass
Breathability ASTM E96-13 Procedure B or BW	8.6	Procedure BW 3600 g/m ² /24 hr hydrophilic	Procedure BW: 6009	Pass

Wash procedure: AATCC 135-2012, Test No. (3)(III)(A) (iii); Machine wash at 105±5 degree F with 1.8 kg total loading (type 1 ballast+ specimen) and 66±1g of 1993 AATCC standard reference detergent, permanent press cycle, tumble dry permanent press at 155±10 degree F

*** End of Report ***



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Documents.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
Attention: To check the authenticity of testing / inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com