# E3. Declaration of Conformity

Declaration of Conformity to ANSI/ISEA 107-2020, High-Visibility Safety Apparel

Certificate No. J25022-2020
Supplier name and address: Tingley Rubber Corporation
1551 S. Washington Ave., Suite 403
Piscataway, NJ 08854
Product information (name, model number, part number or other information as applicable): Phase 3 Jacket, Fluorescent Yellow-Green
Model Number: J25022
Company declares that the above product meets all set requirements as stated in ANSI/ISEA 107-2020 as a compliant high-visibility safety item for Performance Class_3, Type_R_; All relevant materials have been tested with documents referenced under this certificate number. This item meets all design requirements and has been measured for appropriate amount of visible reflective material and background materials for the smallest size offered for this product.
1. VISIBLE BACKGROUND MATERIAL:

# Amount of visible background material (smallest size offered):

>0.80m<sup>2</sup> (1240 in.<sup>2</sup>)

Please list each material that contributes towards the amount **VISIBLE BACKGROUND MATERIAL** listed above. Use separate sheet for addition materials.

### Material 1 Identification

Test Lab: Intertek	Material Type:  Knitted X Woven  Other:				
Report #: GZHT91069845	Material Content (such as Polyester, Modacrylic, and others): Woven Polyester / PU / Fleece Trilaminate				
Date: 11/12/2021	Weight: 8.2 oz Color: FI. Yellow-Green				
Descriptions Wesser Debuster / DU / Elsees Tribusinets					

Description: Woven Polyester / PU / Fleece Trilaminate

### Material 2 Identification

Test Lab:	Material Type:  Knitted  Woven  Other:
Report #:	Material Content (such as Polyester, Modacrylic, and others):
Date:	Weight: Color:
Description:	

### **Material 3 Identification**

Test Lab:	Material Type:   Knitted   Woven   Other:
Report #:	Material Content (such as Polyester, Modacrylic, and others):
Date:	Weight: Color:
Description:	

### Declaration of Conformity (page 2 of 2)

### 2. VISIBLE RETROREFLECTIVE MATERIAL

• Amount of visible retroreflective material (smallest size offered) 0.20m<sup>2</sup> (310 in.<sup>2</sup>)

Please list each type of material that contributes towards VISIBLE RETROREFLECTIVE MATERIAL listed above.

### Material 1 Identification

Test Lab: Intertek		
Report #: GZHT91069017		
Date: 11/11/2021	Style #: VB211A	
Description: 50mm wide sew on silver reflective trim		

### **Material 2 Identification**

Test Lab:			
Report #:			
Date: Style #:			
Description:			

\*Use separate sheet for additional materials

### 3. OVERALL LUMINANCE

Check here if test report for optional Overall Luminance testing is attached.

The undersigned hereby warrants that he/she is authorized to legally bind the company identified above.

Signed: Mighan BOWSIR	<sub>Title:</sub> Product Manager

Print Name: Meghan Bowser

\_\_\_\_\_Date: 8/17/22



# Certificate of Test

### Issued To: **TRC NANJING REPRESENTATIVE**

Our Reference No.: GZHT9106984502

OFFICE ROOM 1809,#3 BUILDING DEYING INT'L PLAZA.#222 CHANGHONG ROAD. YUHUÁTAI DISTRICT.NANJING 210012

Certificate Issue Date: Nov 12, 2021

Attn: ANNE WANG

Description: One (1) piece of submitted sample said to be Hi-Vis Yellow Polyester-PU-Fleece Trilaminate.

We Hereby Declare That The Sample Described Above Has Been Tested By Intertek Testing Services Shenzhen Ltd. Guangzhou Branch And Meets The Requirements Of The Following Selected Tests Of ANSI/ISEA 107-2020.

Color Performance Of Background And Combined-performance Materials Colorfastness To Crocking Of Background Material Color Fastness To Perspiration Of Background Material Colorfastness To Water Of Background Material Water Repellency Protection Waterproof Protection Water Vapor Permeability Color Fastness To Laundry Of Background Material Dimension Change Of Background Material Tear Resistance

The test results are given in our report No.: GZHT91069845 Dated: Nov 1 Dated: Nov 12, 2021

Note:

This Declaration Applies To The Particular Sample Tested And To The Specific Tests Carried Out As Dated And Detailed In The Report(S) Referenced Above. This Certificate Is Valid Only For The Applicant's Selected Test Items And Must Not Be Used Without 1

- 2 The Attached Test Report. This Certificate Must Not Be Confused Neither With The EU Type Examination Certificate Released
- 3 By Nofified Body Nor With The Conformaity Declaration Released By Manufacturer.

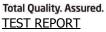
Authorized By: For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Guiliang Dong Senior Lab Manager

Page 1 Of 1

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch 深圳天祥质量技术服务有限公司广州分公司 (米功) 八年70 単35 米加(素の) 70 2 3 3 Room 02, 1-8/F. & Room 01, F101/E201/E301/E401/E501/E601/E701/E801, No.7-2, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, Guangdong, China 广州经济技术开发区科学域総数路 7 5 2 二第1-8 長 02 房、01 房 101、 E201、E301、E401、E501、E601、E201、E801 Tel: +86 208213 9001 Pax: +86 20 82089999 Postcode: 510663 (6)







Applicant: TRC NANJING REPRESENTATIVE OFFICE Date: Nov 12, 2021

ROOM 1809,#3 BUILDING, DEYING INT'L PLAZA, #222 CHANGHONG ROAD, YUHUATAI DISTRICT, NANJING 210012

Attn: ANNE WANG

Sample Description: One (1) piece of submitter	d sample s	aid to be Hi-Vis Yellow Polyester-PU-Fleece Trilaminate.
Standard		ANSI/ISEA 107-2020
Buyer	:	Tingley Rubber Corporation
Ref. No.	:	Hi-Vis YG Polyester-PU-Fleece Trilaminate, #HL2106242
Goods Exported to	:	U.S.A
Date Received/Date Test S	Started	Oct. 11, 2021
Date Final Information Co	nfirmed/	Nov. 10, 2021/
Date Payment Received:		

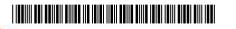
Test Result Please Refer To Attached Page(S).

Should you have any query on this report, you may contact at gzfootwear@intertek.com

Authorized By: For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

**Guiliang Dong** Senior Lab Manager

MR / lydiayang



Page 1 Of 9

Intertek Testing Services Shenzhen 4 to Guangzhou Branch 深圳天祥质量技术服务将限公司广州分公司 Room 02, 1-8/F. & Room 01, F101/E201/E301/E402/E501/E601/E701/E801, No.7-2, Caipin Road, Guangzhou Science City, GETDB, Guangzhou, Guangdong, China 广州经济技术开发区科学规论频路 7 号之二第 计 8 层 02 房、01 房 101、 E201、E301、1407、E501、E605、7501、E801 Tel: +86 208213 9001 Pax: 486 20 82089999 Postcode: 510663 (6

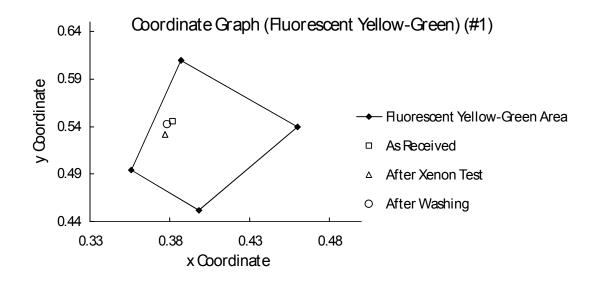




1 Color Performance Of Background And Combined-performance Materials (ANSI/ISEA 107-2020, 8.1.1 (Prior To Exposure Tests) & 8.1.2 (After Xenon Test) & ASTM E1164-17)

Sample	Color	Pre-condition	Chromaticity Coordinates		Total Luminance Factor	Requirement	Pass/Fail	
			3	х	У	Y (%)		
-	Fluorescent	As	0°	0.3814	0.5449	99	-	-
	Yellow- Green	Received (#1)	90°	0.3818	0.5449	100	-	-
			Mean	0.382	0.545	100	*	Pass
		After Xenon	0°	0.3768	0.5315	99	-	-
		Test (# & #1)	90°	0.3764	0.5326	98	-	-
			Mean	0.377	0.532	99	*	Pass
Note: The Specimen Is Backed By A Black Underlay With A Reflectance Of Less Than 0.04.								

Sample	Color	Pre-Condition	Chrom	naticity Coor	rdinates	Total Luminance Factor	<u>Applicant's</u> <u>Requirement</u>	Pass/Fail
			З	Х	У	Y (%)		
-	Fluorescent	After Washing	<b>0</b> °	0.3780	0.5435	92	-	-
	Yellow- Green	(#1 & #2)	90°	0.3788	0.5429	93	-	-
			Mean	0.378	0.543	92	*	Pass
Note: The Specimen Is Backed By A Black Underlay With A Reflectance Of Less Than 0.04.								



/ lydiayang

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Color Performance Of Background And Combined-performance Materials (Cont)

Remark: \* =

Color	Chromaticity Coordinates		Minimum Total Luminance Factor
	Х	У	Y (%)
	0.387	0.610	
Fluorescent	0.356	0.494	70
Yellow-Green	0.398	0.452	70
	0.460	0.540	

NOTE The Coordinate Of Sample Should Be Inside The Area Specified By The Table Above.

# = Xenon Test Based On AATCC 16.3-2014, Colorfastness To Light Xenon Arc. Expose The Materials To 40 AATCC Fading Units (170 KJ/m<sup>2</sup>@420nm).

### #1= Single Layer

#2 = ISO 6330:2012, Wash Condition:

130 0330.2012, Wash Condition.	
Washing Standard:	ISO 6330:2012
Machine:	Туре А
Reagent:	Reference Detergent 3
Washing Procedure:	4 N
Bleaching Procedure:	Do Not Bleach
Drying Procedure:	Do Not Tumble Dry
Ironing Procedure:	Do Not Iron
Professional Textile Care Procedure:	Do Not Dry Clean
Number Of Cycles:	25

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Page 3 Of 9





### 2 Colorfastness To Crocking Of Background Material (ANSI/ISEA 107-2020, 8.2.1 & AATCC 8-2016)

Preconditioning:	
Temperature:	<b>(20±2)</b> ℃
Relative Humidity:	(65±5)%
Period:	24 Hours

Sample	Test Condition	Results	<b>Requirement</b>	Pass / Fail
-	Dry	Grade 4.5	Min. Grade 3.0	Pass
	Wet	Grade 4.5	Min. Grade 3.0	Pass

3 Colorfastness To Perspiration Of Background Material (ANSI/ISEA 107-2020, 8.2.2 & AATCC 15-2013)

Test Condition:	
Load:	4.54 kg
Oven temperature:	(38 ± 1) ℃
Test Period:	6 h ± 5 min

Sample		Resu	lts	<u>Requirement</u>	<u>Pass / Fail</u>
-	Color Change:		Grade 4.5	Min. Grade 4.0	Pass
	Color Stain:	-Acetate	Grade 4.5		
		-Cotton	Grade 4.5		
		-Nylon	Grade 4.5		
		-Polyester	Grade 4.5	Min. Grade 3.0	Pass
		-Acrylic	Grade 4.5		
		-Wool	Grade 4.5		

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Page 4 Of 9





4 Colorfastness To Water Of Background Material (ANSI/ISEA 107-2020, 8.2.3 & AATCC 107-2013)

Test Condition:	
Pressure:	4.5 kg
Oven Temperature:	(38 ± 1) ℃
Test Period:	18 h

Sample			Results	Requirement	Pass / Fail
-	Color Change:		Grade 4.5	Min. Grade 3.0	Pass
	Staining	-Acetate	Grade 4.5		
		-Cotton	Grade 4.5		
		-Nylon	Grade 4.5		
		-Polyester	Grade 4.5	Min. Grade 3.0	Pass
		-Acrylic	Grade 4.5		
		-Wool	Grade 4.5		

5 Water Repellency Protection (Spray Test) (ANSI/ISEA 107-2020, 8.5.1 & AATCC 22-2017)

Specimen Conditioning:	
Temperature:	<b>(20±2)</b> ℃
Relative Humidity:	(65±5)%
Period:	24 Hours
Test Condition:	
Water Temperature:	<b>(27±1)</b> ℃
Water Volume:	250 ml
Spray Time	25 - 30 Seconds

Sample	Pre-treatment	Results	<u>Requirement</u>	Pass/Fail
-	As Received	90	Min. 90	Pass
	After 5 Laundry Cycles (*)	70	Min. 70	Pass

Remark: \* = AATCC 135-2018 (Home Laundering)

/ lydiayang



Page 5 Of 9





### 6 Waterproof Protection (Hydrostatic Pressure Test) (ANSI/ISEA 107-2020, 8.5.3 & AATCC 127-2017)

Specimen Conditioning: Temperature: Relative Humidity:	(20±2)℃ (65±5)%
Period: Test Condition:	24 Hours
Equipment Type: Water Temperature: Gradient	Hydrostatic Head Tester (21±2)℃ 60 mbar/min

Sample	Pre-treatment	Specimen	Results	<u>Requirement</u>	Pass/Fail
-		1	> 500 cm	Min. 200 cm	Pass
	As Received	2	> 500 cm	Min. 200 cm	Pass
		3	> 500 cm	Min. 200 cm	Pass
		1	> 500 cm	Min. 200 cm	Pass
	After 5 Laundry Cycles(*)	2	> 500 cm	Min. 200 cm	Pass
		3	> 500 cm	Min. 200 cm	Pass

Sample	Pre-treatment	Specimen	Results	<u>Applicant's</u> <u>Requirement</u>	Pass/Fail
-		1	> 500 cm	Min. 200 cm	Pass
	After 25 Laundry Cycles(*)	2	> 500 cm	Min. 200 cm	Pass
		3	> 500 cm	Min. 200 cm	Pass

Remark: \* = AATCC 135-2018 (Home Laundering)

/ lydiayang

Intertek Testing Services: Shenzhen Atd. Guangzhou Branch 深圳天祥质量技术服务有限公司广州分公司 Room 02, 1-8/F. & Room 01, E101/E201/E301/E401/E501/E501/E601/E701/E801, No.7-2, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, Guangdong, China 广州经济技术开发区科学课授频路 7.8.2 二第十一8.5.02 房、01 房 101、 E201、E3011 (101、E501、E605、1011 E801 Tel: +86 208213 9001 Fax: 1962.03 82089909 Postcode: 510663 Page 6 Of 9





7 Water Vapor Permeability For Background Materials Classified As Breathable (ANSI/ISEA 107-2020, 8.6 & ASTM E96-16, Procedure B – Upright For Microporous)

Test Condition:	
Temperature:	<b>23</b> ℃
Relative Humidity:	50%

Sample	Specimen	Results (WVT)	<u>Requirement</u>	Pass/Fail
	1	644.4 g/m <sup>2</sup> /24 Hours	-	-
	2	627.6 g/m <sup>2</sup> /24 Hours	-	-
	3	636.0 g/m <sup>2</sup> /24 Hours	-	-
	Average	636.0 g/m <sup>2</sup> /24 Hours	*	Pass

Remark:  $* = Min. 600 \text{ g/m}^2/24 \text{ Hours For Procedure B}$ 

Remark: This Test Was Conducted At Room 801/901, No. 8, East BaoYing Road, Huangpu District, Guangzhou.

8 Color Fastness To Laundry Of Background Material (ANSI/ISEA 107-2020, 8.2.3)

Test Condition:

Test Method: AATCC 61-2013-2A, Modified To Use 105°F (Domestic Laundry)

Sample			Results	Requirement	Pass / Fail
	Color Change:		Grade 4.5	Min. Grade 4.5	Pass
	Color Stain:	-Acetate	Grade 4.0		
		-Cotton	Grade 4.5		
		-Nylon	Grade 3.5		
		-Polyester	Grade 4.5	Min. Grade 3.0	Pass
		-Acrylic	Grade 4.5		
		-Wool	Grade 4.5		

Remark: This Test Was Conducted At Room 801/901, No. 8, East BaoYing Road, Huangpu District, Guangzhou.

/ lydiayang



Page 7 Of 9





### 9 Dimension Change Of Background Material (Home Laundering) (ANSI/ISEA 107-2020, 8.3 & ASTM D1776-16)

Test Condition:	
Standard Code:	
Cleaning Cycles:	

AATCC 135-2012 (3)(III)(A)(iii) 5

Sample		Results		Pass / Fail
	Length	-0.4%	*	Pass
	Width	-0.4%	*	Pass

 Remark: \* =
 Material Type
 Knit Fabrics And All Other Materials

 Length
 Not Exceed ±7%

 Width
 Not Exceed ±5%

Remark: This Test Was Conducted At Room 801/901, No. 8, East BaoYing Road, Huangpu District, Guangzhou.

10 Tear Resistance Of Woven Materials (Uncoated, Coated Or Laminate) (ANSI/ISEA 107-2020, 8.4.2 & ASTM D1424-09(2019))

Preconditioning:	
Temperature:	<b>(20±2)</b> ℃
Relative Humidity:	(65±5)%
Period:	24 hours

Sample	Specimen	Machine Direction	Requirement	Pass/Fail
	1	52.8 N	-	-
	2	51.7 N	-	-
	3	49.6 N	-	-
	4	53.3 N	-	-
	5	47.8 N	-	-
	Average	51.0 N	Min. 13 N	Pass
			•	
	Specimen	Cross-Machine Direction	Requirement	Pass/Fail
	1	27.5 N	-	-
	2	39.1 N	-	-
	3	40.8 N	-	-
	4	28.5 N	-	-
	5	31.0 N	-	-
	Average	33.4 N	Min. 13 N	Pass

Remark: N = Newton

Remark: This Test Was Conducted At Room 801/901, No. 8, East BaoYing Road, Huangpu District, Guangzhou.

/ lydiayang



Page 8 Of 9







End Of Report

This report is made solely on the basis of your instructions and/or information and materials supplied by you. It is not intended to be a recommendation for any particular course of action. Intertek does not accept a duty of care or any other responsibility to any person other than the Client in respect of this report and only accepts liability to the Client insofar as is expressly contained in the terms and conditions governing Intertek's provision of services to you. Intertek makes no warranties or representations either express or implied with respect to this report save as provided for in those terms and conditions. We have aimed to conduct the Review on a diligent and careful basis and we do not accept any liability to you for any loss arising out of or in connection with this report, in contract, tort, by statute or otherwise, except in the event of our gross negligence or wilful misconduct. No copy of the test report(except for full text copy) shall be made without the written approval by Intertek.



Page 9 Of 9

/ lydiayang



# **Certificate of Test**

# Issued To: TRC NANJING REPRESENTATIVE OFFICE Our Reference No.: GZHT9106901702 ROOM 1809,#3 BUILDING, Certificate Issue Date: Nov 11, 2021 DEYING INT'L PLAZA,#222 CHANGHONG ROAD, YUHUATAI DISTRICT,NANJING 210012 YUHUATAI DISTRICT,NANJING 210012 Attn: ANNE WANG Description: One (1) piece of submitted sample said to be Silver VB211A WP Reflective Tape.

We Hereby Declare That The Sample Described Above Has Been Tested By Intertek Testing Services Shenzhen Ltd. Guangzhou Branch And Meets The Requirements Of The Following Selected Tests Of ANSI/ISEA 107-2020.

Retroreflective Performance Prior to Test Exposure Retroreflection After Abrasion Retroreflection After Flexing Retroreflection After Folding At Cold Temperatures Retroreflection After Temperature Variation Retroreflection After Washing Retroreflection (Wet Performance)

The test results are given in our report No.: GZHT91069017 Dated: Nov 11, 2021

Note:

- 1 This Declaration Applies To The Particular Sample Tested And To The Specific Tests Carried Out As Dated And Detailed In The Report(S) Referenced Above.
- 2 This Certificate Is Valid Only For The Applicant's Selected Test Items And Must Not Be Used Without The Attached Test Report.
- 3 This Certificate Must Not Be Confused Neither With The EU Type Examination Certificate Released By Nofified Body Nor With The Conformaity Declaration Released By Manufacturer.

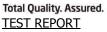
Authorized By: For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Guiliang Dong Senior Lab Manager

Page 1 Of 1

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch 深圳天祥质量技 水服务/新限公司)广州分公司 Room 02, 1-8/F. & Room 01, E101/E201/E301/E401/E501/E501/E701/E801, No.7-2, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, Guangdong, China 广州经济技术开发区科学域终境路 7.5.2.二第1-85月02 房、01 房 101、 E201、E301、E401、E501、E601、E701、E801 Tel: +86 208213 9001 Pax: #86.20 82089909 Postcode: 510663





Applicant:



TRC NANJING REPRESENTATIVE OFFICE ROOM 1809,#3 BUILDING, DEYING INT'L PLAZA,#222 CHANGHONG ROAD, Date: Nov 11, 2021

Attn: ANNE WANG

Sample Description: One (1) piece of submitted	i sample s	aid to be Silver VB211A WP Reflective Tape.
Standard		ANSI/ISEA 107-2020
Buyer	:	Tingley Rubber Corporation
Ref.	:	VB211A WP Reflective Tape, #20210820-3
Goods Exported to	:	U.S.A.
Date Received/Date Test S	tarted	Oct. 09, 2021
Date Final Information Cor	nfirmed/	Nov. 11, 2021/
Date Payment Received:		

YUHUATAI DISTRICT, NANJING 210012

Test Result Please Refer To Attached Page(S).

Should you have any query on this report, you may contact at gzfootwear@intertek.com

Authorized By: For Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

Guiliang Dong Senior Lab Manager

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Page 1 Of 6

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch 深圳天祥质量技术服务/ 旗及句广州分公司 Room 02, 1-8/F. & Room 01, E101/E201/E301/E401/E501/E601/E701/E801, No.7-2, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, Guangdong, China 广州经济技术开发区科智规控频路 7 员之二第二 8 是 02 房、01 房 101、 E201、E301 C103、E501、E605、1201、E801 Tel: +86 208213 9001 Fax: 186 20 82089909 Postcode: 510663





TEST REPORT Tests Conducted (As Requested By The Applicant)

## 1 Retroreflective Performance Prior to Test Exposure (ANSI/ISEA 107-2020, 9.1 & 10.3 & ASTM E809-08(2013))

Sample	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2=0$ )	Coeffici Retroref cd/(lx	lection	Requirement	Pass/Fail
-	0.20° [12′]	5°	504	500	Min. 330/248 cd/(lx·m <sup>2</sup> ) (*)	Pass
		20°	475	468	Min. 290/218 cd/(lx·m <sup>2</sup> ) (*)	Pass
		30°	398	391	Min. 180/135 cd/(lx·m <sup>2</sup> ) (*)	Pass
		40°	232	216	Min. 65/47 cd/(lx·m <sup>2</sup> ) (*)	Pass
	0.33°[20′]	5°	288	286	Min. 250/188 cd/(lx·m <sup>2</sup> ) (*)	Pass
		20°	274	267	Min. 200/150 cd/(lx·m <sup>2</sup> ) (*)	Pass
		30°	246	241	Min. 170/128 cd/(lx·m <sup>2</sup> ) (*)	Pass
		40°	171	168	Min. 60/45 cd/(lx·m <sup>2</sup> ) (*)	Pass
	1.0°	5°	82.5	80.7	Min. 25/18.8 cd/(lx·m <sup>2</sup> ) (*)	Pass
		20°	83.9	83.6	Min. 15/11.3 cd/(lx·m <sup>2</sup> ) (*)	Pass
		30°	79.9	79.5	Min. 12/9 cd/(lx·m <sup>2</sup> ) (*)	Pass
		40°	49.7	45.2	Min. 10/7.5 cd/(lx·m <sup>2</sup> ) (*)	Pass
	1.5° [1° 30']	5°	19.8	18.5	Min. 10/7.5 cd/(lx·m <sup>2</sup> ) (*)	Pass
		20°	21.5	21.0	Min. 7/5.25 cd/(lx·m <sup>2</sup> ) (*)	Pass
		30°	24.7	24.4	Min. 5/3.75 cd/(lx·m <sup>2</sup> ) (*)	Pass
		40°	22.7	22.4	Min. 4/3 cd/(lx·m <sup>2</sup> ) (*)	Pass

\*= Retroreflective Material Shall Comply With The Minimum Requirements For The Coefficient Of Retroreflection At The One Of The Two Rotation Angles, And Shall Be Not Less Than 75% Of The Values At The Other Rotation Angle.

Note: Take Measurements At  $\epsilon 1=0^\circ\,$  And  $\epsilon 2=90^\circ\,$ . Maximum Value Is Recorded On Left Side Of The Result Column And The Other Value On Right Side Of Test Result Column.



Intertek Testing Services Shenzhen Ltd. Guangzhou Branch 深圳天祥质量技 末服务 有限公司) 一州分公司 Room 02, 1-8/F. & Room 01 F101/E201/E301/E401/E501/E601/E701/E801, No.7-2, Caipin Road, Guangzhou Science City, GETDB, Guangzhou, Guangdong, China 广州经济技术开发区科学师治频路 7.8.2 二第十一名 [20 2 房、01 房 101、 E201、E301、1401、E501、E604、1201 & E801 Tel: +86 208213 9001 Fax: 13620 82089909 Postcode: 510663 Page 2 Of 6





### 2 Retroreflection After Abrasion (ANSI/ISEA 107-2020, 9.2 & 10.4.1)

Test Exposure	Test Method
Abrasion	ISO 12947-2:2016, Pressure: 9 kPa, 5,000 Cycles

Sample		x-Direction (Horizontal: $\epsilon = 0^{\circ}$ )				
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>	
-	0.20° [12′]	5°	471 cd/(lx⋅m²)	Min. 100 cd/(lx·m <sup>2</sup> )	Pass	

Sample		y-Direction (Vertical: $\varepsilon = 90^{\circ}$ )					
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>		
-	0.20° [12′]	5°	470 cd/(lx⋅m²)	Min. 75 cd/(lx·m <sup>2</sup> )	Pass		

### 3 Retroreflection After Flexing (ANSI/ISEA 107-2020, 9.2 & 10.4.2)

Test Exposure	Test Method
Flexing	ISO 7854:1995, Method A, 7,500 Cycles

Sample	x-Direction (Horizontal: $\epsilon = 0^{\circ}$ )				
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	Requirement	<u>Pass / Fail</u>
-	0.20° [12′]	5°	474 cd/(lx⋅m²)	Min. 100 cd/(lx·m <sup>2</sup> )	Pass

Sample	e	y-Direction (Vertical: $\epsilon = 90^{\circ}$ )			
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>
_	0.20° [12′]	5°	474 cd/(lx·m <sup>2</sup> )	Min. 75 cd/(lx·m <sup>2</sup> )	Pass

/ lydiayang

Page 3 Of 6





### 4 Retroreflection After Folding At Cold Temperatures (ANSI/ISEA 107-2020, 9.2 & 10.4.3)

Test Exposure	Test Method
Folding At Cold Temperatures	ISO 4675:2017, Exposure At (-20 $\pm$ 1)°C For 4 Hours

Sample	x-Direction (Horizontal: $\epsilon=0^{\circ}$ )				
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>
-	0.20° [12′]	<b>5</b> °	500 cd/(lx⋅m²)	Min. 100 cd/(lx·m <sup>2</sup> )	Pass

Sample	y-Direction (Vertical: $\epsilon$ =90°)				
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>
-	0.20° [12′]	5°	496 cd/(lx⋅m²)	Min. 75 cd/(lx·m <sup>2</sup> )	Pass

### 5 Retroreflection After Temperature Variation (ANSI/ISEA 107-2020, 9.2 & 10.4.4)

Test Exposure	Test Method
Temperature Variation	<ul> <li>a) For 12 H At 50±2℃; Immediately Followed By</li> <li>b) 20 H At -30±2℃; Immediately Followed By</li> </ul>
	c) For At Least 2 H At 20±2°C And 65±5 % Relative Humidity

Sample		x-Direction (Horizontal: $\epsilon = 0^{\circ}$ )			
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>
-	0.20° [12′]	5°	503 cd/(lx·m <sup>2</sup> )	Min. 100 cd/(lx·m <sup>2</sup> )	Pass

Sample	y-Direction (Vertical: $\epsilon=90^{\circ}$ )				
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>
-	0.20° [12′]	5°	499 cd/(lx⋅m²)	Min. 75 cd/(lx·m²)	Pass

/ lydiayang



Page 4 Of 6





## 6 Retroreflection After Washing (ANSI/ISEA 107-2020, 9.2 & 10.4.5.2 (Washing))

Wash Condition:	
Washing Standard:	ISO 6330:2012
Machine:	Туре А
Reagent:	Reference Detergent 3
Washing Procedure:	6N
Bleaching Procedure:	-
Drying Procedure:	After Each Wash Cycle Dried The Samples At 50±5°C.
Ironing Procedure:	-
Professional Textile Care Procedure:	-
Number Of Cycles:	25

Sample		x-Direction (Horizontal: $\epsilon = 0^{\circ}$ )			
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>
-	0.20° [12′]	5°	278 cd/(lx·m <sup>2</sup> )	Min. 100 cd/(lx·m <sup>2</sup> )	Pass

Sample	y-Direction (Vertical: ε=90°)				
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	Requirement	<u>Pass / Fail</u>
-	0.20° [12′]	5°	270 cd/(lx·m <sup>2</sup> )	Min. 75 cd/( $lx \cdot m^2$ )	Pass

### 7 Retroreflection (Wet Performance) (ANSI/ISEA 107-2020, 9.2 & Appendix B)

Test Exposure	Test Method	
Retroreflective Wet Performance	ANSI/ISEA 107-2020, Appendix B	

Sample	x-Direction (Horizontal: $\epsilon=0^{\circ}$ )						
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	<u>Requirement</u>	<u>Pass / Fail</u>		
-	0.20° [12′]	5°	358 cd/(lx⋅m²)	Min. 100 cd/(lx·m <sup>2</sup> )	Pass		

Sample	y-Direction (Vertical: $\varepsilon = 90^{\circ}$ )						
	Observation Angle	Entrance Angle $\beta_1$ ( $\beta_2 = 0^\circ$ )	Coefficient Of Retroreflection	Requirement	Pass / Fail		
-	0.20° [12′]	5°	343 cd/(lx⋅m²)	Min. 75 cd/(lx⋅m²)	Pass		

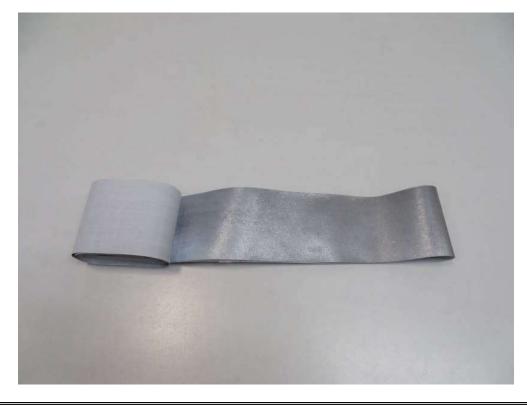
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Page 5 Of 6







End Of Report

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