

UTON TEXTILE TECHNOLOGY CO.,LTD.
NO.789 KENING ROAD, JIANGNING DISTRICT, NANJING CITY, JIANGSU PROVINCE, CHINA

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

Sample Description : (A)Reflective stripe (high-light chemical fiber)

Sample Color : (A)silver grey

Composition : (A)100% polyester

Style No. : UTH

Other Info. : Sample Size: 5CM / Fabric reference code: UTH

Proposed Care Instruction : -

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

Sample Receiving Date : Jun 22, 2021

Testing Period : Jun 22, 2021 - Jun 28, 2021

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 Testing Center



Sara Guo (Account Executive)



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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

Test Result

Personal Protective Equipment - American National Standard for High-Visibility Safety Apparel and Accessories-2020
ANSI/ISEA 107-2020

Section 9.1 Retroreflective Performance Requirements Prior to Test Exposures

(ANSI/ISEA 107-2020, Section 10.3)

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)		Pass/Fail
			ε ₁ =0°	ε ₂ =90°	
12'(0.2°)	5°	330/ 248	450	450	Pass
	20°	290/ 218	454	452	Pass
	30°	180/ 135	449	442	Pass
	40°	65/ 48.8	397	386	Pass
20'(0.33°)	5°	250/ 188	320	318	Pass
	20°	200/ 150	325	324	Pass
	30°	170/ 128	321	317	Pass
	40°	60/ 45	294	287	Pass
1°	5°	25/ 18.8	32.0	31.8	Pass
	20°	15/ 11.3	33.0	32.2	Pass
	30°	12/ 9	33.4	32.2	Pass
	40°	10/ 7.5	28.7	27.4	Pass
1°30'(1.5°)	5°	10/ 7.5	15.3	15.3	Pass
	20°	7/ 5.25	14.8	14.7	Pass
	30°	5/ 3.75	15.1	15.0	Pass
	40°	4/ 3	14.1	13.2	Pass

Take measurements at ε₁=0° and ε₂=90°. Record maximum value on left side of test result column and the other value on right side of test result column.

Section 9.2 Retroreflective Performance Requirements after Abrasion

(Section 10.3 & 10.4.1; ISO 12947-2:1998, Martindale Wear & Abrasion Tester: 9kPa Pressure, 5000cycles)

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)		Pass/Fail
12'(0.2°)	5°	R _A (12'/5°) > 100 at ε ₁	ε ₁ =0°	398	Pass
		R _A (12'/5°) > 75 at ε ₂	ε ₂ =90°	393	

Section 9.2 Retroreflective Performance Requirements after Flexing

(Section 10.3 & 10.4.2; ISO 7854:1995, method A, 7500cycles)

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)		Pass/Fail
12'(0.2°)	5°	R _A (12'/5°) > 100 at ε ₁	ε ₁ =0°	399	Pass
		R _A (12'/5°) > 75 at ε ₂	ε ₂ =90°	395	



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Testing Center-Technical Services 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

Section 9.2 Retroreflective Performance Requirements after Folding at Cold Temperatures

(Section 10.3& 10.4.3; ISO 4675:2017, (-20±1) °C)

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)	Pass/Fail
12'(0.2°)	5°	R _A (12'/5°) > 100 at ε ₁	ε ₁ =0° 403	Pass
		R _A (12'/5°) > 75 at ε ₂	ε ₂ =90° 400	

Section 9.2 Retroreflective Performance Requirements after Exposure to Temperature Variation

(ANSI/ISEA 107-2020, Section 10.3& 10.4.4;)

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)	Pass/Fail
12'(0.2°)	5°	R _A (12'/5°) > 100 at ε ₁	ε ₁ =0° 401	Pass
		R _A (12'/5°) > 75 at ε ₂	ε ₂ =90° 398	

Section 9.2 Retroreflective Performance Requirements after Washing

(Section 10.3& 10.4.5, ISO 6330:2012:Using horizontal axis, front-loading type machine; Procedure No.6N, Machine Wash At 60°C; with 2kg total dry mass (Type III (100% Polyester) Ballast+Specimen) and 'ECE(A)' detergent+ Sodium Perborate+ TAED, Stress-free Dried at 50±5°C)

After 30 washes

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)	Pass/Fail
12'(0.2°)	5°	R _A (12'/5°) > 100 at ε ₁	ε ₁ =0° 336	Pass
		R _A (12'/5°) > 75 at ε ₂	ε ₂ =90° 335	

Section 9.2 Retroreflective Performance Requirements under Wet Condition

(ANSI/ISEA 107-2020, Section 10.3 & 10.4.6)

Observation Angle	Entrance Angle	Minimum cd/(lx. m ²)	Test Result cd/(lx. m ²)	Pass/Fail
12'(0.2°)	5°	R _A (12'/5°) > 100 at ε ₁	ε ₁ =0° 211	Pass
		R _A (12'/5°) > 75 at ε ₂	ε ₂ =90° 207	



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