

ETONG TEXTILE TECHNOLOGY CO.,LTD
NO.789 KENING ROAD, JIANGNING

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

Sample Description : Woven reflective fabric: 100% cotton/resin glue in silver for adult
Style No. : ET-3019

Proposed Care Instruction : Machine wash warm, 40°C ,only non-chlorine bleach when needed, tumble dry
low, use medium iron, 150°C dry-clean, normal cycle

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

Sample Receiving Date : Mar 08, 2017
Testing Period : Mar 30, 2017 - Apr 11, 2017
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



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Test Result

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

Combined-performance and Retroreflective Material

PHOTOMETRIC PERFORMANCE REQUIREMENTS					
Take measurements at $\epsilon_1=0^\circ$ and $\epsilon_2=90^\circ$. Record maximum value on left side of test result column and the other value on right side of test result column.					
ANSI/ISEA 107-2015 Requirement Section 9.1, Table 5			Test Result cd/(lx.m²)		Pass/Fail
Observation Angle	Entrance Angle	Minimum cd/(lx.m²)			
12' (0.2°)	5°	330/ 248	576	550	Pass
	20°	290/ 218	608	584	Pass
	30°	180/ 135	571	522	Pass
	40°	65/ 47	412	330	Pass
20' (0.33°)	5°	250/ 188	378	365	Pass
	20°	200/ 150	392	381	Pass
	30°	170/ 128	381	373	Pass
	40°	60/ 45	315	270	Pass
1.0°	5°	25/ 18.8	46.5	43.1	Pass
	20°	15/ 11.3	49.4	46.1	Pass
	30°	12/ 9	54.1	50.6	Pass
	40°	10/ 7.5	39.5	38.2	Pass
1.5°	5°	10/ 7.5	19.3	19.3	Pass
	20°	7/ 5.25	18.7	17.6	Pass
	30°	5/ 3.75	20.4	16.8	Pass
	40°	4/ 3	25.6	22.9	Pass



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PHYSICAL PERFORMANCE REQUIREMENTS				
Test	Section	NSI/ISEA 107-2015 Requirement	Test Result	Pass/Fail
Retroreflection, after abrasion	9.2 10.4.1	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :485 ϵ_2 :476	Pass
Retroreflection, after flexing	9.2 10.4.2	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :566 ϵ_2 :558	Pass
Retroreflection, after folding at cold temperatures	9.2 10.4.3	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :516 ϵ_2 :513	Pass
Retroreflection, after exposure to temperature variation	9.2 10.4.4	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :549 ϵ_2 :533	Pass
Retroreflection, after 30 washes	9.2 9.4.5	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :600 ϵ_2 :589	Pass
Retroreflection, after 5 dry cleaning	9.2 10.4.5	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :598 ϵ_2 :591	Pass
Retroreflection wet performance	9.2 10.4.6	$R_A(0.2^\circ/5^\circ) > 100 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_1 $R_A(0.2^\circ/5^\circ) > 75 \text{ cd}/(\text{lx}\cdot\text{m}^2)$ at ϵ_2	ϵ_1 :298 ϵ_2 :292	Pass

Note: Washing procedure ISO 6330: 2012:Washing program No. 4N; Using horizontal axis, front-loading type machine: Machine wash at 40°C with 2kg total dry mass(type III (100% polyester) ballast+ specimen)and ECE detergent + sodium perborate+ TAED, tumble dry low less than 60 degree C.

Note: Drycleaning procedure ISO 3759:2011/ISO 3175-2:2010; Normal materials.

Table 5. Minimum coefficient of retroreflection in cd/(lx · m2) for retroreflective or combined-performance material

Observation angle	Entrance angle			
	5°	20°	30°	40°
0.20° [12']	330	290	180	65
0.33° [20']	250	200	170	60
1.00°	25	15	12	10
1.50° [1°30']	10	7	5	4



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Sample Photo



*** End of Report ***



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