

SUPER BRIGHT REFLECTIVE MATERIAL CO., LTD.

NORTH SIX LANE 1 TANG XIA HUA YUAN, TANG XIA TOWN, DONG GUAN GUANG DONG, China

**THIS REPORT CANCELS AND SUPERSEDES THE TEST REPORT NO.SL92119312992401TX DATE: 2021-11-08 ISSUED BY SGS (Guangzhou)
UPDATED TEST INFORMATION.**

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

Sample Description : Reflective Film

Sample Color : (A)silver

Composition : (A)PET

Style No. : YS-801AH-T

Manufacturer : SUPER BRIGHT REFLECTIVE MATERIAL CO., LTD.

Country of Destination : Europe and america

Sample Receiving Date : Oct 25, 2021

Testing Period : Oct 25, 2021 - Nov 08, 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).

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

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Conclusion	A	Remark
Clause 6.1 Retroreflection for Retroreflective Material	PASS	
Clause 6.2 Retroreflection after Abrasion	PASS	
Clause 6.2 Retroreflection After Dry cleaning	PASS	
Clause 6.2 Retroreflection after Flexing	PASS	
Clause 6.2 Retroreflection After Folding At Cold Temperatures	PASS	
Clause 6.2 Retroreflection After Temperature Variation	PASS	
Clause 6.2 Retroreflection Under The Influence Of Rainfall	PASS	

Remark(s) : PASS=Meet Client's/General Requirement

Signed for and on behalf of
SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch



Lily Wang (Account Manager)



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Test Result

Clause 6.1 Retroreflection for Retroreflective Material (EN ISO 20471:2013+A1: 2016 Clause 7.3)

Entrance Angle	Observation Angle	Measured value (cd/(lx. m ²))		Orientation Sensitive	Minimum Requirement (cd/(lx. m ²))			Result (Pass/Fail)
		0°	90°		Orientation Sensitive		Non-Orientation Sensitive	
5°	12'	474	479	No	/	/	330	Pass
	20'	371	375	No	/	/	250	Pass
	1°	35.5	35.2	No	/	/	25	Pass
	1°30'	35.0	34.8	No	/	/	10	Pass
20°	12'	482	486	No	/	/	290	Pass
	20'	380	378	No	/	/	200	Pass
	1°	35.1	35.4	No	/	/	15	Pass
	1°30'	35.3	34.9	No	/	/	7	Pass
30°	12'	481	481	No	/	/	180	Pass
	20'	376	376	No	/	/	170	Pass
	1°	34.6	34.4	No	/	/	12	Pass
	1°30'	28.0	28.0	No	/	/	5	Pass
40°	12'	445	452	No	/	/	65	Pass
	20'	355	359	No	/	/	60	Pass
	1°	32.0	31.7	No	/	/	10	Pass
	1°30'	32.3	32.1	No	/	/	4	Pass

Remark:

- When measured at two rotation angles $\epsilon = 0^\circ$ and $\epsilon = 90^\circ$, materials having coefficients of retroreflection that differ by more than 15% are defined as orientation sensitive.
- Orientation-sensitive material shall comply with the minimum requirements for the coefficient of retroreflection stated in Table 4 of EN ISO 20471 at one of the two rotation angles. The coefficient of retroreflection shall be not less than 75% of the values stated in Table 4 (Minimum coefficient of retroreflection for separate performance retroreflective material) at the other rotation angle.



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Table 4 – Minimum coefficient of retroreflection in $\text{cd}/(\text{lx} \cdot \text{m}^2)$ for separate performance retroreflective material

Observation angle	Entrance angle β_1 ($\beta_2 = 0$)			
	5°	20°	30°	40°
12'	330	290	180	65
20'	250	200	170	60
1°	25	15	12	10
1°30'	10	7	5	4

Table 5 – Minimum coefficient of retroreflection in $\text{cd}/(\text{lx} \cdot \text{m}^2)$ for combined performance material

Observation angle	Entrance angle β_1 ($\beta_2 = 0$)			
	5°	20°	30°	40°
12'	65	50	20	5
20'	25	20	5	1.75
1°	5	4	3	1
1°30'	1.5	1	1	0.5

Clause 6.2 Retroreflection after Abrasion

(Clause 7.3&7.4.1, ISO 12947-2:2016, Martindale Wear & Abrasion Tester: 9kPa Pressure, 5000cycles)

<u>Entrance Angle</u>	<u>Observation Angle</u>	<u>Measured value (cd/(lx. m²))</u>		<u>Orientation Sensitive</u>	<u>Minimum Requirement (cd/(lx. m²))</u>		<u>Result (Pass/Fail)</u>	
		0°	90°		Orientation Sensitive	Non-orientation Sensitive		
5°	12'	434	417	No	/	/	100	Pass

Clause 6.2 Retroreflection after Dry cleaning

(Clause 7.3&7.5.3, ISO 3175-2:2010: Normal materials.)

After 10 dry cleaning

<u>Entrance Angle</u>	<u>Observation Angle</u>	<u>Measured value (cd/(lx. m²))</u>		<u>Orientation Sensitive</u>	<u>Minimum Requirement (cd/(lx. m²))</u>		<u>Result (Pass/Fail)</u>	
		0°	90°		Orientation Sensitive	Non-orientation Sensitive		
5°	12'	466	470	No	/	/	100	Pass

Clause 6.2 Retroreflection after Flexing

EN ISO 20471:2013+A1:2016 Clause 7.3&7.4.2

Condition: A:ISO 7854:1995, method A, 7500cycles

Separate Performance Retroreflective Material

Separate Performance Test Procedure Material								
Entrance Angle	Observation Angle	Measured value (cd/(lx. m ²))		Orientation Sensitive	Minimum Requirement (cd/(lx. m ²))			Result (Pass/Fail)
		0°	90°		Orientation Sensitive		Non-orientation Sensitive	
5°	12'	442	438	No	/	/	100	Pass



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Clause 6.2 Retroreflection After Folding At Cold Temperatures

EN ISO 20471:2013+A1:2016 Clause 7.3&7.4.3

Condition: A:ISO 4675:2017, (-20±2) °C

Separate Performance Retroreflective Material

Entrance Angle	Observation Angle	Measured value (cd/(lx. m ²))		Orientation Sensitive	Minimum Requirement (cd/(lx. m ²))		Result (Pass/Fail)
		0°	90°		Orientation Sensitive	Non-orientation Sensitive	
5°	12'	412	412	No	/	100	Pass

Clause 6.2 Retroreflection After Temperature Variation

EN ISO 20471:2013+A1:2016 Clause 7.3&7.4.4

Condition: A:12h at (50±2) °C, immediately followed by 20h at (-30±2) °C

Separate Performance Retroreflective Material

Entrance Angle	Observation Angle	Measured value (cd/(lx. m ²))		Orientation Sensitive	Minimum Requirement (cd/(lx. m ²))		Result (Pass/Fail)
		0°	90°		Orientation Sensitive	Non-orientation Sensitive	
5°	12'	459	448	No	/	100	Pass

Clause 6.2 Retroreflection under the influence of rainfall

(EN ISO 20471:2013+A1: 2016 Clause 7.3&7.4.5&Annex C)

Separate Performance Retroreflective Material

Entrance Angle	Observation Angle	Measured value (cd/(lx. m ²))		Minimum Requirement (cd/(lx. m ²))	Result (Pass/Fail)
		0°	90°		
5°	12'	229	206	100	Pass



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Sample Photo



The statement of conformity in this test report is only based on measured values by the laboratory and does not take their uncertainties into consideration.

End of Report



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