

TEST REPORT

No. : SHIN160802837CCM

Date : Aug. 16, 2016

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

Sample Name : 8MM TRANSPARENT TOUGHENED GLASS
Sample Number : SHIN160802837CCM
SGS Ref No. : NBHL1608010842SD
Test Required : Please see the next page(s)
Test Standard : EN 12150-1:2015

Date of Receipt : Aug. 05, 2016
Test Period : Aug. 05, 2016 to Aug. 16, 2016
Test result(s) : For further details, please refer to the following page(s)

***** To be continued*****

Signed for SGS-CSTC Standards
Technical Services (Shanghai) Co., Ltd.

Erin Huang
Authorized signatory



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Test Standard:

1. EN 12150-1:2015 Glass in building – thermally toughened soda lime silicate safety glass – Part 1: Definition and description
2. EN 1288-3:2000 Glass in building – Determination of the bending strength of glass – Part 3: Test with specimen supported at two points (four point bending)
3. EN 12600:2002 Glass in building – Pendulum test – Impact test method and classification for flat glass

Test Result:

Clause	Test Item	Test Method	Requirement	Test Result	Conclusion
6.1	Nominal thickness and thickness tolerances	EN 12150-1:2015	±0.3mm (Nominal Thickness 8mm)	-0.26mm	Pass
				-0.24mm	
				-0.24mm	
				-0.22mm	
6.2	Length	EN 12150-1:2015	— (Client does not declare the nominal length and width.)	1938mm	—
	Width			876mm	
	Squareness			≤4mm	
6.3	Flatness	EN 12150-1:2015	Overall bow: ≤3.0mm/m	0.12mm/m	Pass
			Roller Wave: ≤0.3mm	0.04mm	
			Edge lift: ≤0.3mm	0.07mm	

***** To be continued*****



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Clause	Test Item	Test Method	Requirement	Test Result	Conclusion
8	Fragmentation test	EN 12150-1:2015	5 specimens must be tested and meet the requirements: ①In any area of 50mm×50mm, the minimum particle count shall not be less than 40 pieces; ②A few long fragment will be allowed, but the length of the longest particles shall not exceed 100mm	Particle count of 5 specimens were 72,87,72,86 and 77, particle with longest length were 16.37, 14.53,14.71,15.65 and 15.06mm	Pass
9.3	Thermal durability	EN 12150-1:2015	Specimen must resist against sudden temperature changes and temperature differentials up to 200K	Specimens remained unbroken when sudden temperature change and temperature differential were 200K	Pass
9.4	Mechanical strength	EN 1288-3:2000	$\geq 120\text{N/mm}^2$	Lower 5%-quantile : 141.4N/mm^2 Average: 179.3N/mm^2	Pass

***** To be continued*****



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Clause	Test Item	Test Method	Requirement	Test Result	Conclusion
9.5	Classification of performance under accidental human impact	EN 12600:2002	— (See note 1)	Performance Classification: 1(C)2	— (See note 1)

Note 1: As per EN 12150-1:2015 Clause 9.5 Classification of performance under accidental human impact.

The safety glass should be classified by testing in accordance with EN 12600. The performance classification should be given as:

$\alpha(\beta)\Phi$

where,

α is the highest drop height class at which the product either did not break or broke in accordance with a) or b) of clause 4 of EN 12600;

Classification	Drop height(mm)
3	190
2	450
1	1200

β is the mode of breakage;

Type A – mode of breakage typical of annealed glass;

Type B – mode of breakage typical of laminated glass;

Type C – mode of breakage typical of toughened glass;

Φ is the highest drop height class at which the product either did not break or when broke, broke in accordance with a) of clause 4 of EN 12600.

***** To be continued*****



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The detail of accidental human impact:

At 190mm: all 4 specimens did not break;

At 450mm: all 4 specimens did not break;

At 1200mm: 3 specimens did not break and 1 specimen broke in accordance with b) of clause 4;

So the performance classification is given as 1(C)2

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Sample Photos:



Dimensions and tolerances test & impact test



Fragmentation test & Mechanical strength

***** To be continued*****



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Thermal durability

Test photo:



After fragmentation test

***** End of report *****



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