TEST REPORT
EN 12150-1: 2000
GLASS IN BUILDING-THERMALLY TOUGHENED SODA LIME SILICATE SAFETY GLASS

Report Reference No. ..... :	GZ10010951-2
Tested by (name and signature) ..... :	Syanson Xu
Approved by (name and signature) .. :	Starry Li
Date of issue ..... :	Mar 5, 2010
Contents ..... :	Total test report 6 pages including: Report text: 5 pages Appendix A for product photos: 1 page
Testing Laboratory name ..... :	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Address ..... :	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China 510663
Testing location ..... :	Same as above
Applicant's name ..... :	Hangzhou Showersun Bathroom ware Co., Ltd
Address ..... :	Hezhuang Industrial Zone, Xiaoshan, Hangzhou city, Zhenjiang Province, China
Test specification:	
Standard ..... :	EN12150-1: 2000
Non-standard test method…….. :	N/A
Test item description ..... :	Transparent tempered glass
Trade Mark ..... :	—
Model and/or type reference ..... :	6mm transparent tempered glass
Manufacturer ..... :	Hangzhou Showersun Bathroom ware Co., Ltd
Rating(s) ..... :	—

CONCLUSION:

The submitted samples were tested and found to **COMPLY WITH** all clauses of EN12150-1: 2000.

Test item particulars
Classification of installation and use ..... : —
Supply Connection ..... : —
Possible test case verdicts
- Test case does not apply to the test object ..... : N/A
- Test object does meet the requirement..... : P (Pass)
- Test object does not meet the requirement ..... : F (Fail)
Testing
Date of receipt of test item ..... : Jan 25, 2010
Date (s) of performance of tests ..... : Jan 25, 2010 to Feb 10, 2010

General remarks:

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

"(see remark #)" refers to a remark appended to the report.
"(see Appendix #)" refers to an appendix appended to the report.

Throughout this report a comma (point) is used as the decimal separator.

When determining the test result, measurement uncertainty has been considered.

General product information:

6mm transparent tempered glass.

Sample used for testing: 200×200mm, 1100×360mm, 1938×876mm

EN 12150-1: 2000			
Clause	Requirement - Test	Result - Remark	Verdict
6	Dimensions and tolerance		P
6.1	Nominal thickness and thickness tolerances the nominal thickness and thickness tolerance are give those given in the relevant product standard, some of which are reproduced in table 1 in this standard.	Nominal thickness: 6mm actual measured: spl. | 4sides thickness (mm) 1 | 5.96 | 5.94 | 5.96 | 5.96 2 | 5.98 | 5.96 | 5.96 | 5.98 3 | 5.94 | 5.96 | 5.96 | 5.94	P
6.2	Width and length (sizes)		P
6.2.1	General when thermally toughened soda lime silicate safety glass dimensions are quoted for rectangular panes, it shall be made clear which dimension is the width, B, and which is the length, H, when related to its installed position.	The shape of sample is rectangular. H:1938mm, B: 876mm	P
6.2.2	Maximum and minimum sizes For maximum and minimum sizes, the manufacturer should be consulted.		P
6.2.3	Tolerance and squareness The nominal dimension for width and length being given, the tolerances of finished pane sizes shall comply the tolerances given in table 2 of this standard.		P
6.2.4	Edge deformation produced by vertical toughening For vertical toughening glass, the centres of the tong marks are situated up to a maximum of 20mm in from the edge. A deformation of the edge less than 2mm can be produced in the region of the tong mark and there may also be an area of optical distortion. These deformations are included in the tolerances in table 2 of this standard.		N/A

EN 12150-1: 2000			
Clause	Requirement - Test	Result - Remark	Verdict
6.3	Flatness The maximum allowable values for the overall bow, when measured according to 6.3.2, and local bow, when measured according to 6.3.3, for glass without holes and /or notches and/or cut-out are given in table 3 of this standard.		P
7	Edge work, holes, notches and cut-outs.		P
7.1	Warning Thermally toughened soda lime silicate safety glass should not be cut, sawed, drilled or edge worked after toughening.		P
7.1	Edge working of glass for toughening Every glass which is to be thermally toughened han to be edge worked prior to toughening.		P
7.3	Profiled edges Various other edge profiles can be manufactured with different types of edgework.		P
7.4	Round holes This standard considers only round holes in glass that is not less than 4 mm nominal thickness. The diameter of holes, limitations on position of holes, tolerances on hole diameters and tolerances on position of holes should comply this standard.		N/A
7.5	Notches and cut-outs Many configurations of notches and cut-outs can be supplied. The manufacturer should be consulted about edge working of notches and cut-outs.		N/A
7.6	Shaped panes Many non-rectangular shapes can be manufactured and the manufacturer should be consulted.		P

<table>
<tr><th colspan="4">EN 12150-1: 2000</th></tr>
<tr><th>Clause</th><th>Requirement - Test</th><th>Result - Remark</th><th>Verdict</th></tr>
<tr><td>8</td><td>Fragmentation test
The fragmentation test determines whether the glass breaks in the manner prescribed for a thermally toughened soda lime silicate safety glass.
The minimum particle count values:
Nominal thickness 3mm: minimum 15;
Nominal thickness 4-12mm: minimum 40.
The length of the longest particle shall not exceed 100mm.</td><td>5 specimens with nominal size 1100mmX360mm were tested.
Value of the particle count and longest particle was shown as follow:
<table>
<tr><th>spl.</th><th>Total particles</th><th>Longest length(mm)</th></tr>
<tr><td>1</td><td>104</td><td>13.5</td></tr>
<tr><td>2</td><td>99</td><td>13.1</td></tr>
<tr><td>3</td><td>100</td><td>13.4</td></tr>
<tr><td>4</td><td>102</td><td>13.7</td></tr>
<tr><td>5</td><td>102</td><td>13.6</td></tr>
</table></td><td>P</td></tr>
<tr><td>9</td><td>Other physical characteristic</td><td></td><td>P</td></tr>
<tr><td>9.3</td><td>Thermal durability
The mechanical properties of thermally toughened soda lime silicate safety glass are unchanged for continuous service up to 250 ℃ and are unaffected by sub-zero temperatures. Thermally toughened soda lime silicate safety glass is capable of resisting both sudden temperature changes and temperature differentials up to 200K.</td><td>Not broken.</td><td>P</td></tr>
<tr><td>9.4</td><td>Mechanical strength
The mechanical strength of the tempered glass was determined according to EN 1288-3
For the float type of glass, the values for mechanical strength shall more than 120 N/mm²……..……..:</td><td>Bending strength
Minimum 353.69 N/mm²
Average: 379.74 N/mm²</td><td>P</td></tr>
<tr><td>9.5</td><td>Classification of performance under accidental human impact.
Pendulum body impact resistance shall be determined and classified in accordance with
EN12600…..……:</td><td>Drop height class: class 1
Mode of breakage: 1(C) 1</td><td>—</td></tr>
</table>

**********End of Page**********

Appendix A

Product photos

1100x360mm glass

1938x876mm glass

200x200mm glass

**********End of Report**********

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China 510663
Tel: 86 20 8213 9688 Fax: 86 20 3205 7538