

A

Resistance to Hard Body Impact Test Report

To

BS EN 356:2000

For

The Art Laminated Glass

Manufactured by

Glass Label Ltd.

GLASS LABEL LTD
Your Design Partner



Prepared By: JAS (Inspection & Testing) Ltd.

Date: 23rd October 2019

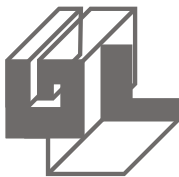
Our Ref.: J19-127-R01-191023



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1. TEST INFORMATION

Test Consultant	JAS (Inspection & Testing) Ltd.
Tester	Sam Lau
Glass Manufacturer (China)	Glass Label Ltd.
Address of Manufacturer	Unit E, 6/F, Hing Yip Centre, 31 Hing Yip Street, Kwun Tong, Kowloon, Hong Kong
Manufacture Date	16 th October 2019
Test Date	21 st October 2019
Identification of the specimen	Art Laminated Glass
Selected Procedure	EN 356:2000
Glass Thickness (mm)	5mm Float + 1.14 SGP + 1mm Woven Metal Mesh + 1.14 SGP + 5mm Float
Room Temperature	25°C
Humidity	85%
Condition period	24 hours
Impactor	Ø100±0.2mm, 4.11±0.06kg polished steel ball
Impactor Holding equipment	The impactor holding equipment is enable adjustment of the drop height to the required tolerance and allows the impactor is accelerated only by gravitational forces and falls vertically.
Test piece support apparatus	A rigid frame connection to the concrete based and ensured the test pieces were champed in a horizontal position.
Laser Distance meter	Ensure the required drop height.
Weighting scale	Ensure the mass of the impactor.



2. PROCEDURE

2.1 Test Method for Drop Test

a. Installation of test piece

The test piece shall be placed horizontally into the clamping frame of the test piece support apparatus.

The surface of the test piece shall be marked to indicate the location of the clamping frame relative to the test piece. This is to check the test piece during the test.

b. Test Procedure

For categories P1A, P2A, P3A and P4A, the impactor shall be dropped on to each test piece three times from the same height, in such a way the impact positions form a pattern of an equilateral triangle with a side length of (130 ± 20) mm around the geometric centre of the test piece, with one side of the triangle parallel to a short side of the specimen. The impact position opposite to this side of the triangle shall be hit first.

For category P5A, The above procedure shall be repeated a total of three times on each test piece, giving nine impacts, three on each point of the triangle.

Loose fragments shall be removed from the test piece after each impact.

After each impact, the test piece shall be checked for penetration by the impactor. A test piece shall be regarded as being penetrated if the impactor has completely passed through the test piece before five seconds has elapsed since the time of impact.

After each impact, the test piece shall also be examined for signs of slippage from the clamping frame. The test is invalid if any edge of the test piece has moved more than 5mm in the clamping frame. If this is the case, then to prevent slippage, this shall be stated in the test report and the type test attestation.

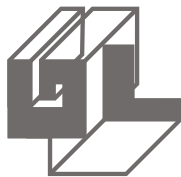


3. RESULT

3.1 5mm Float + 1.14 SGP + 1mm Woven Metal Mesh + 1.14 SGP +

5mm Float

Performance under a 4.11kg polished steel ball at 9m Drop Height									
Manufacture date	16 th October 2019			Test Date			21 st October 2019		
Identification	5mm Float + 1.14 SGP + 1mm Woven Metal Mesh + 1.14 SGP + 5mm Float								
Sample #1				Measured Thk: 12.78mm			Size: 900mm x1100mm		
Impact	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th
Penetration of Impactor	No	No	No	No	No	No	No	No	No
Remark	No opening, no penetration of the ball was observed after all 3x3x9m impacts. Satisfactory.								
Sample #2				Measured Thk: 12.84mm			Size: 900mm x1100mm		
Impact	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th
Penetration of Impactor	No	No	No	No	No	No	No	No	No
Remark	No opening, no penetration of the ball was observed after all 3x3x9m impacts. Satisfactory.								
Sample #3				Measured Thk: 12.84mm			Size: 900mm x1100mm		
Impact	1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th	9 th
Penetration of Impactor	No	No	No	No	No	No	No	No	No
Remark	No opening, no penetration of the ball was observed after all 3x3x9m impacts. Satisfactory.								
Category of resistance	EN356 P5A								





4. SUMMARY

- 4.1 The following glass thicknesses were tested to the specification of BS EN 356:2000 Drop Test and satisfactorily complied with the respective Category of resistance:

Art Laminated Glass Thickness (mm)	BS EN 356:2000
5mm Float + 1.14 SGP + 1mm Woven Metal Mesh + 1.14 SGP + 5mm Float	BS EN356 P5A

I certify this to be a true record of the test.

Tested by

Mr. Sam Lau

Certified by

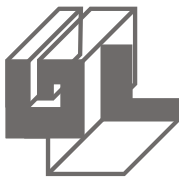
Mr. Clifford A. Bury



Appendix

i. Photos

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INSPECTION OF WORK - PHOTO RECORD



Photo 1
The impactor holding equipment.



Photo 2
The weight of the impactor was checked.



Photo 3
The impact height was checked.



Photo 4
The impact positions form the pattern of an equilateral triangle parallel length of 130mm



Photo 5
The thickness of the sample was checked.



Photo 6
The impactor did not penetrate the specimen after 3x3x9m impacts.