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CNCGLASS TECHNICAL NOTE

CNCGLASS Ionoplast Laminated Glass — 8 + 1.52 + 8 mm, BS 6206

Laminated glass of 8 mm annealed glass + 1.52 mm ionoplast interlayer + 8 mm annealed glass was evaluated for impact classification under BS 6206:1981. Four specimens, each 865 mm × 1930 mm, were struck by a test impactor at drop heights of 305 mm, 457 mm and 1219 mm. The classification recorded for this sample is Class A.

This document is a CNCGLASS technical note and performance summary. It is not a third-party test certificate or a certificate of conformity, and it does not authorise the use of any third-party laboratory mark.

About the specimen

The construction is laminated safety glass comprising 8 mm annealed glass, a 1.52 mm ionoplast (ionic) interlayer, and 8 mm annealed glass. Four specimens were prepared, each 865 mm × 1930 mm (865 ± 3 mm wide × 1930 ± 3 mm high), and clamped in the test frame. Measured thickness on the four specimens was 17.55 mm, 17.54 mm, 17.53 mm and 17.55 mm respectively.

Method and procedure

The evaluation followed BS 6206:1981, Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings. Procedures were those given in BS 6206, Appendix A, Clause A.4. The purpose was the impact classification of safety glass for building use under that specification.

Each specimen was hit by a test impactor at drop heights of 305 mm, 457 mm and 1219 mm. The procedure was repeated for the other specimens.

Results at 305 mm

At a drop height of 305 mm, none of the four specimens broke. Each was recorded as Class C.

Specimen	Size (mm)	Thickness (mm)	Observation	Class
1	865 × 1930	17.55	No Breakage	C
2	865 × 1930	17.54	No Breakage	C
3	865 × 1930	17.53	No Breakage	C
4	865 × 1930	17.55	No Breakage	C

Results at 457 mm

At a drop height of 457 mm, none of the four specimens broke. Each was recorded as Class B.

Specimen	Size (mm)	Thickness (mm)	Observation	Class
1	865 × 1930	17.55	No Breakage	B
2	865 × 1930	17.54	No Breakage	B
3	865 × 1930	17.53	No Breakage	B
4	865 × 1930	17.55	No Breakage	B

Results at 1219 mm

At a drop height of 1219 mm, specimen 1 did not break. Specimens 2, 3 and 4 broke safely. Each of the four specimens was recorded as Class A.

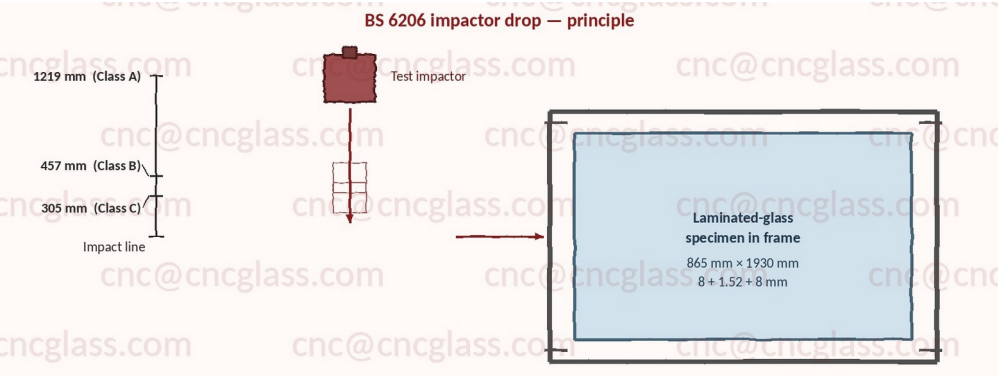
Specimen	Size (mm)	Thickness (mm)	Observation	Class
1	865 × 1930	17.55	No Breakage	A
2	865 × 1930	17.54	Break Safely	A
3	865 × 1930	17.53	Break Safely	A
4	865 × 1930	17.55	Break Safely	A

Safe breakage

For the specimens that broke at 1219 mm, both 8 mm annealed glass layers were broken and numerous cracks appeared. No shear or opening developed within the body of the test piece. Particles detached from the test piece up to 3 min after impact weighed no more than the mass equivalent of 10000 mm² of the original test piece. The largest single particle weighed less than the mass equivalent of 4400 mm² of the original test piece. Therefore, under BS 6206 clause 5.3.3, those test pieces broke safely.

Classification

Under BS 6206:1981, the classification recorded for this sample is Class A. This is a performance summary for the construction described above; it is not a third-party certificate.



Principle of the BS 6206 impact test: a test impactor is dropped from 305 mm, 457 mm and 1219 mm against a framed laminated-glass specimen of 8 mm annealed glass + 1.52 mm ionoplast interlayer + 8 mm annealed glass.

Commentary

Class A is the most severe impact class in BS 6206 and corresponds to a 1219 mm drop. Class B corresponds to a 457 mm drop, and Class C to a 305 mm drop. A Class A result also covers the lower drop heights. In this evaluation, all four specimens were Class C at 305 mm and Class B at 457 mm, with no breakage at those heights, and Class A at 1219 mm.

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