



Heat Strengthened Glass

Description

Dual Seal heat strengthened glass is manufactured to order, being cut to the required size prior to being subjected to a heating and cooling process, whereby compressive stress is induced at the glass surfaces, combined with balancing tensile stress in the centre of the glass.

Heat strengthened glass has an increased strength of up to twice that of ordinary annealed glass of the same thickness.

Heat strengthened glass, if broken, breaks in a similar manner to ordinary annealed glass and cannot be used in areas where safety glazing is required.

However, heat strengthened glass may be laminated where safety glazing is specified in Building Regulations or local Standards.

Manufacturing Sizes

Heat Strengthened Glass	Glass Thickness mm	Max. long edge mm	Max. short edge mm	Max. Area m ²
	6 to 12	4800	2800	8

Enquiries outside the scope of this table are welcome.

There are limitations on the minimum glass thickness that may be used in large sizes, since the glass must be able to sustain any applicable live loads and be practical and safe to handle, transport and process.

Shapes

Certain shapes are possible to process, please submit enquiries.

A rigid template may be required for irregular or asymmetrical shapes.

Dimensional Tolerances

The tolerances on length and width of 6 to 12mm float glass are $\leq 3000\text{mm} \pm 2\text{mm}$, $>3000\text{mm} \pm 3\text{mm}$.

Flatness Tolerance

During the heating process the glass oscillates back and forth on ceramic rollers, and may reach a temperature in excess of 650 degrees Centigrade, which is beyond its' softening point. At the end of each oscillation the glass stops moving momentarily and at this point it may sag slightly between the rollers, resulting in a phenomenon known as roller wave.

Roller wave will be visible, when viewed outside in reflection, due to the nature of the toughening process.

Due to the nature of the heat strengthening process, a certain amount of bow may be induced into the glass which can be measured by supporting the glass vertically, at its quarter points, the bow is the difference between the true vertical and the concave surface of the glass.

The overall bow is a maximum of 2mm per linear metre.

Roller wave, may occur when the glass is heat strengthened, which is measured as a maximum of 0.2mm. Lower tolerances may be possible for specific contracts, enquiries are welcome.

In some situations it may be desirable for roller wave to have a specific orientation. This may possible, although it cannot always be guaranteed, since it is occasionally uneconomical to process in a specific orientation, and is also subject to maximum glass dimensions.



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Work on Heat Strengthened Glass

All work on heat strengthened glass must be carried out prior to the strengthening process. Any attempt to cut or process the glass after heat strengthening will result in breakage.

Edgework is an arriss, as standard. Ground, smoothed, polished or mitred edges may also be supplied.

Where holes, cut-outs and notches are required, enquiries are welcome. There may be limitations in relation to the number and position of holes, notches and cut-outs that may be processed successfully. The positional tolerance on all processing work is + 2 mm, - 2 mm.

Quality

Heat strengthened glass is manufactured and tested to comply with EN 1863: parts 1 & 2: Glass in building. Heat strengthened soda lime silicate safety glass.

Where rectangles which have a length to width ratio of greater than 10:1, it may not be possible to ensure that the flatness conforms to current standards.

Weight

Heat strengthened glass weighs the same as ordinary annealed float glass for use in buildings.

Glass weighs 2.5 Kg/m² for each millimetre in thickness;

Glass Thickness mm	Weight Kg/m ²
4	10
6	15
8	20
10	25
12	30

Thermal Durability

The mechanical properties of heat strengthened glass are unchanged for continuous service up to 200°C and are unaffected by sub-zero temperatures.

They are capable of resisting both sudden temperature changes and temperature differentials up to 100 K.

The information quoted in this publication is only relevant to the performance of Dual Seal Glass products.

This publication gives a general description of the products and materials. It is the responsibility of the user to ensure that their use is appropriate for any particular application and that such application complies with all relevant local and national legislation, standards, codes of practice and other requirements.

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