dualseal
a vandaglas company

heat soak tested thermally toughened glass

Description

Dual Seal heat soak tested thermally toughened safety glass is manufactured to order. It is 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 soak tested thermally toughened safety glass has an increased strength of up to five times that of ordinary annealed glass of the same thickness. A distinguishing property of Heat soak tested thermally toughened glass is that, should it be broken, it will fragment into small relatively harmless pieces, which significantly reduce the likelihood of causing serious injury.

Manufacturing Sizes

Dualspan on clear 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 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 ≤ 3000mm ± 2mm, > 3000mm ± 3mm.

Flatness Tolerance

During the heating process the glass oscillates back and forth on ceramic rollers and may reach a temperature in excess of 640 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. The maximum allowable roller wave is 0.2mm for float glass products of 6mm thickness and above. Lower tolerances may be possible for specific contracts, enquiries are welcome. Roller wave will be visible, when viewed outside in reflection. Due to the nature of the toughening process a certain amount of bow may be induced into the glass, the bow is the difference between the true vertical and the concave surface of the glass. The overall bow is a maximum of 2 mm per metre and a maximum edge lift of 0.2mm.

Work on Toughened Glass

All work on heat soak tested thermally toughened safety glass must be carried out prior to the toughening process. Any attempt to cut or process the glass after toughening will weaken the glass and may result in breakage. Edgework is an arriss, as standard. 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.

Heat Soak Tested Thermally Toughened Glass

Quality

Heat soak tested thermally toughened safety glass is manufactured and tested to comply with EN 12150: parts 1 & 2: Glass in building. Thermally toughened soda lime silicate safety glass; and EN 14179 parts 1 and 2 Heat soaked thermally toughened soda lime silicate safety glass. It is tested in accordance with EN 12600: Glass in building - Pendulum test - Impact test method and classification for flat 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.

Heat Soak Testing

Heat soak testing is an additional process applied to thermally toughened glass only. It is a thermal process, where the glass temperature is gradually raised and then maintained at 290 degrees C for a period of 2 hours, then cooled to room temperature. The heat soak process is designed to minimise the risk of spontaneous fragmentation when installed in a building, due to specific types of nickel sulphide inclusions. The requirement for this additional process should be identified prior to quotation stage for any project.

Glazing

The installation of toughened safety glass should be in accordance with B.S. 8000: Code of Practice for Glazing and B.S. 6262: Glazing for Buildings.

Weight

Toughened safety 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 soak tested thermally toughened glass are unchanged for continuous service up to 250oC and are unaffected by sub-zero temperatures. They are capable of resisting both sudden temperature changes and temperature differentials up to 200 K.

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