



Toughened Glass Spandrel Panels

Description

Toughened glass spandrel panels are coated on one surface with a coloured ceramic enamel, which is fired permanently onto the glass surface, and designed to contrast or harmonise with the vision glass in buildings.

Spandrels are primarily used to obscure floor slabs, ducting, and pipework or block walls. The panels are for use with a back-up wall or internal skin, but may also be installed without, providing they have a suitable, opaque, interior finish.



Glass spandrel panels may be combined with insulating materials, to satisfy thermal insulation requirements for buildings in a variety of constructions.

Spandrels are available in most RAL colours. Colours may also be selected from B.S. 5252 or a Pantone reference.

Shapes

Certain shapes are possible to process, please submit enquiries.

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

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 the above table are welcome.

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 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, which may also occur due to eccentricity of the rollers at operating temperature. 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



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surface of the glass.

The overall bow is a maximum of 2mm per metre and a maximum edge lift of 0.2mm.

Work on Spandrel Glass

All work on spandrel 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.

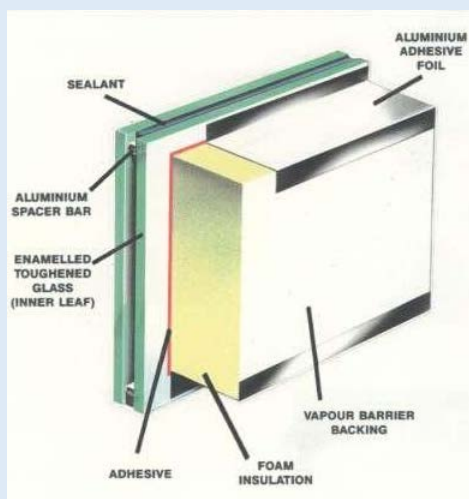
Insulated Spandrel Glass

Spandrel glass may be single glass or incorporated into a multiple glazing unit and in either case insulation can be bonded to the rear surface.

There are two standard insulating materials, rigid polyurethane foam, or phenolic fire retardant foam, both have a backing foil or may be contained within a metal sheet tray.

In situations where a non-combustible spandrel is required, mineral fibre may be enclosed within a tray which is bonded to the rear of the spandrel.

The foam insulation may be bonded directly to the glass as a cut size slab. If required, the edges may be covered in an aluminium tape, to resist surface spread of flame, as seen in the following diagram.



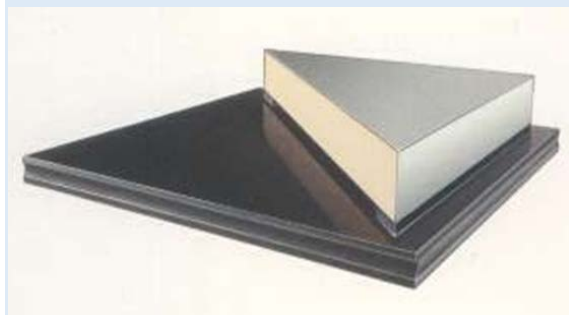
Where it is necessary to include the insulation within a tray attached to the rear of the spandrel panel, as is common practice with mineral fibre insulation, one of the following three designs may be specified.

Trays are available in mill finish aluminium, where there is a back-up wall, or in situations without a back-up wall, where the tray will be seen, a polyester powder coated finish to suit internal colour schemes. In most cases the edge thickness can be made to suit the glazing width.

Top Hat Tray



Flush Edge Tray



Special Edge Tray



Quality

Toughened spandrel glass panels are

manufactured and tested to comply with EN 12150: Thermally toughened soda lime silicate safety glass. Also, where required, in accordance with EN 14179: Heat soak tested thermally toughened safety glass.

Insulated spandrels may also be designed to satisfy the requirements of B.S. 476: Fire tests on building materials and structures.

Storage and handling

Glass spandrel panels should be handled with great care at all times.

Correct stacking and supporting of all glass products, in a manner which prevents the glass from sagging, helps to avoid breakages. To prevent edge damage, the glass must stand on strips of something softer than glass, such as wood or felt.

Water must not be allowed to reach any edges of stacked glass as it can be drawn between the glass by capillary action and cause damage to the glass surfaces.

Glass should be unpacked on arrival at site and checked for conformity to specification. Any damage should be reported immediately.

Use protective clothing and equipment (a minimum of gloves). Lift the glass in a safe manner using appropriate equipment.

Special care must be taken to protect glass spandrel panels, especially the edges, from impact damage (knocks, abrasions and excessive local pressure) which can cause breakage, scratches, scars, chips or shells.

Before use, the glass should again be checked for damage and the size checked with the frame to ensure that the glazing can be carried out as specified.

Spandrel glass must be protected from site contamination such as welding spatter, or cementitious or plaster products, or adhesives.

Panel Specification

When specifying glass spandrel panels, the following information may be used as

reference to possible options, which should be included at both quotation and order stages.

The requirement for aluminium tape on the perimeter edges should also be included if necessary for the project specification.

a – Glass thickness

b – Glass type

c – Enamel colour

d – Insulation thickness or U-value

e – Type of insulation material

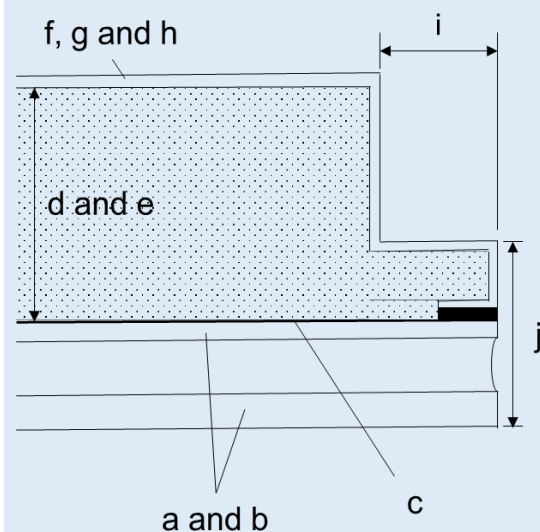
f – Tray material

g – Tray surface finish

h – Vented tray

i – Edge thickness

j – Edge detail, flush or stepped, etc.



Glazing

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

U-value

There are many different types of glass and insulation material permutations that may be used in the construction of insulated spandrel panels. Please contact our



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technical department for detailed U-value performance.

Thermal Durability

The mechanical properties of toughened glass spandrels are unchanged for continuous service up to 250°C and are unaffected by sub-zero temperatures. They are capable of resisting both sudden temperature changes and temperature differentials up to 200K.



Appearance

Glass spandrels may have small pinholes, lines and areas of differing density of the enamel. These should not be visually disturbing when the panels are viewed from the exterior of the building, in daylight, against a uniform opaque background.

Glass spandrels are designed to be positioned in non-vision areas only, and not where they may be viewed from inside the building against a bright sky, when the unavoidable irregularities and pinholes in the enamel finish may be evident.

Read-Through with Light Colours

Non-uniformity of colour density is a characteristic of all ceramic frit spandrel panels, which can produce read-through that is eliminated when the panel is properly backed-up.

In some instances with very pale or light colours, however, it may be evident even in properly backed-up panels and may not meet the visual criteria expected by the customer.

A spandrel is designed to be viewed from the building's exterior, fully "backed-up," Dual Seal do not accept any responsibility for non-uniformity of colour appearance or density, "read-through," or pinholes which appear in spandrel panels which are used in inappropriate applications.

Glass spandrels are not suitable for use in decorative situations where the glass is to be viewed at a distance of less than 4.5 metres unless an alternative visual quality standard has been agreed prior to supply.



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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Dual Seal Glass Limited

403 Leeds Road

Huddersfield

HD2 1XU

Tel: 01484 420030