



**dualseal**  
a vandaglas company

## dualspan toughened glass spandrel panels

### Description

Dualspan 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. Dualspan is primarily used to obscure floor slabs, ducting, 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. Dualspan is available in most RAL colours. Colours may also be selected from B.S. 5252 or a Pantone reference. Textured external glass finishes may be achieved by coating the reverse of certain patterned glass types, enquiries are welcome.

### Manufacturing sizes

sizes				
dualspan on clear glass	glass thickness mm	max long edge mm	max short edge mm	max short area m <sup>2</sup>
	6 to 12	4800	2800	8

Enquiries outside the scope of the above table are welcome.

### 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	
nominal dimension	tolerance
up to 2 meter	+2.5 / -2.5 mm
2 meter to 3 meter	+3.0 / -3.0 mm
over 3 meter	+4.0 / -4.0 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. The maximum allowable roller wave is 0.3 mm for float glass products of 6 mm thickness and above.

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, 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 3 mm per linear metre.

Local bow, roller wave, may occur when the glass is toughened, which is measured as a maximum of 0.5 mm in any 300 mm length.

### Work on Dualspan

All work on Dualspan 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. Ground, smoothed, or polished edges may also be supplied.

Where holes, cut-outs and notches are required, enquiries are welcome.

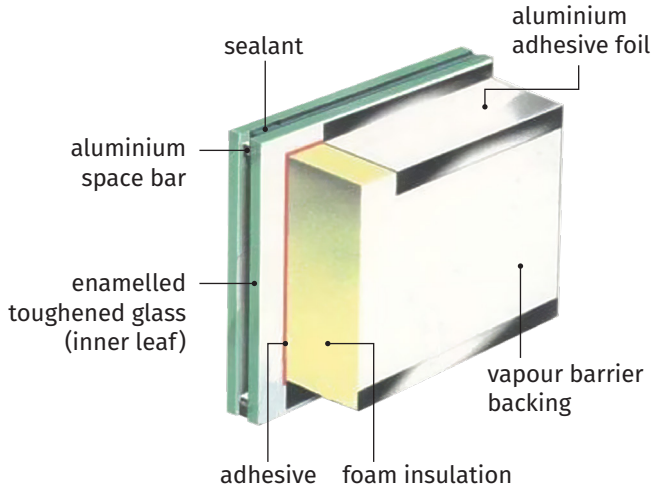
### Insulated Dualspan

Dualspan 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.

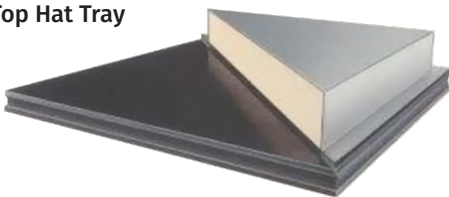
The foam insulation may be bonded directly to the glass as a cut size slab. If required, the edges may be covered in an aluminium tape, to resist surface spread of flame, as seen in the following diagram.



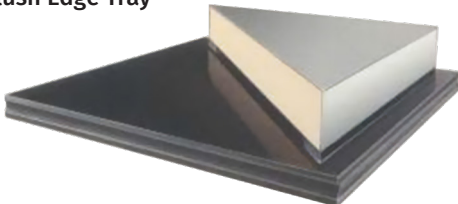
Where it is necessary to include the insulation within a tray attached to the rear of the spandrel panel, as is common practice with mineral fibre insulation, one of the following three designs may be specified.

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.

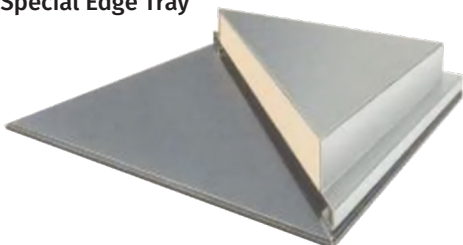
**Top Hat Tray**



**Flush Edge Tray**



**Special Edge Tray**



## Quality

Dualspan toughened glass spandrel panels are manufactured and tested to comply with EN 12150: parts 1 & 2: Glass in building. Thermally toughened soda lime silicate Dualspan Toughened Glass Spandrel Panels safety glass, and EN 12600: Glass in building - Pendulum test - Impact test method and classification for flat glass.

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

**Part 1: Non-combustibility test for materials**  
**Part 2: Surface spread of flame test for materials**

Dualspan is also available as heat soak tested thermally toughened glass.

## Storage and handling

Dualspan 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 Dualspan 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.

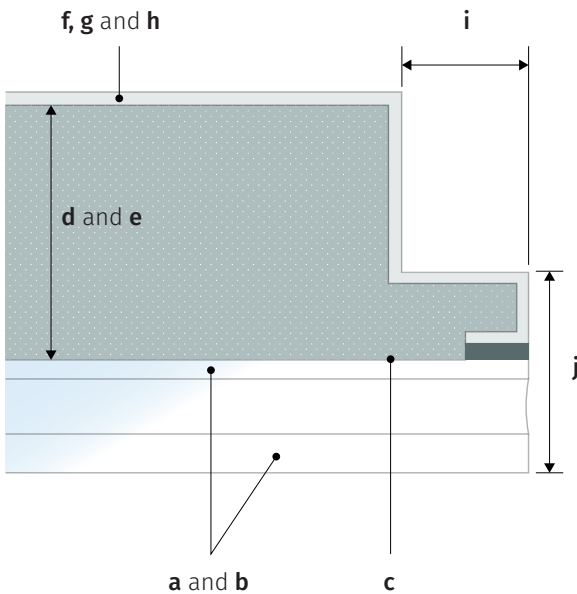
Dualspan must be protected from site contamination such as welding spatter, or cementitious or plaster products, or adhesives.

## Panel Specification

When specifying Dualspan 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.

<b>a</b>	glass thickness
<b>b</b>	glass type
<b>c</b>	enamel colour
<b>d</b>	insulation thickness or U-value
<b>e</b>	type of insulation material
<b>f</b>	tray material
<b>g</b>	tray surface finish
<b>h</b>	vented tray
<b>i</b>	edge thickness
<b>j</b>	edge detail, flush or stepped, etc.



Enquiries are welcome regarding the u value of alternative insulating glass unit configurations with different insulation thickness.

#### Thermal Durability

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

#### Appearance

Dualspan may have small pinholes 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 an opaque background.

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

### Glazing

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

### U-value

The thermal insulation listed in the table below are typical centre pane U values for insulated spandrel panels.

thermal insulation values		
insulation type and thickness	U-value (W/m <sup>2</sup> K)	
	single 6 mm	dualtherm 6/16/6
none	5,7	2,7
foam 25 mm	0,7	0,6
foam 40 mm	0,5	0,45
foam 50 mm	0,4	0,4
foam 60 mm	0,35	0,35
foam 75 mm	0,3	0,3
foam 100 mm	0,25	0,25
foam 120 mm	0,2	0,2
fibre 50 mm	0,7	0,6
fibre 75 mm	0,5	0,4
fibre 100 mm	0,4	0,3

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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