

SGG EMALIT[®] EVOLUTION

*Lead-free toughened enamelled
glass*

Technical Sheet
United Kingdom

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Lead-free toughened enamelled glass

Description

SGG EMALIT EVOLUTION is an opaque coloured glass, produced by uniformly enamelling one side of the glass. The new enamels used do not contain any dangerous heavy metals* (in particular: lead, cadmium, mercury or chromium VI). The enamel is fired at a very high temperature, in order to fuse permanently with the glass surface, giving the product exceptional durability.

SGG EMALIT EVOLUTION is a toughened safety glass manufactured in accordance with standard BS EN 12150. For certain applications it can be heat-strengthened in accordance with standard BS EN 1863.

* < 1000 ppm in the content of the paint

Applications

External façade cladding

Used in insulated spandrels or cladding panels in non-vision areas for an aesthetically clean appearance. Uniform façades or contrasting features can be created, with the added reflective quality of glass.

Internal cladding

SGG EMALIT EVOLUTION provides exceptional resistance to humidity and is often used to clad internal wall areas, such as laboratories, where hygiene and durability are important.

Advantages

More environmentally friendly

The enamel is free from lead and other dangerous metals making it more environmentally friendly and totally recyclable. During manufacture, the almost total absence of pollutants protects nature and health.

Coloured façades

SGG EMALIT EVOLUTION is available in a wide range of colours. Additional decorative effects can be obtained by enamelling different base glasses and/or designing specific colours.

Exceptional durability and safety

SGG EMALIT EVOLUTION is a toughened safety glass with the mechanical properties and durability inherent to clear toughened glass. In both façades and interior applications, the colours remain totally stable over time.

Simple installation

SGG EMALIT EVOLUTION is as easy to install as ordinary toughened glass.

Range

- SGG EMALIT EVOLUTION CLASSIC : for uniformly coloured spandrel panels, combined with the natural radiance of glass (base glass: SGG PLANILUX, SGG PARSOL and SGG DIAMANT).
- SGG EMALIT EVOLUTION CLASSIC EXTRA-WHITE : for true pure white, by enamelling SGG DIAMANT extra clear glass
- SGG EMALIT EVOLUTION CONTRAST : coloured and textured glass, using SGG MASTERGLASS and certain patterns from the SGG DECORGLASS range.
- SGG EMALIT EVOLUTION STRUCTURE: simulates polished granite or marble using an exclusive mix of two or more coloured enamels.

Standard colour range

SGG EMALIT EVOLUTION is available in a range of 25 standard colours. In addition to the standard range of colours, bespoke colours and colour-matching services are available, enabling most colours to be replicated. Please contact SAINT-GOBAIN GLASS with your enquiry.

Manufacturing sizes

Thickness (mm)	6, 8, 10
Maximum dimensions (mm)	3600 x 2080

Manufacturing tolerances

Deflection tolerance	3mm / 3m
Tolerance on sizes	+0-3mm
Max length/width ratio	1/10
Minimum dimensions (mm)	500 x 300

Manufacturing tolerances: refer to standard BS EN 12150

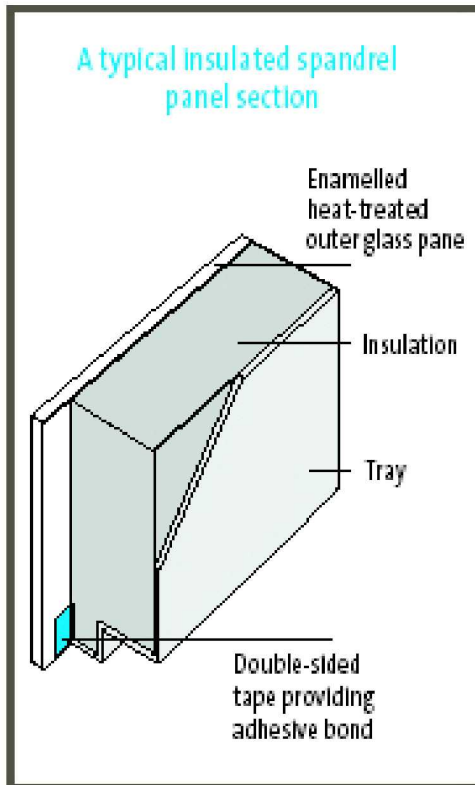
Larger dimensions are available. Please contact SAINT-GOBAIN GLASS for further information.

Please note

- The thickness of the glass can affect the final colour of the product.
- For uniformly coloured surfaces on façades, a single thickness should be used throughout a project.
- A colour difference of $E^* = 1.5$ (C.I.E. L a*b*) measured on the surface of the glass is acceptable between 2 panes with the same colour enamel.

Insulated Spandrel Panels

Insulation can be added to both single and double-glazed spandrel panels to improve thermal performance. The insulation is applied as foil backed foam or as mineral fibre in an aluminium tray bonded to the rear, painted surface of the single glass or double-glazed unit. Both the tray and spandrel are retained within the glazing rebate. In the case of foil backed foam, an aluminium channel is bonded to the glass perimeter to form a standard 24mm glazing width. Both the glass and aluminium channel are retained in the glazing rebate.



Two types of insulation are available as standard:

- CFC-free foam
- Mineral fibre

The standard thickness of insulation and their minimum corresponding centre-pane U-values are as follows:

CFC-free foam	35mm	50mm	75mm
Mineral fibre	50mm	75mm	10mm
Centre pane U-value (W/m ² K)	0.60	0.44	0.30

These values apply to both single and double-glazed spandrel panels. For special applications, it may be possible to design insulation to meet the requirements of the project. Due to thermal conduction through aluminium trays, the overall U-value may be higher than the centre pane value quoted.

Internal finishes to insulated spandrel panels

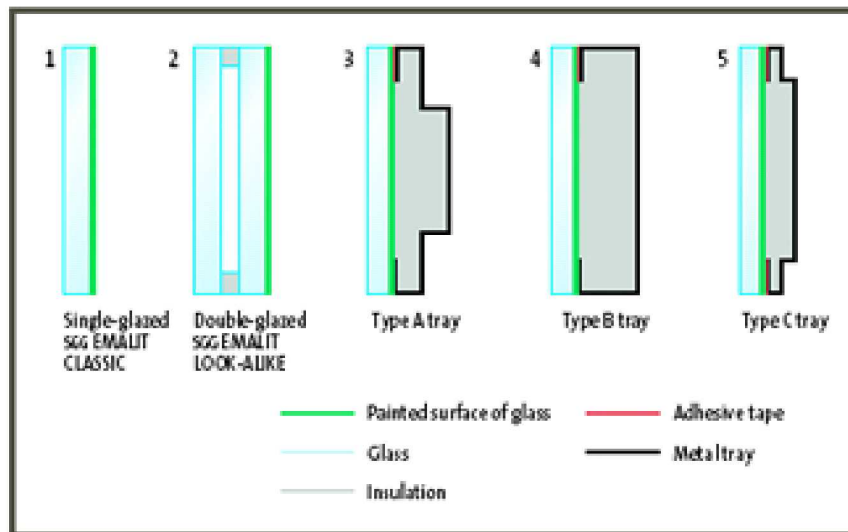
Standard insulated spandrels with no treatment to the rear surface of the tray (mill-finish) are for use only where the internal surface will not be visible.

Where the rear surface of the tray is to be visible, and where appearance is not of major importance, various powder-coated finishes are available.

Tray types and edge details

Various tray types may be specified for use in single or double-glazed spandrel panels.

All types are bonded to the painted surface of sgg EMALIT CLASSIC or sgg EMALIT LOOK-ALIKE panels.



*Single-glazed panels used for illustration purposes. Insulation can also be applied to double-glazed spandrel panels.

Double-glazed units

National regulations permitting, SGG EMALIT EVOLUTION can be incorporated in double-glazed units for façade applications. The enamel coating must be on face 4.

This type of double glazing must be designed specifically for this particular application (depth of seal, loading, width of cavity etc.).

Laminated glass

When required in laminated form, the enamelled face must be located on the outside of the assembly.

Curved glass

Please contact our technical department.

Edgeworking, notches, holes

See SGG SECURIT.

Installation Guidelines

SGG EMALIT EVOLUTION must always be installed in accordance with current national regulations.

- Mechanical fixings: SGG EMALIT EVOLUTION can be channel glazed, adhesively glazed or screw-fixed. Glass-to-glass and glass-to-metal contact must be avoided. There must be a minimum clearance of 3 mm between two adjacent panes.
- Adhesively glazed: SGG EMALIT EVOLUTION can also be installed in exterior structural sealant glazing, in ventilated, unventilated or insulated spandrel panels (filling element).

For adhesive glazing, ensure that the sealant is not visible. For certain applications, high opacity enamelling is available on request (please contact SAINT-GOBAIN GLASS).

To check the compatibility of the adhesive with the enamel, please contact SAINT-GOBAIN GLASS.

In the interest of preserving its original appearance, SGG EMALIT EVOLUTION should not be installed with the enamelled face towards the outside.

In façades, Heat-Soak test treatment is always recommended, in accordance with standard BS EN 14179.

This treatment is not necessary if the heat-strengthened version of SGG EMALIT EVOLUTION is used.

SGG EMALIT EVOLUTION is designed for use with a back-up wall and is not intended for viewing the enamelled surface from an internal aspect.

With pale colours it is advisable to place a uniformly light coloured backing behind the glass.

Maintenance

To maintain its appearance, SGG EMALIT EVOLUTION must be regularly cleaned with neutral products that are free of harsh abrasive materials.

Standards and Regulations

SGG EMALIT EVOLUTION is a toughened safety glass conforming to standard BS EN 12150. It can also be heat-strengthened, in accordance with standard BS EN 1863. SGG EMALIT EVOLUTION glass will receive marking when it is officially in force.

▼ *Festspielhaus, St.Pölten, Austria • Architect : Prof. K.Kada*

