

SPECIFICATION GUIDE – LAMINATED GLASS

General

Laminated glass comprises layers of glass in a sandwich type arrangement. The normal configuration is a layer of Poly Vinyl Butyral (PVB) laminated to two outer layers of glass.

PVB laminated glass is produced using an autoclave, which produces heat and a vacuum inside the vessel, in a controlled environment. This heat and pressure are applied to sandwiching a flexible interlayer between layers of glass. Generally, the interlayer has a thickness of 0.38mm with multiple interlayers available up to 1.52mm thick dependant on the application.

CIP laminated glass is manufactured by pouring resin into the cavity between two adjacent panes of glass. Interlayer thicknesses of 1.0 to 1.5mm are common for CIP laminated glasses.

Laminated glass has the advantage over standard glass in that it will not shatter, as the polymeric interlayer is not subject to brittle failure as is the glass. Furthermore, the interlayer provides a barrier against penetration. Tinted interlayer materials can be used to help minimize heat transmission, while the polymeric material also acts as a sound deadening layer, damping sound transmission in a manner equivalent to glass twice as thick.

Durability

Provided it is glazed in accordance with recommended glazing procedures and the glazing system is properly maintained; the life of laminated glass should equal that of the structure into which it is fitted. Resistance to surface abrasion is the same as normal glass.

Exposure to elements

If glazed correctly, laminated glass will resist the most severe climatic conditions.

Sunlight - prolonged exposure to sunlight has no effect on the appearance or properties of the interlayer, however where glass may be exposed to extreme heat or variations to the temperatures on each face, it is recommended that toughened/toughened laminate is used, instead of annealed/annealed laminate.

Water - it is unaffected by water provided the interlayer is protected against contact with moisture.

Heat - recommended temperature range - 20 & 18°C to +70 & 186°C.

Wind loading - laminated glass has a tolerance to wind loading similar to that of annealed monolithic glass of the same thickness.

Work in glass

Annealed/Annealed laminate cannot have any work in glass however toughened/toughened laminated glass can have holes, power point cut outs, notches, slots and shape cut outs provided the locations of such work in glass is in accordance with acceptable industry standards.

Light Transmission

Unless pigmented for a particular purpose, PVB interlayer material is completely transparent giving laminated glass similar see-through quality and light transmission value as monolithic glass of the same thickness. Pigmented interlayer can exhibit a slight haziness under certain lighting conditions.

Decoration

Laminated glass can be surface decorated by the same processes as normal glass. It will accept acid embossing, sandblasting and gilding treatments and can be painted. Because of the PVB interlayer, it is not possible to fire colours permanently into the glass. The Miro range of laminated glass however allows for a printed interlayer to be used suitable for any image and any colour. The printed interlayer can also be transparent, translucent or opaque and a printed interlayer is ideal for corporate signage or custom feature panels.

Handling and Installation

Laminated glass must be handled with extreme care to avoid damage to the edges. It should be stacked as near vertical as possible on a timber or felt-faced platform set at 90&186° to a back support. All the bottom edges of the laminates must sit firmly on the platform and the back support should either be continuous or so spaced to prevent the glass bowing. Storage areas must be dry.

Cutting

Standard (three-ply) laminated glass can be cut with a normal diamond or wheel cutter. It should be scored on one side and the cut opened over a lath about 10mm thick. The glass is turned over and the same operation repeated on the second sheet exposing the interlayer, which can be severed with a razor blade. As PVB is a thermoplastic material, separation is made easier by gently warming the cutting area to about 20°C. Multi-Layer (five-ply) glasses and above can only be sawn and must always be ordered to the exact size.

Maintenance

A periodic check should be made to ensure no moisture is in contact with the interlayer.