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TECHNICAL NOTE

10 Things of Laminated Glass Safety Glazing with EVA Interlayer Film

By Peter Lin

This technical note summarizes practical design and processing points for laminated safety glazing that uses EVA interlayer film. It is intended for fabricators, façade and railing engineers, and project buyers specifying EVA laminated glass for architectural safety applications.

CNCGLASS · Ten Practical Points for EVA Laminated Safety Glazing

1. Thicker laminated glass is stronger than thinner laminated glass.

For the same interlayer type and glass grade, increasing overall laminate thickness generally raises bending stiffness and load capacity. Project design should still verify thickness against wind, impact, and support conditions for the specific use.

2. More glass + EVA layers is stronger than a simple two-ply laminate.

A multi-ply build-up (glass + EVA + glass + EVA + ... + glass) typically provides higher residual capacity after breakage than a two-ply laminate of comparable overall thickness. Extra plies improve fragment retention and post-break load sharing when the interlayer and edge retention are correctly specified.

3. Laminated glass made of heat-strengthened (semi-tempered) glass is preferred where post-break residual strength and retention matter.

Source wording stated that laminated semi-tempered glass is “better in impact resistance” than laminated fully tempered or float glass. Authoritative impact studies on highway sound screens show a more precise distinction: fully tempered laminated glass often has a higher impact damage threshold, but once that threshold is exceeded it fragments with little residual strength; heat-strengthened laminated glass retains meaningful residual capacity after severe multi-impact damage and is preferred for applications where the pane must continue to function safely after breakage (for example sound screens and many overhead glazing cases).

4. For the same glass, thicker EVA (0.76 mm) is stronger than thinner EVA (0.38 mm).

Laminated glass with thicker EVA interlayer film (0.76 mm) will generally be stronger in safety performance than the same glass build-up with thinner EVA film (0.38 mm). In common architectural practice, 0.38 mm EVA is often used for decorative or interior laminates, while 0.76 mm and thicker builds are more typical for safety, exterior, and skylight applications. Always match interlayer thickness to the project safety standard—do not invent or substitute unspecified ratings.

5. Edge sealant must be EVA-friendly; use neutral-cure sealant.

If you seal the edges of laminated glass, make sure the glass sealant is friendly to the EVA interlayer film. Use neutral sealant (DOW CORNING 1199, 799, 982, 1200, 7091) to fix it. Prefer neutral-cure silicone products that are documented as compatible with EVA; avoid acidic (acetoxysilane) silicones that can attack the interlayer or edge bond.

6. Bullet-proof / explosion-proof laminated glass should not use tempered glass as base sheets.

Bullet-resistant or explosion-resistant laminated glass should not be laminated with tempered glass as the basic sheet. For blast or security performance, interlayer type and thickness must be specified to the applicable project standard. EVA can tear under severe loading and may perform less well than PVB for long-term fragment support or blast; do not treat a standard architectural EVA laminate as blast-rated unless the full glass build-up is tested and certified for that duty.

7. Point-supported glass structures must be carefully engineered and strengthened.

Point-supported (point-fixed) laminated glass structures should be strengthened and engineered for local stresses at fittings, hole edges, and support points. Use appropriate glass grade, interlayer, hole finish, and hardware design so that stress concentrations do not initiate premature fracture.



Fig. — Point-supported laminated glass railing (EVA interlayer application).

8. For safety, prefer laminated heat-strengthened (semi-tempered) glass for skylights — not as floor glazing.

For safety reasons, it is better to use laminated semi-tempered (heat-strengthened) glass for skylight glass, but not as floor.

Overhead / skylight retention benefits from heat-strengthened laminates' post-break behaviour; walkable floor glazing requires a separate structural and safety specification and must not be treated as a skylight detail.

9. Broken laminated tempered glass with EVA may show larger pellets/fragments than single tempered glass.

The pellets (fragments) of broken laminated tempered glass with EVA interlayer film may be larger than the pellets of broken monolithic tempered glass, because the interlayer holds fragments together after fracture. Designers and fabricators should account for this fragment pattern when assessing post-break appearance and retention.



Fig. — Post-break laminated glass: interlayer retains fragments after shatter.

10. Cleanliness of base glass and heat control during lamination are key to quality and service life.

The cleanliness of the basic glass and heat control in the combination (lamination) procedure of laminated glass are key factors for the quality and useful life of laminated glass. Contaminants, moisture, or uncontrolled temperature/vacuum profiles can cause bubbles, haze, edge defects, or shortened service life. Maintain clean rooms, dry film handling, and validated heating–vacuum–cooling cycles for EVA processing.

For project-specific glass build-ups, edge sealing, and processing parameters, contact CNCGLASS (Peter Lin) using the header details above. This note does not replace structural design, testing, or local building-code compliance.