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# TECHNICAL NOTE

# EVA Interlayer Thickness for Laminated Glass: Practical Selection Guide

By Peter Lin

## CNCGLASS · Pick thickness by job—not by habit

Interlayer thickness is one of the first numbers written on a laminated-glass RFQ, and one of the easiest to get wrong. A 0.38 mm EVA sheet can be the right answer for many interior decorative panels. A 0.76 mm build—or a stacked construction at 1.14 mm, 1.52 mm, or beyond—is often the safer starting point for exterior openings, railings, skylights, shower doors, and large architectural lights.

Thickness alone never finishes the decision. Glass type and size, insert materials, edge exposure, vacuum-laminator capability, optical targets, and the safety standard that must be proven all reshape the stack. Underspecifying invites bubbles, weak edges, and failed impact screens. Overspecifying without process discipline wastes film and can leave overflow or haze. This CNCGLASS note maps common EVA thicknesses, what each range is for, the factors that override a catalog number, and a buyer checklist you can paste into the next inquiry.

## CNCGLASS · Quick answer

The two most common single-sheet EVA interlayer thicknesses for laminated glass are 0.38 mm and 0.76 mm. Interior decorative glass, furniture lights, and many partitions often start at 0.38 mm. Safety-oriented doors and windows, bathroom glass, exterior panels, and larger architectural units more often start at 0.76 mm. When the project needs more encapsulant volume—thick fabric or mesh inserts, tempered waviness, overhead glass, or heavier retention—plants stack plies to reach 1.14 mm, 1.52 mm, 2.28 mm, or a custom total.

Rule of thumb: do not choose EVA thickness by the number on the roll label alone. Choose it by application, exposure, glass build, and the performance you must prove.

## CNCGLASS · What EVA does inside laminated glass

EVA (ethylene-vinyl acetate) interlayer sits between glass plies and bonds under heat and vacuum. After cure, a quality CNCGLASS EVA network helps hold fragments if the glass breaks, blocks a large share of UV when formulated for it, and can encapsulate fabrics, metal mesh, printed films, paper, and PDLC smart film in the same vacuum furnace or silicone-bag line that many processors already run.

Buyers value EVA for optical clarity options (clear, frosted, white, black, and tinted), adhesion to glass and many inserts, moisture behavior suited to outdoor-grade selections, and process flexibility without autoclave capital. EVA is not one SKU: formula, flow grade, outdoor versus indoor orientation, and thickness all change the result. Thickness is therefore a design input—paired with grade—not a standalone guarantee.

## CNCGLASS · Common EVA thickness options

| Nominal thickness | Typical role | Buyer note |
|---|---|---|
| 0.25 mm | Very thin decorative layers; light inserts | Use when the insert is thin and the panel is not safety-critical |
| 0.38 mm | Interior decorative glass, partitions, furniture | One of the two most common single-sheet choices |
| 0.50 mm | Mid-range decorative / light architectural | When 0.38 mm leaves too little encapsulant volume |
| 0.76 mm | Safety glass, doors, windows, railings, exterior panels | Default starting point for stronger laminated builds |
| 1.14 mm | Stacked multilayer EVA | Often 0.38 + 0.76 mm, or three 0.38 mm plies |

| | | |
|---|---|---|
| 1.52 mm | Heavy architectural / tempered laminated glass | Common for demanding panels and thicker builds |
| 2.28 mm+ | Security, overhead, large, or special engineering glass | Confirm with project testing and local standards |

CNCGLASS supplies clear and specialty EVA in the standard 0.38 mm and 0.76 mm singles that most lines stock, with multilayer stacking and custom totals available when the laminated structure needs more film. Always confirm the grade (indoor versus outdoor, flow, optical class) with the thickness—not thickness alone.

## CNCGLASS · Five factors that override a catalog number

### 1. Safety and fragment retention

When laminated glass breaks, interlayer volume and toughness help keep shards bonded. Thicker EVA usually means more material available for retention and energy absorption—but thickness does not by itself create a certified safety product. Certification attaches to a tested glass structure: glass type and thickness, interlayer type and total thickness, edge condition, and the impact or load protocol required in the destination market.

Ask for the intended structure, interlayer type and thickness, impact or drop-test evidence against the named standard, application guidance, and the plant's process control notes—not only a roll thickness.

### 2. Optical clarity

A thicker interlayer does not automatically ruin clarity, but it raises the cost of poor formula, dirty layup, or a rushed cure. For high-clarity work, track visible transmittance, haze, yellowing index, UV aging behavior, cleanliness at layup, and edge inspection after cool-down. Judge optics on cured coupons from your furnace, not only on virgin film.

### 3. Bubble control and insert wetting

Bubbles remain the most common EVA laminating complaint. Typical drivers include incomplete vacuum, dirty or wet glass, moisture in inserts, a wrong heat curve, weak edge sealing, a flow grade that mismatches the insert, or simply too little EVA for a thick decorative core. Fabrics, metal mesh, rice paper, and printed films often need more interlayer volume—or a higher-flow grade—so the melt can penetrate texture and fill micro-voids before gel.

### 4. Edge stability and exposure

Frameless and bare-edge panels put the interlayer at the weather line. Outdoor UV, humidity, and temperature cycling punish the wrong indoor grade. If edges will be exposed, confirm outdoor suitability, anti-yellowing expectations, humidity or boil screening, and sealant compatibility. Never substitute an indoor decorative EVA for outdoor exposed-edge glass without a written grade confirmation and a process coupon.

### 5. Process window on the laminator

EVA softens, flows, and crosslinks under vacuum heat. Thicker stacks need more attention to vacuum level, soft-stage hold, cure temperature and time, cool-before-open discipline, edge overflow, glass flatness, and insert thickness. Tempered glass waviness can leave contact gaps; extra EVA or carefully staged multilayer builds often improve wetting—but only after a trial coupon on the same glass and furnace recipe.

## CNCGLASS · Thickness by application

| Application | Suggested EVA total | Typical use notes |
|---|---|---|
| Interior decorative glass | 0.25–0.38 mm | Partitions, cabinet glass, furniture, printed film |
| General architectural laminated glass | 0.38–0.76 mm | Doors, windows, office partitions |
| Decorative with fabric / mesh / paper | 0.76 mm or multilayer | More film volume for texture fill and air escape |
| Shower / bathroom glass | 0.76 mm (typical start) | Humidity, frequent use, often tempered plies |

| | | |
|---|---|---|
| Exterior laminated glass | 0.76–1.52 mm | Outdoor doors, windows, façade panels, exposed edges |
| Railings and skylights | 1.52 mm or project-specific | Safety-critical / overhead—confirm local rules |
| PDLC smart laminated glass | 0.38–0.76 mm each side of film | Glass + EVA + PDLC + EVA + glass sandwich |

In practice, 0.38 mm EVA covers many indoor decorative jobs. Move toward 0.76 mm when you need stronger bonding, better moisture margin, or clearer safety intent. For railings, skylights, canopies, oversized lights, or outdoor exposed edges, lock the final total to glass size, support condition, and the standard you must meet—then prove it on coupons before production.

## CNCGLASS · Stacking: how plants reach 1.14 mm, 1.52 mm, and beyond

Most EVA is sold as single sheets at 0.38 mm or 0.76 mm. Heavier totals are built by laying multiple sheets in the same cavity: for example 0.38 + 0.76 mm for 1.14 mm, two 0.76 mm sheets for 1.52 mm, or three 0.76 mm sheets for 2.28 mm. Stacking lets the shop keep inventory simple while matching encapsulant volume to insert height, tempered bow, or retention targets.

When stacking, keep orientation and cleanliness consistent, allow enough soft-stage time for air to leave between plies, and watch edge squeeze-out. A thicker stack is not a license to skip vacuum staging. If the insert is porous or textured, confirm whether a high-flow grade on one or more plies improves wetting without flooding the edge.

## CNCGLASS · Common mistakes

- Buying only on price: thinner film can look cheaper on the PO and more expensive after remakes for bubbles, weak edges, or failed screens.
- Defaulting every job to 0.38 mm: fine for many interiors; often inadequate for exterior, large, safety, or thick-insert work.
- Assuming thicker always equals better: extra film helps only when vacuum, heat, and cool-down match the stack; excess without control can hurt optics and edges.
- Ignoring tempered flatness: waviness needs enough interlayer and soft-stage time for contact; thickness without process still leaves voids.
- Forgetting the insert: fabric, mesh, and paper trap air and moisture—trial before mass production.
- Calling any laminate “certified safety” without a tested structure against the required market standard.
- Putting indoor EVA on outdoor bare-edge glass: weatherable grade and thickness must both match exposure.

## CNCGLASS · RFQ checklist before you ask for a quote

Send more than “need EVA film.” A useful brief for CNCGLASS includes:

- Application: railing, partition, skylight, façade, shower, smart glass, decorative insert, furniture, etc.
- Indoor or outdoor service; framed or exposed edge.
- Panel size and glass thickness; glass type (annealed, tempered, heat-strengthened, low-iron, low-E).
- Known laminated structure, if any; preferred EVA total (0.38 / 0.76 / 1.52 mm or custom stack).
- Clear, frosted, white, black, tinted, or specialty optical class; indoor vs outdoor grade preference.
- Decorative or functional insert (fabric, mesh, paper, printed film, PDLC) and its approximate thickness.
- Required standard or test evidence; destination market; quantity and timing; whether sample coupons are needed.

The more complete the brief, the tighter the thickness and grade recommendation—and the fewer trial-and-error cycles on your line.

## CNCGLASS · FAQ

### Q1. What EVA thicknesses do most laminated-glass plants stock?

A: 0.38 mm and 0.76 mm singles are the workhorses. Heavier totals are usually built by stacking those sheets. Specialty lines may also stock 0.25 mm, 0.50 mm, or project-cut multilayers.

### Q2. Is 0.38 mm EVA enough?

A: Often yes for indoor decorative panels, furniture glass, and light partitions. For exterior glass, large panels, railings, skylights, shower doors with higher humidity, or safety-driven builds, start at 0.76 mm or thicker and confirm with testing.

### Q3. When should I specify 0.76 mm?

A: When you need more bonding volume, better moisture margin at edges, stronger fragment-retention intent, or a safer default for doors, windows, bathroom glass, and general architectural safety laminates.

### Q4. Can EVA be stacked for thicker laminates?

A: Yes. Stacking to 1.14 mm, 1.52 mm, 2.28 mm, or custom totals is routine for railings, skylights, canopies, security glass, and decorative builds with thick inserts—provided vacuum and cure staging scale with the stack.

### Q5. Does thicker EVA always make better glass?

A: No. Thickness helps bonding and retention only inside a controlled process. Film quality, glass type, vacuum level, temperature curve, panel size, edge detailing, and the required safety tests all decide the outcome.

### Q6. How should PDLC smart glass be built for thickness?

A: A common sandwich is glass + EVA + PDLC film + EVA + glass, with roughly 0.38–0.76 mm EVA on each side of the PDLC, adjusted for glass flatness and process capability. Confirm optical targets and bus-bar protection on a trial unit.

## CNCGLASS · Why brief CNCGLASS on thickness early

CNCGLASS (CNC Ucolin Interlayer Technology Co., Ltd., Shenzhen) supplies EVA interlayer for architectural, decorative, bathroom, railing, and smart-glass laminating. Thickness coaching sits next to grade selection: clear and specialty optics, indoor versus outdoor orientation, high-flow versus standard-flow behavior, and finished-structure advice for processors who laminate in-house or who buy finished laminated glass.

Aligning thickness, flow, and furnace recipe before the first production batch costs less than sorting remakes after a wrong default. Share the RFQ checklist above and ask for coupon guidance on your glass and inserts.

## CNCGLASS · Conclusion

Most laminated-glass projects begin with 0.38 mm or 0.76 mm EVA. Use 0.38 mm where indoor decorative duty and light inserts dominate. Prefer 0.76 mm when safety intent, humidity, exterior exposure, or larger panels raise the bar. Stack to 1.14 mm, 1.52 mm, 2.28 mm, or beyond when encapsulant volume, overhead duty, or insert thickness demand it—and always prove the full structure against the standard and process you will run. Thickness is a tool; application and verification decide the build. Contact Peter Lin and the CNCGLASS team for thickness recommendations, sample stacks, and vacuum-laminator support.

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Ask CNCGLASS for EVA thickness recommendations, sample stacks, and vacuum-laminator process support.