

CNCGLASS

Brand: **CNCGLASS**

Company: **CNC Ucolin Interlayer Technology Co., Ltd.**

Address: SHENZHEN, GD, CHINA

Peter Lin | cnc@cncGlass.com | WhatsApp/Mobile +86 15013829504 | WeChat wecan365 | www.cncglass.com

TECHNICAL NOTE

How to Process Laminated Glass with EVA Film Interlayer

By Peter Lin

CNCGLASS · Purpose

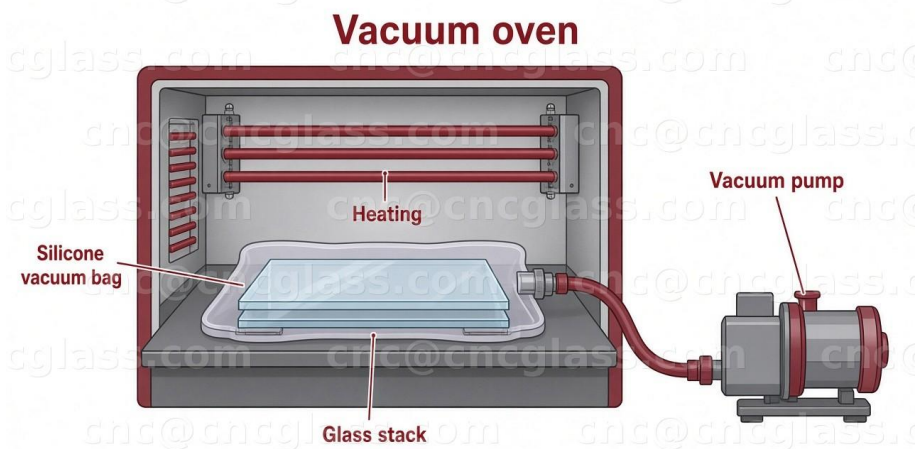
This technical note explains how to laminate glass with an EVA film interlayer on a one-step vacuum laminating oven — a simpler route than typical PVB autoclave processing, with lower installation cost for many workshops.

CNCGLASS · EVA vs PVB Process Difference

PVB film normally requires an **autoclave**. **EVA film** uses a simpler one-step vacuum laminating oven — easier to install and operate for many decorative and architectural laminated-glass lines.

CNCGLASS · One-Step Vacuum Laminating Oven

- Install a one-step vacuum laminating oven with even heating inside the chamber.
- Use a good silicone vacuum bag — seals must hold target vacuum without leaks.

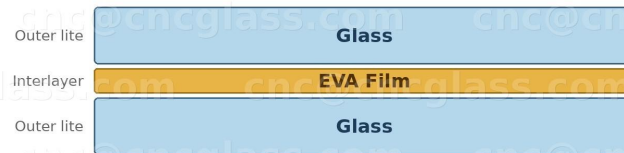


Principle sketch: one-step vacuum laminating oven with silicone vacuum bag and vacuum pump (no autoclave).

CNCGLASS · Pre-Laminate Stack

Normal combination: **GLASS + EVA FILM + GLASS**.

Laminated Glass Stack (Cross-Section)



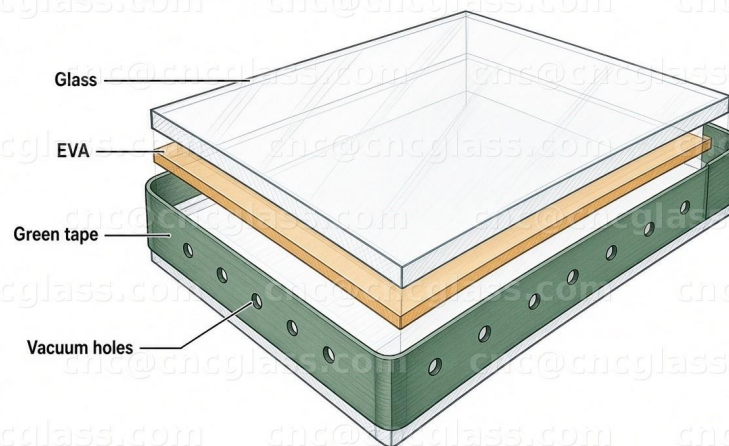
Normal combination: GLASS + EVA FILM + GLASS

One-step vacuum oven route (no autoclave)

Structure (cross-section): Glass → EVA Film → Glass — the normal combination for EVA laminated glass.

- Trim extra EVA gently — do not pull hard (pulling can shift or remove the film).
- Fix the pre-laminate with high-temperature green ribbon tape.

Pre-laminated Glass Edge Sealed with High-Temperature Green Ribbon Tape



Pre-laminate edge sealing: high-temperature green ribbon tape; if fully taped, punch small holes to aid vacuuming.

CNCGLASS · Silicone Vacuum Bag

- Place the pre-laminated glass inside the silicone vacuum bag and seal it.
- Start the vacuum pump; verify vacuum meets the process requirement before heating.
- Space pieces **3–5 cm** apart in the bag to help vacuuming; optional wooden bars around the bag can also help.
- If the pre-laminate is fully taped, punch small holes in the tape so vacuum can reach the edges.

CNCGLASS · Glass Preparation

- Cut and edge the glass (protect the silicone bag from sharp edges).
- Clean with purified / deionized water, industrial alcohol, or ethanol; hot-air dry.
- No black spots, watermarks, or fingerprints on bonding faces.

CNCGLASS · Two-Stage Heating (Starting Guidance)

There is no fixed universal standard. Cycles depend on EVA formula, machine, weather, and moisture. Manufacturer sheets and the table below are starting points — validate with small samples on your oven.

Stage	CNC starting guidance	Hold time	Notes
Low	60 °C	15 minutes	Vacuum / dry before melt

High	130 °C	40 minutes	Cure / bond (outdoor clear starting)
------	--------	------------	--------------------------------------

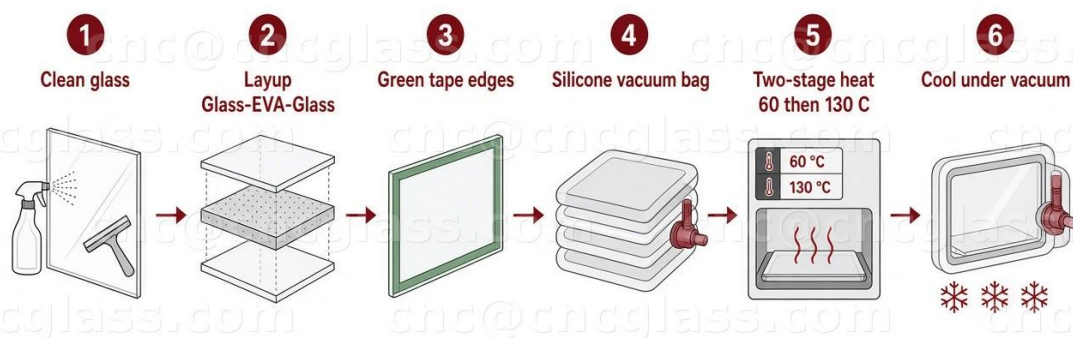
Optional alternate starting point (outdoor clear EVA tables sometimes list low stage 70 °C): keep CNC source 60 °C / 15 min as primary; some public CNC-related tables use 70 °C for the low stage. High stage remains 130 °C / 40 min as CNC starting guidance unless the EVA grade instructions differ.

Heating procedure detail:

- Vacuum **3–5 minutes** before pushing the shelf into the oven; check for bag leaks. Vacuum should be at least **0.095 MPa**.
- Set the two-stage cycle. Heat transfer through the silicone bag means the detector can lag behind real glass temperature.
- Stop heating; wait until below **75 °C** before opening the oven / pulling the shelf to cool. Do not open the bag or splash cold water on the glass.
- Open the silicone bag only when below **45 °C**, then inspect the laminated glass.

Do NOT stop vacuum until the laminated glass has cooled to room temperature. Releasing vacuum early commonly causes bubbles.

EVA LAMINATED GLASS MANUFACTURING PROCESS



Process overview for EVA laminated glass. Actual cycle times, vacuum levels, and equipment settings may vary based on glass type, thickness, and manufacturer recommendations.

Process outline: clean → layup Glass/EVA/Glass → green tape → silicone vacuum bag → two-stage heat → cool under vacuum.

CNCGLASS · General Parameter Rules

- **Indoor EVA** (often around 110 °C) usually needs a lower process temperature than **outdoor EVA** (often around 130 °C).
- Thicker glass / more EVA layers → longer high-stage hold. Example: 5 mm + 0.38 mm EVA + 5 mm → 130 °C / 40 min; 10 mm + 2×EVA + 10 mm → 130 °C / 55 min.
- Tempered glass typically needs a longer hold than annealed (float) glass.
- Colder weather / higher moisture → longer keep time; re-check when changing supplier, machine, or season.
- **Manufacturer instruction sheets are starting points — adjust to your real oven and climate.**

CNCGLASS · Why Two Temperature Periods

- Low stage: EVA has not melted yet; warmer air moves faster — better vacuuming before melt.
- Low stage dries moisture in film, glass, and print ink before melt — reduces bubbles and helps adhesion.
- After warm-up, the detector reading is closer to the real laminated-glass temperature.

CNCGLASS · Process Notes

- Do not mix different glass thicknesses in the same silicone bag (heat transfer differs).
- Fabric / paper thickness drives EVA thickness: thin silk ≈ 0.25 mm EVA may be OK; thicker fabric ≥ 0.38 mm.

- Typical EVA behavior: soften $\approx 75^{\circ}\text{C}$, start to react $\approx 100^{\circ}\text{C}$, fully melt $\approx 115^{\circ}\text{C}$. Detector $\approx 120^{\circ}\text{C}$ often corresponds to real $\approx 115^{\circ}\text{C}$.
- Thicker EVA is more mobile when melted — too long at high stage can leak at edges and create edge bubbles.
- Tempered glass or poor flatness $\rightarrow$ use thicker EVA; poor plainness can cause breakage under vacuum or bubbles.

CNCGLASS · Application Example

EVA vacuum-laminated glass is widely used for interior partitions, facade / glazed walls, shower enclosures, balustrades, and decorative insert panels — wherever a one-step vacuum oven route fits production.



Application example — interior laminated-glass partitions and glazed office walls (EVA vacuum-laminated safety glass).

CNCGLASS · Contact

Brand: CNCGLASS

Company: CNC Ucolin Interlayer Technology Co., Ltd.

Address: SHENZHEN, GD, CHINA

Contact: Peter Lin

Email: cnc@cncGlass.com

WhatsApp / WeChat / Mobile: +86 15013829504 · **WeChat:** wecan365

Website: www.cncglass.com

CNC Ucolin Interlayer Technology Co., Ltd. · SHENZHEN, GD, CHINA · Peter Lin