**Brand: CNCGLASS**

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# TECHNICAL NOTE

# SGP Ionoplast Interlayer Lamination Troubleshooting Guide: Bubbles, Delamination, Haze, and Edge Practice

By Peter Lin

## CNCGLASS · Shop-floor problems, plain English fixes

This article restates CNCGLASS engineering guidance for common SGP ionoplast lamination defects. It is a process note for autoclave and nip-roll lines—not a laboratory certificate.

## CNCGLASS · Bubbles

- Full-sheet large bubbles: nip temperature too low or glass not sealed—raise zone temperatures, increase nip pressure, slow the line, and purge trapped air at the trailing edge.
- Bean-sized bubbles near the trailing ~20 cm: trailing-edge air pocket—drop zone temperatures about 5 °C and slow the nip to exhaust air.
- Bubbles around holes: hole perimeter not sealed—slow the nip at hole positions.
- Edge bubbles from poor temper fit: pair furnace loads so knife-edge orientation matches; keep temper bow matched.
- Boil-test full-sheet bubbles: tin-side pairing wrong—use air/tin/SGP/tin/air stack orientation.
- Occasional random bubbles: unstable nip heaters—service heaters and calibrate console vs actual temperature.
- Dense edge bubbles after autoclave bag work: vacuum-bag leak—check bags after bagging.
- High film moisture: keep clean-room humidity ≤ ~30% RH; reseal opened SGP rolls.

## CNCGLASS · Impact adhesion / delamination

- Knock test separation: prefer tin-to-tin contact with SGP; use adhesion promoter when tin contact is impossible (non-float or multi-laminates).
- Dirty glass: refresh washer water, clean air knives, avoid aged/mouldy glass stock.
- Autoclave under-cure: for total thickness > 30 mm hold at least ~3.5 h; confirm actual kettle temperature is not below ~130 °C (never run a process that only reads 120 °C when 130 °C is required).
- Edge open after install: temper flatness and forced clamping on mismatched pairs can rebound and open edges—do not force-clamp bad pairs.
- Short fine edge opens: trim with a sharp blade; prefer vacuum bright-edge practice so post-autoclave pulling of film is unnecessary.
- Waist opens in transport: long lites need more than one sling so ends do not sag.

## CNCGLASS · Black spots, dirt, and high haze

- Film black spots or debris: inspect and cut out contamination at layup.
- Dirty glass or dirty layup room: clean glass and keep 5S on tables and conveyors.
- High haze from slow cool: clean cooling circuits, raise cooling-water flow, and keep ≥ ~3 cm spacing between lites so air can move; avoid metal/wood spacers that block flow.
- Oil film haze: keep compressor dryers and oil separators healthy; prefer oil-free air where practical.
- Local white haze from roller marks: clean conveyors before layup.

## CNCGLASS · What this means for glaziers and buyers

- Most SGP complaints trace to nip sealing, tin-side pairing, moisture, autoclave time/temperature, or housekeeping—not to a mysterious film failure.
- Write process windows into work instructions; do not rely on memory alone.
- Ask CNCGLASS for SGP film grades and process coaching when commissioning a new line.

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Ask CNCGLASS for SGP ionoplast interlayer film, laminated-glass process support, and specimen data sheets.