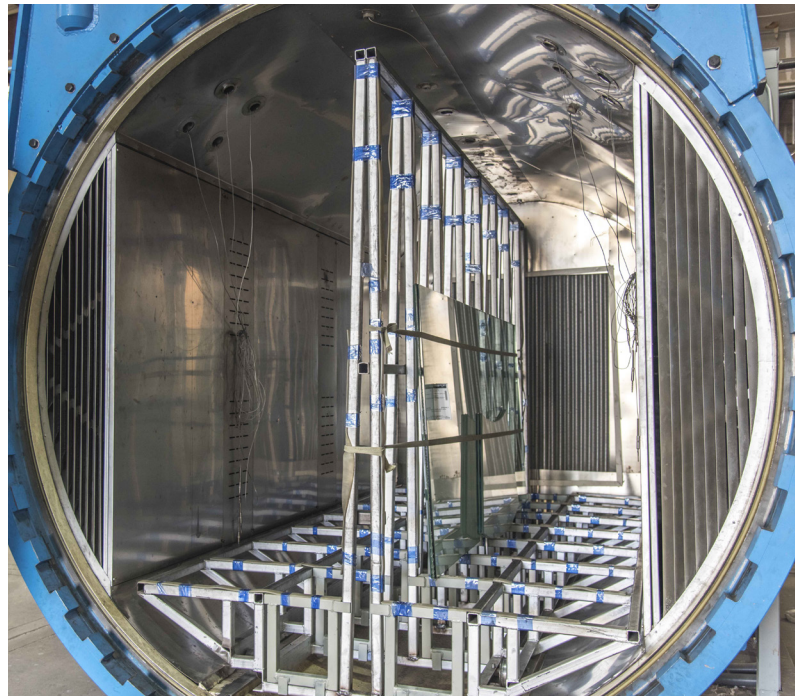


# HARTUNG

GLASS INDUSTRIES

## ARCHITECTURAL & DECORATIVE LAMINATED GLASS



## EQUIPMENT


**SentryGlas® Certified Fabricator** – SentryGlas® interlayers help create lighter, safer and stronger glass that can stand up to greater loads and higher threat levels. Taking advantage of the interlayer’s extra stiffness and tear resistance, structural glass systems - from floors and stairs to balcony rails and minimally supported glass canopies - can enjoy new design freedom.


**Lisec PM23 nip roller** – with hydraulic pressing and anti-torsion system features heavy steel rollers, covered by special rubber designed exclusively to avoid the formation of air bubbles between the glass panels and the PVB. The proprietary press roller applies uniform pressure along the entire surface area.


**Complicated Shapes** – Equal pressure is especially important for shapes like triangles where the roller will automatically put minimal pressure on the tip and increase pressure as the surface area grows to avoid cracks and air bubbles.


**Lisec HT3223 Heating Oven** – State of the art equipment features special infrared medium wave emitters equipped with forced air convection which keeps the temperature inside the ovens constant.


## TECHNICAL SUPPORT

 **Bid process** – detailed fabrication shop drawings that show material, shape and dimensions included at no extra charge

 **Supply chain management** – we work closely with glass and interlayer manufacturers to reserve capacity. Early communication ensures success

 **Short lead times** – advanced automation, lean manufacturing and focused processes result in Hartung offering the fastest lead times in the NW

 **Crating** – standard and custom crating available

 **Logistics** – our transportation experts are responsible for safely shipping your orders where you need it, when you need it and how you need it

## VANCEVA® COLOR INTERLAYERS<sup>‡</sup>

Often a path for natural day lighting, today’s windows offer Architects and Designers a dynamic palette on which to display color. The design community continues to push the envelope, developing innovative color design methods for every glazing application. When exploring light, form and space in the design process, glass can be the answer for all three considerations with the addition of Vanceva®. Now hospitals, living rooms, and urban facades can showcase color in the glazing design. Color and light are used not only to define space, but to stimulate and even inspire those who inhabit it.



# GENERAL GUIDELINES

## Laminated Glass

PROCESS	WILSONVILLE, OR
<b>STRAIGHT LINE LAMINATION</b>	
Minimum overall size	8" x 16"
Maximum overall size	86" x 144"
Maximum length	
Maximum size per overall thickness 2.5mm / 2.5mm annealed	72" x 96"
Maximum size per overall thickness 2.7mm / 2.7mm annealed	72" x 120"
Maximum size per overall thickness 3.2mm / 3.2mm annealed	72" x 130" or 60" x 144"
Maximum size per overall thickness 4mm / 4mm annealed	84" x 130"
Maximum size per overall thickness 5mm / 5mm annealed	84" x 144"
Maximum size per overall thickness 6mm / 6mm annealed	84" x 144"
Maximum size per overall thickness 3mm / 3mm heat treated	38" x 84"
Maximum size per overall thickness 4mm / 4mm heat treated	48" x 96"
Maximum size per overall thickness 5mm / 5mm heat treated	72" x 100"
Maximum size per overall thickness 6mm / 6mm heat treated	84" x 144"
Minimum overall thickness	5mm (2.5mm / 2.5mm)
Maximum overall thickness	3" (any combination)
Maximum overall weight	< 1000 lbs.
<b>VACUUM BAG LAMINATION ‡</b>	
Maximum size for vacuum bag lamination	68" x 144"
Maximum overall weight for vacuum bag lamination	1000 lbs.
SureStep stair treads & flooring	Must be vacuum bagged
<b>TEXTURED/OBSCURE GLASS</b>	
Satin Etch	.015 vinyl and .030 vinyl
Rain, Niagara, Pinhead Morocco, Mistlite*, Gluechip*	Minimum .060 vinyl
Arctic**, Cathedral**, Delta (clear or frost)**	Minimum .060 vinyl - vacuum bagged
Berman Glass editions (BGe: Ima, Aqui, Etre, Esto)**	Minimum .060 vinyl (.090 recommended) - vacuum bagged

\*Tempered **recommended**. \*\*Heat treating **required**.

### EDGEWORK

Only flat grind/polish is recommended for laminated glass. Flat polishing tempered laminated glass (after lamination) can be done on 12mm or thicker (overall) glass but is not recommended as altering tempered glass compromises the stability of the edge. Mitred or bevelled edges are NOT available on HS / tempered laminated glass. Available on annealed laminates only, must be edged after lamination.

### FABRICATION

Holes, edge cutouts and notches are available in heat treated laminated glass only as annealed lites with fabrication are subject to break during the lamination process. Limited fabrication on annealed laminated lites can be done after lamination. Glass fabrication rules & guidelines for heat treated glass apply (i.e. spacing and location of holes, notches, etc.)

We recommend using the largest possible hole dimensions to insure the holes align. Tolerance for alignment varies and is dependent on glass thickness. A minimum of .060 vinyl must be used when laminating heat treated glass with cutouts, holes, notches, etc. Only flat polish (prior to lamination) is available on all glass bullet resistant products – no holes, notches or cutouts available.

‡ Special order. Call for details.



Railings | Balustrades | Canopies | Sculptures  
 SureStep Stair Treads & Flooring<sup>‡</sup> | HD Glass | Soft Coat Low-e  
 Billets | Ballistic Resistant | Hurricane Rated | Acoustical<sup>‡</sup>

**HARTUNG**  
GLASS INDUSTRIES

Quoting and Shipping from Wilsonville, OR

 GUARDIAN  
SELECT FABRICATOR

 PPG **CFP**  
CERTIFIED FABRICATOR<sup>®</sup> PROGRAM



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