

CAPABILITIES AND STANDARDS REFERENCE GUIDE

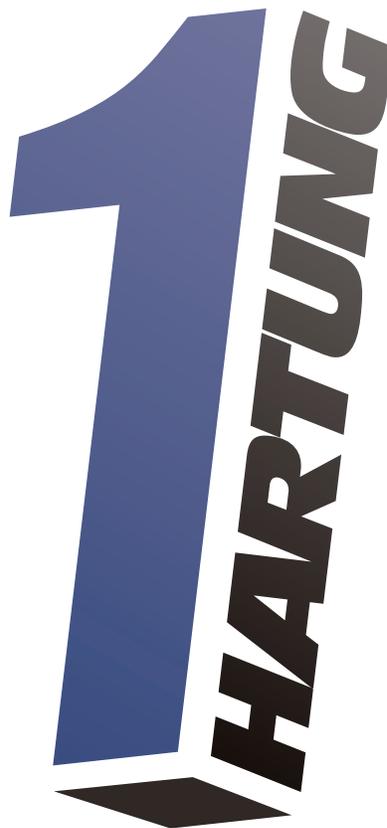


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TERMS & CONDITIONS

INVOICING

- 3 SQ. FT. Minimum per lite/IGU
- All dimensions are invoiced to the next even inch
- All quotations are valid for 90 days (unless otherwise stated)
- Applicable taxes and energy surcharge will be applied on the invoice
- Energy surcharge is not included unless otherwise noted
- HD Glass digital ceramic frit, silkscreen ceramic frit or silicone spandrel, please call for quotation
- Please reference quotation number(s) on your purchase orders
- Price pages are for daily and small projects.
- Please contact Hartung for large project estimates quotations for project work

MEASUREMENTS

- All shapes are viewed from the outside looking in
- Please show all dimensions, drawings and templates as width by height

DELIVERIES

- A-Frames and glass racks must be returned to Hartung within 7 business days
- Jobsite deliveries are subject to Hartung Glass Industries discretion

CUSTOMERS OWN GLASS

- Customers own glass is subject to Hartung Glass discretion.
- HGI will not accept responsibility for customers' own glass (COG)

CLAIMS

- All claims must be made within 5 business days after receipt of order
- Hartung Glass will not accept responsibility for any back-charges

OVERALL QUALITY ASSURANCE SPECIFICATIONS FOR FLOAT GLASS

MANUFACTURING STANDARDS

Hartung Glass Industries manufactures fabricated glass products that meet and exceed the following standards:

- All Flat Glass Products: ASTM C1036 and CAN/CGSB-12.1-M
- Heat Treated Glass: ASTM C1048, ANSI Z97.1 and CPSC 16CFR1201 CAT I and II
- Mirrors: ASTM C1503
- Insulating Glass Units: ASTM C1249 - 18, ASTM E2190 and are Class A rated
- Wire Glass: ASTM C1036 and listed by UL as fire retardant material.
- Laminated Flat Glass: ASTM C1172, ANSI Z97.1, CPSC 16CFR1201 Category I and II as well as CAN/CGSB-12.1-M.

A. SCRATCHES, RUB MARKS AND CRUSH

Main Zone: See Diagram 1. When viewing glass in normal daylight, without direct sunlight, any scratch, rub mark or crush visible from 5.5 feet, when standing in the viewing area (see Diagram 2), is not acceptable.

Rim Zone: See Diagram 1. When viewing glass in normal daylight, without direct sunlight, any scratch, rub mark or crush from 11 feet, when standing in the viewing area (see Diagram 2), is not acceptable.

EDGE (See Diagram 1)			
Tempered Lites		Annealed Lites	
With Edgework	Without Edgework	With Edgework	Without Edgework
No visible damage allowed on the edge	No damage is to extend further than 1/4" in from the edge of the glass	No visible damage allowed on the edge.	No damage that would weaken the structure of the lite is allowed

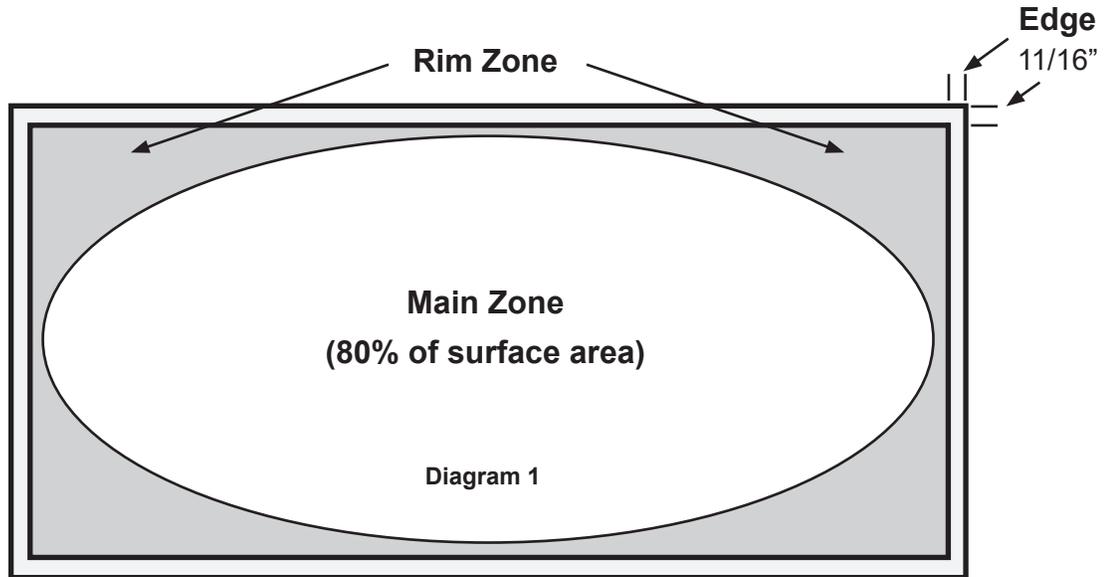
B. SURFACE AND SUBSURFACE (Cat eyes, rash, seeds, pitting and other defects)

Main Zone: See Diagram 1. When viewing glass in normal daylight, without direct sunlight, any cate eye, stone or other manufacturing defect visible from 5.5 feet, when standing in the viewing area (see Diagram 2), is not acceptable.

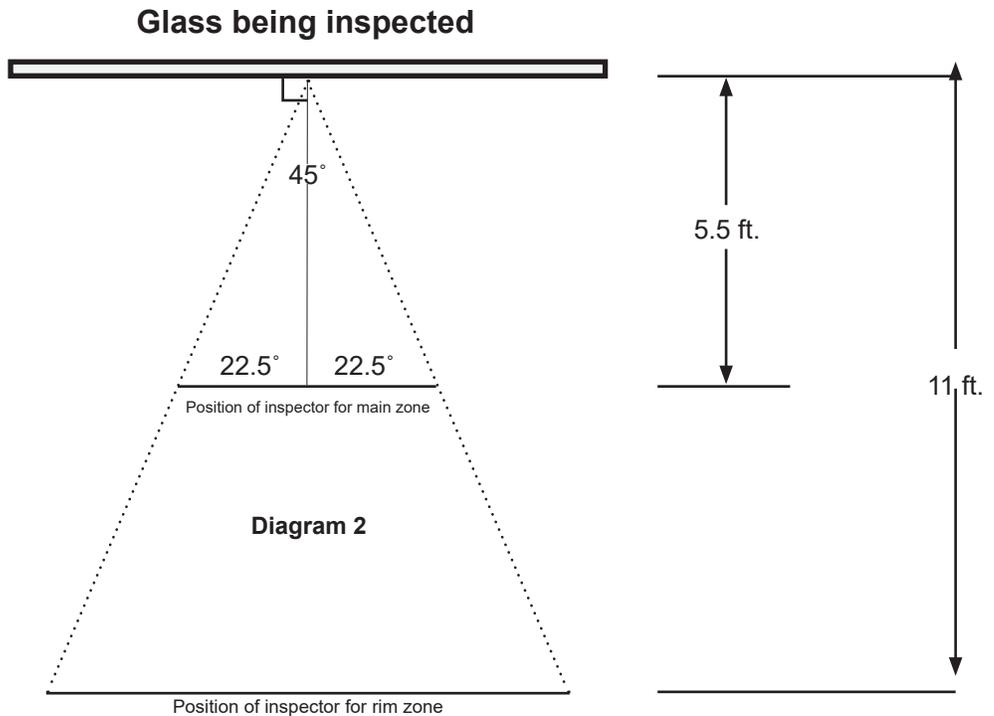
Rim Zone: See Diagram 1 and ASTM 1036 - Table 2.

EDGE (See Diagram 1)			
Tempered Lites		Annealed Lites	
With Edgework	Without Edgework	With Edgework	Without Edgework
No flaws that adversely affect the appearance of the edge are allowed	Flaws are acceptable in this area	No flaws that adversely affect the appearance of the edge are allowed	No flaw that would weaken the structure of the lite is allowed

OVERALL QUALITY ASSURANCE SPECIFICATIONS FOR FLOAT GLASS

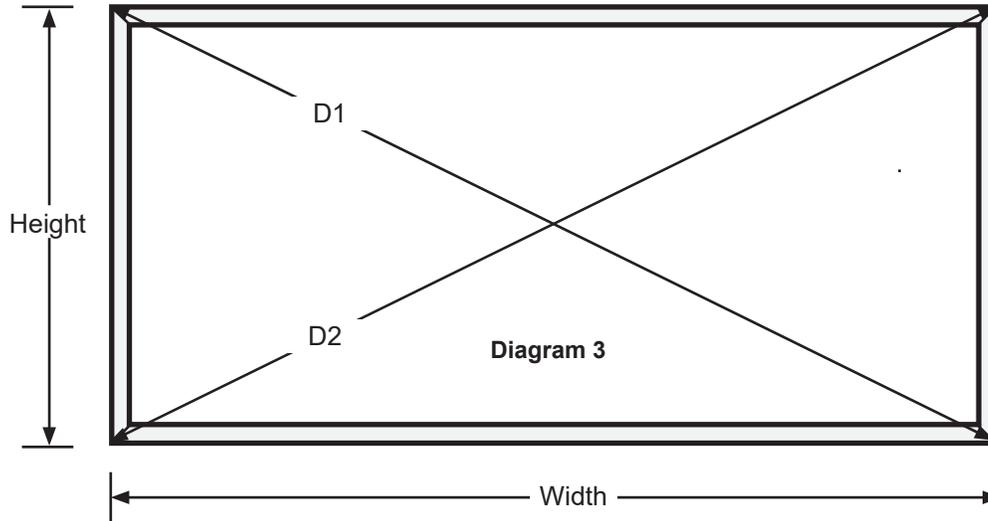


When inspecting glass, the surface of the glass should be divided into three zones. The Edge is the area from the edge to 11/16". The Main Zone is an oval in the center of the glass comprising of 80% of the glass surface. The Rim Zone is the remainder of the area that is left.

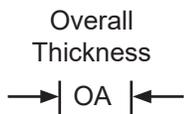


When inspecting a lite of glass, you should be standing 5.5 - 11 feet to from the surface of the glass and up to a 45° angle that is centered on the perpendicular to the glass surface.

QUALITY STANDARDS FOR INSULATING GLASS



UNIT DIMENSIONAL STANDARDS (See Diagrams 1 & 2)		
Width & Height Dimensional Standards	Squareness Standard	Overall Thickness
Up to 30": +1/8" to -1/16" 30" to 60": +5/32" to -1/16" 60" to 84": +3/16" to -1/16" Over 80": Please call	The difference between diagonal measurements cannot exceed 1/4"	See Table 1A



Overall Thickness Variances for Insulating Glass Units Table 1A		
Overall (OA)	Minimum	Maximum
7/16"	0.41"	0.49"
1/2"	0.48"	0.55"
9/16"	0.54"	0.63"
5/8"	0.60"	0.70"
11/16"	0.66"	0.76"
3/4"	0.70"	0.81"
13/16"	0.74"	0.88"
7/8"	0.83"	0.95"
15/16"	0.86"	0.99"
1"	0.94"	1.06"
1-1/16"	1.00"	1.12"
1-1/8"	1.06"	1.19"
1-3/16"	1.13"	1.25"
1-1/4"	1.18"	1.31"

INSULATING GLASS FABRICATION GUIDELINES

Hartung Commercial IG Capabilities	
Maximum IGU size	110" x 189"
Minimum IGU size	12 in. x 12 in.
Maximum IGU weight	Up to 2000 lbs.
Glass Thicknesses	3/16" - 2.5"
Spacers	Aluminum / stainless steel TriSeal structural silicone warm edge
Maximum IGU thickness (overall)	3-1/2"

Hartung Residential IG Capabilities	
Maximum IGU size	83" x 143"
Glass Thicknesses	3/32" - 1/4"
Spacers	Aluminum Super Spacer warm edge foam Evo
Maximum IGU thickness (overall)	2"
Gas fill	Argon
Standard Sightlines	7/16" - 3/4"
Muntin Bar/Grid	5/8", 3/4" and 1" Flat and sculptured Black, almond & white

TEN YEAR WARRANTY FOR COMMERCIAL INSULATING GLASS UNITS

Hartung Glass Industries warrants our dual seal polysulfide and silicone insulating glass units against obstruction of vision from dust or film formation between the sealed panes of glass, resulting from failure of the perimeter seal due to defective materials or defective workmanship in the manufacturing of this product. This warranty shall not apply if the failure of the seal is caused by Acts of God, improper installation by persons other than our employees or authorized dealers, mishandling by persons other than our employees, or by any other cause whatsoever not within our exclusive control, and shall not apply unless the failure occurs and claim is delivered to us within 10 years after the unit leaves our possession.

Unit(s) must be properly installed following guidelines of the FGMA manual. Our obligation is to replace the defective IG units F.O.B. Dealer's warehouse from which the original sale was made, not to install said unit or units. Hartung Glass Industries reserves the right to require an inspection by one of our employees prior to replacement.

Hartung Glass Industries' warranty will be void in the event full payment is not received for the goods and services warranted.

* Exception: Warranty does not apply to units installed which exceed 15 degrees from vertical. Warranty does not apply to units installed in a mobile or marine based application, in a sauna or around a pool. Surface applied fills void warranty.

LIFETIME WARRANTY FOR RESIDENTIAL INSULATING GLASS UNITS

Hartung Glass Industries warrants our dual seal insulating glass units against substantial obstruction of vision from dust, film or moisture formation between the sealed panes of glass under normal conditions. This may be a result of failure of the perimeter seal due to defective materials or defective workmanship in the manufacture of this product. Glass breakage or scratches of any kind are not covered by the lifetime warranty.

- 1) This lifetime warranty is offered to the original purchaser and applies only to single family residences. It may not be transferred or assigned.
- 2) Hartung is not liable for damages caused by acts of nature including fire, flood or earthquake, mishandling by persons other than Hartung employees or any cause not within Hartung's exclusive control.
- 3) This warranty obligates Hartung to replace the defective glass only, FOB the dealer's warehouse from which the sale was originally made. Hartung will bear no other expense such as incidental or consequential damages of any kind and this does not obligate Hartung for installation or cost of installation of said unit or units.
- 4) Hartung may require an inspection be made by one of our employees prior to agreeing to a replacement.
- 5) This guarantee does not apply to any unit installed over 15 degrees from vertical. Any aftermarket coatings or films applied to the glass will void this warranty. Warranty does not apply to units installed in a mobile or marine based application, in a sauna or around a pool.
- 6) Proof of purchase required.
- 7) Hartung's warranty will be void in the event that full payment is not received for goods and services within the agreed terms of sale.
- 8) This warranty may only be modified upon written approval of Hartung's President or Vice President.

FIVE YEAR WARRANTY FOR LAMINATED GLASS

Each unit of clear and tinted laminated safety sheet glass sold for architectural purposes, to be free from delamination for a period of five (5) years from date of manufacture.

This warranty does not apply to exposed edge laminates.

The warranty shall be void if architectural or security laminated glass products have been damaged in handling or installation or have not been installed with HGI's Glazing Guideline; or have been subjected to stress or strain by reason of localized application of heat which caused excessive temperature differentials over the surface edges; or have not been protected against movement of building structure; or have been installed without provisions required by sound practices for adequate expansion and contraction of framing members; or have not been otherwise properly handled or installed. The manufacturer reserves the right to field inspect any architectural or security laminated glass products which is alleged to be defective.

Architectural or security laminated glass products glazed by materials which do not completely repel water for the life of the warranty, or with materials that deteriorate the architectural or security laminated glass products will not be covered by the warranty.

There is no warranty for glass breakage. The buyer is responsible for processing any and all freight claims. This warranty does not apply to materials not paid for in full. This warranty does not apply to laminating of customers own products.

This warranty is in lieu of any other warranties, expressed or implied, as to merchant ability, fitness for a particular purpose or any other end purpose or use and there are no warranties that extend beyond the description on the face hereof. Buyer shall assume all risk and liability for result obtained by use of the products whether singly or in combination with other materials or products. Due to the inclusions of hidden or visible "stones" in glass which are detrimental to the strength and appearance of glass and which may cause "spontaneous breakage" (most often found in tempered glass products). A warranty will not be considered or issued for breakage due to nickel sulfide, quartz, silicone, devitrication, scum, aluminous, cristobalite, batch or other stones formed by insoluble grains of contaminating materials and raw materials.

Liability under any warranty by HGI is limited to the replacement of the materials only without charge, F.O.B. HGI or, at the option of HGI to refund the purchase price of the products. HGI shall not be liable for any incidental or consequential expenses, such as labor costs arising from or alleged to have risen from the use of any glass covered hereby. This warranty does not cover replacement of architectural or security laminated glass products beyond the warranty period applicable to the original architectural or security laminated safety glass product purchased.

HGI is not to be held liable for damages or expenses due to the following: late delivery of raw materials, manufacturing delays, defective or broken glass (except to extent of express warranty), internal errors, improper handling or negligence by buyer, delays due to strikes, fires, delay of carriers, priorities of the government or any department thereof, acts of God or acts that are unavoidable and beyond the control of HGI.

LAMINATED GLASS GENERAL GUIDELINES

STRAIGHT LINE LAMINATION	
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.
VACUUM BAG LAMINATION (Special Order. Call for Details)	
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
TEXTURED/OBSCURE GLASS	
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 6mm or thicker 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.



LAMINATED GLASS GLAZING GUIDELINES

1. Do not expose the edges of laminated security glass to organic solvents, acids or any cleaner with ammonia, which can react with the plastic components. Many solvents and aggressive cleaners can cause delamination in glass laminates and cracking and/or delamination in polycarbonates.
2. Solvent residue and fumes can damage the edges of both glass laminates and polycarbonates, and cause cracking of polycarbonate. All primers for frame and/or glass surfaces must be checked for polycarbonate, TPU and PVB compatibility.
3. Weep all exterior glazed units to the outside to allow for water drainage. Prolonged exposure to water, water vapor, solvents or solvent vapors may cause delamination, haziness around the periphery or polycarbonate cracking.
4. All glazing accessories are not compatible with polycarbonate, TPU and/or PVB. Always check with the manufacturer of glazing accessories for compatibility.

Note: HGI's product warranty will be void if damage, delamination or cracking occurs due to material incompatibility.

5. Proper lighting ratios are critical for optimum performance of Transparent Mirror.
6. The thermal properties of Hartung's security glass products are essentially equal to the same thickness of laminated glass however, HGI's laminated glass can be combined into insulating units for improved thermal performance.
7. Wire glass is not as strong as annealed glass. Consequently, wire glass is more susceptible to breakage from handling and during installation. Wire glass can be incorporated into some security glass products however, this does not mean that the end product has been tested or has met its original testing criteria. Incorporating wire glass into laminates does not create a fire-rated product. Holes are not offered in these laminates.

Please check with HGI's Inside Sales Department for availability.

8. HGI recommends that you view glass samples if you plan to incorporate reflective or tinted glass samples if you plan to incorporate reflective or tinted glass into security glass products to achieve a uniform exterior building appearance. Varying glass unit thickness] will affect aesthetic appearance. Contact Hartung's Inside Sales Department for specific limitations on the use of reflective glass in security laminates.

FIVE YEAR WARRANTY FOR CERAMIC FRIT

Hartung Glass Industries (HGI) warrants its silkscreened and HD Glass digitally printed ceramic frit coatings for a period of five (5) years from the date of manufacture against defective materials or workmanship that result in peeling, cracking or deterioration of the coating under normal conditions.

In the event that a product with a ceramic frit coating is found to be defective, Hartung Glass Industries will replace the panel without charge, FOB Hartung Glass Industries. HGI will not be liable for any other expenses involved in the removal of said unit, installation of the replacement unit, or any other incidental or consequential damages. The warranty of the replacement glass will be limited to the remainder of the original glass.

Hartung Glass Industries assumes no responsibility for product failure caused by the following: improper usage; incompatibility with other materials; faulty installation or building construction or design; abnormal weather conditions; or damage from improper cleaning.

HGI's warranty will be void in the event that full payment is not received for the goods and services warranted. HGI makes no other warranty, either expressed or implied, regarding the product.



CERAMIC FRIT AND OPACI-COAT-300 GUIDELINES

HD Glass Digitally Printed Ceramic Frit

Image Resolution (preferred)	≥ 600 ppi
Image Resolution (minimum)	180 ppi
Bleed	0.06"
Color space required	RGB
HD Print Heads	24
Glass Size (max)	84" x 142.5"
Glass Size (min)	12" x 12"
Glass Weight (max)	500 lbs.
Color Matching	Pantone® and RAL®
File Type (preferred)	Vector (ai, eps, some PDF)
File Type (compatible)	psd, jpg, pdf, tif, dwg, dxf
Medium	Ceramic Enamel Frit

Please contact hdglass@hartung-glass.com for complete specification requirements or any questions.

Impressions Silk Screened Ceramic Frit

- Maximum size Rolled: 84" x 140 (250-lbs)
- Minimum size Rolled: 18" x 3-1/2" (18" diagonal, 1/4-in. min. thickness)
- Maximum size Screened: 78" x 140" (250-lbs)
- Minimum size Screened: 12" x 12" (5-1/2" x 5-1/2" undersize available at additional cost)

Impressions Silk Screened Ceramic Frit Standard Colors:

Black, Warm Gray, Evergreen, Gunmetal, Lava Bronze, High Opacity White, Ceramic Etch, Satin Etch, Solar Gray, Charcoal, Solar Bronze, Ford Blue

Opaci-Coat-300

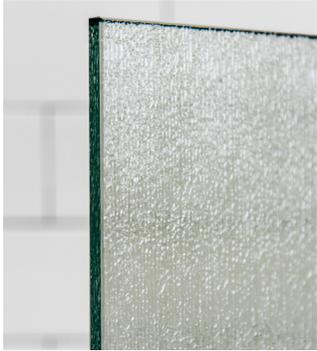
Location	Max. Rolled	Min. Rolled	Max. Sprayed	Min. Sprayed	Max Weight
Tukwila, WA	75" x 120" **	5" x 24" (1/4-in. min.)	75" x 120" **	14" Diagonal	200-lbs
Wilsonville, OR	84" x 140"	18" x 3-1/2" (1/4-in. min.)	N/A	14" Diagonal	250-lbs

* Larger sizes subject to review.

Subject to product limitations for any fabrication required.

Opaci-Coat-300 Standard Colors: Black, Evergreen, Primary White, Snow White, Light White, Lava Bronze, Medium Gray, Warm Gray, Harmony Blue, Harmony Bronze, Harmony Gray, Harmony Solex

GLASS TYPES



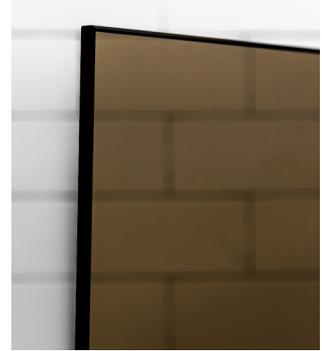
Aqui



Bamboo



Barock



Bronze



Bubbles



Esto



Etre



Glue Chip



Gray



Narrow Reed



P-516 Obscure (Pinhead)



Rain



Satin Etch / Crystal Etch



Guardian ShowerGuard



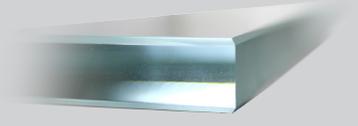
Vitro Starphire



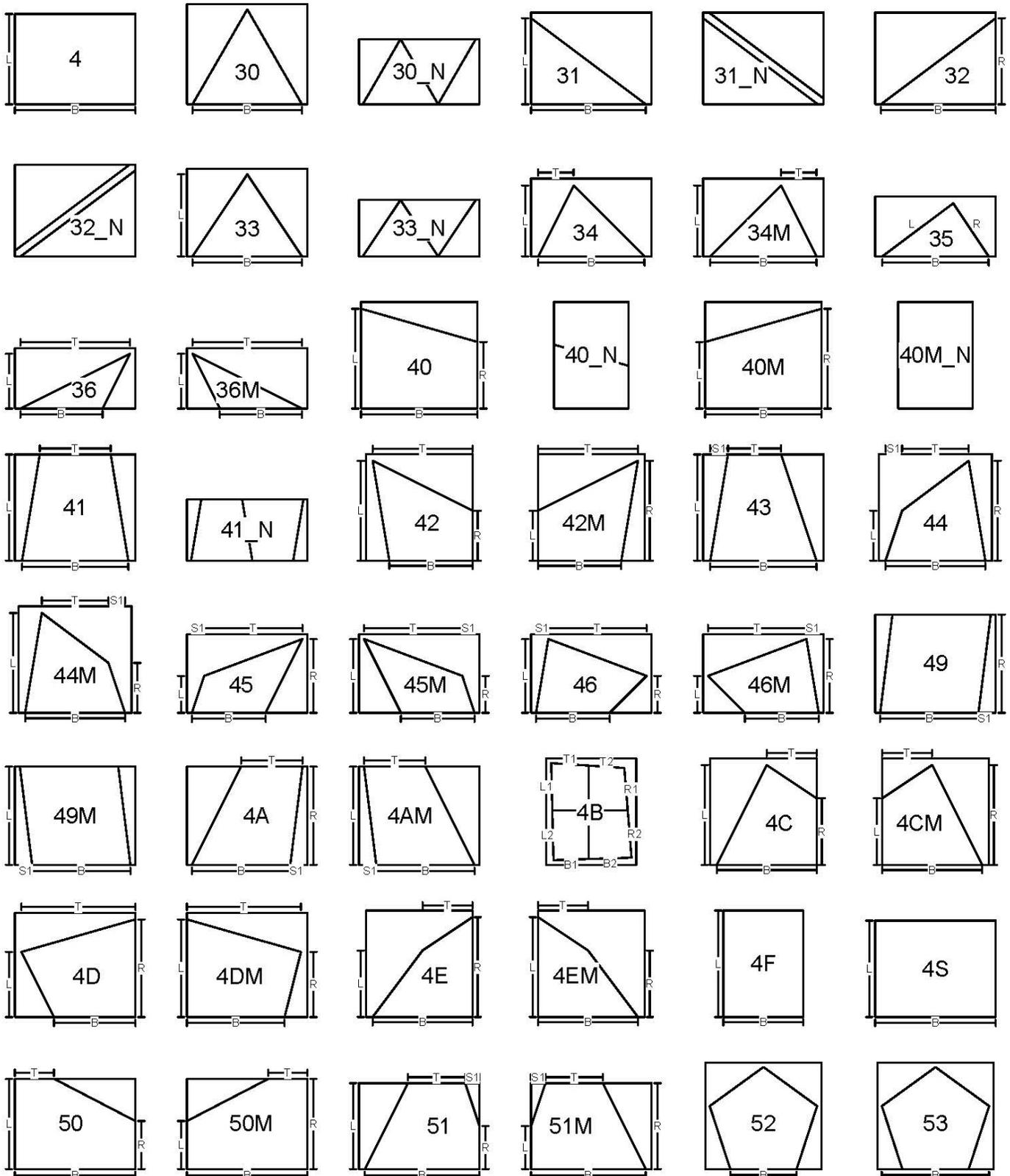
Velvex

Not pictured: Atlantica, Blue Green, Clear, Cross Reed, Delta Frost, Energy Advantage Low E, Flemish, Frosted Glue Chip, Greylite II, Laminated, Mirror, Mirrorpane, Mirrorview, Mistlite, Monumental, Neocram, Seedy #100, Seedy Reamy, ShowerGuard (Clear & Low Iron), SNX62/27, Solarban 60, Solarban 70, Solarcool Bronze, Solarcool Gray, Solexia, Super Neutral 68, Wire (Square Baroque & Diamon Misco)
Call for availability. Not all glass types available at all locations.

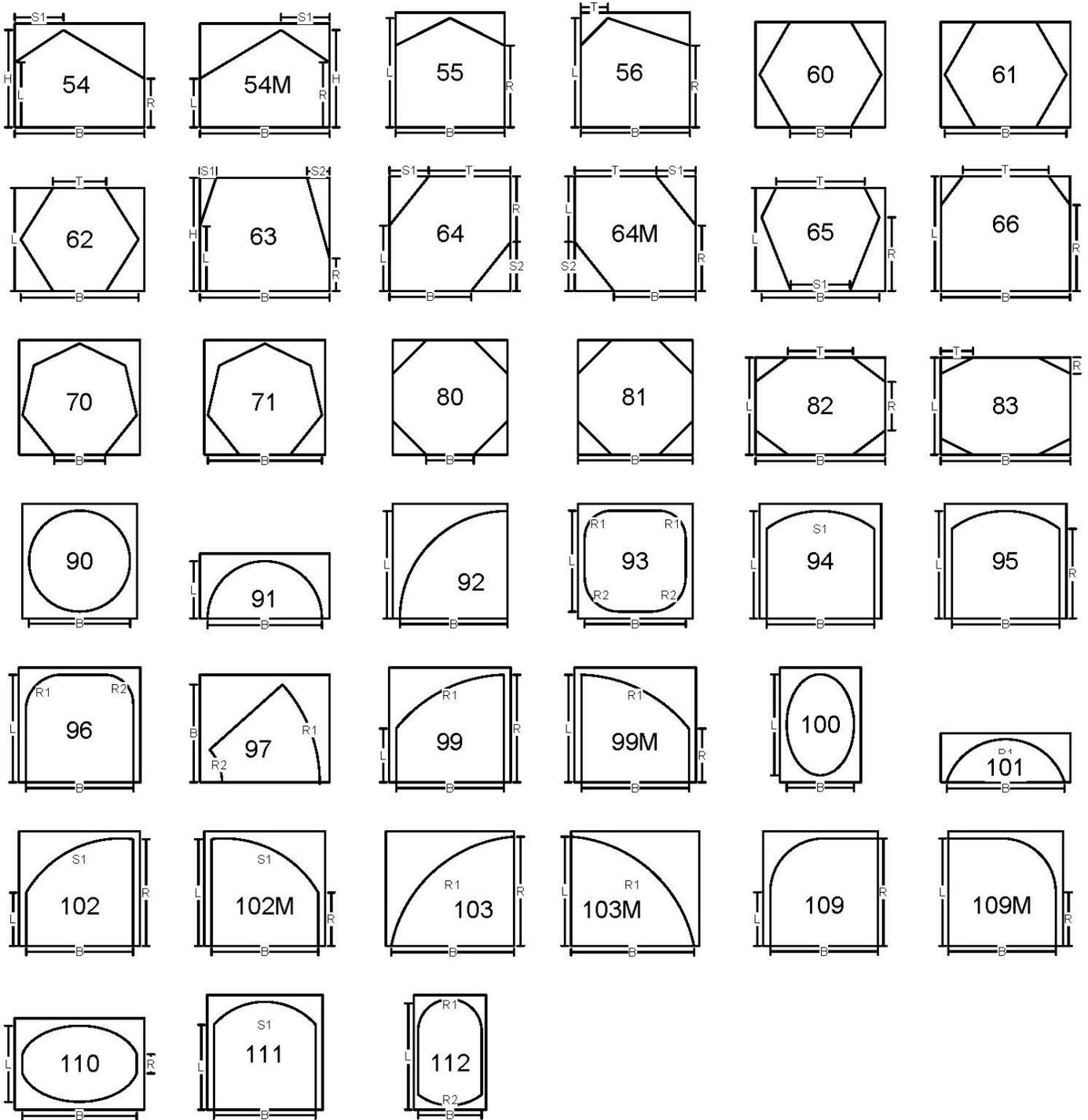
EDGEWORK

EDGE TYPE	VIEW	AVAILABILITY
CUT ONLY		1/8", 3/16", 1/4", 3/8", 1/2", 3/4"
SEAMED EDGES		1/8", 3/16", 1/4", 3/8", 1/2", 3/4"
FLAT GRIND		1/8", 3/16", 1/4", 3/8", 1/2", 3/4"
MITRED EDGE		1/4", 3/8", 1/2", 3/4"
FLAT POLISH		1/8", 3/16", 1/4", 3/8", 1/2", 3/4"
PENCIL GRIND		3/16", 1/4", 3/8", 1/2", 3/4"
PENCIL POLISHED		3/16", 1/4", 3/8", 1/2"
BEVELED EDGE		3/16", 1/4", 3/8", 1/2"

SHAPE CATALOG



SHAPE CATALOG



CERTIFICATION STATEMENT

HARTUNG GLASS INDUSTRIES, INC. manufactures tempered glass that complies with ANSI Z97.1 and CPSC 16CFR1201 Category I and II.

All HARTUNG GLASS INDUSTRIES, INC. flat glass products including laminate, tempered, heat strengthened, and spandrel glass comply with ASTM Standards and Specifications for Flat Glass as outlined in ASTM C1036, quality Q3 and C1048, as well as Canadian CAN/CGSB-12.1-M. Mirrors supplied by HARTUNG GLASS INDUSTRIES, INC. comply with the Mirror Select Specification C1036, quality Q1 and ASTM C1503. Please note these specifications supersede federal Specification DDG-1403-b and DDG-451-d.

Insulating Glass Units manufactured by HARTUNG GLASS INDUSTRIES, INC. comply with ASTM E2190 and are Class A rated.

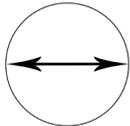
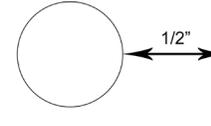
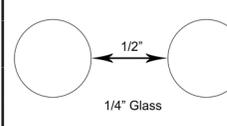
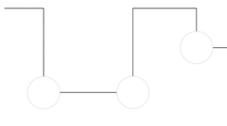
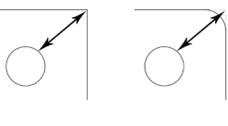
Wire Glass provided by HARTUNG GLASS INDUSTRIES, INC. complies with ASTM C1036 and listed by UL as fire retardant material.

Laminated Flat Glass distributed by HARTUNG GLASS INDUSTRIES, INC. complies with ANSI Z97.1, CPSC 16CFR1201 Category I and II, and ASTM C1172, as well as Canadian CAN/CGSB-12.1-M.

All installation and glazing recommendations as per Glass Association of North America (GANA) glazing manual.

HARTUNG GLASS INDUSTRIES recommends ASTM E1300: Standard Practice for Determining Load Resistance in Glass for determining the appropriate thickness and type of glass to meet a specified wind and snow load.

FABRICATION POLICY

Radius Corners		Minimum Hole Diameter	Minimum distance from rim of hole to edge of glass	Minimum distance from rim of hole to rim of adjacent hole	Minimum inside radius	Minimum distance from rim of hole to corner					
Radius	Radius										
Dime Radius	5/16"										
Nickel Radius	3/8"										
Quarter Radius	7/16"										
1/2" Radius	1/2"										
Fifty Cent Radius	9/16"										
Dollar Radius	7/8"										
1" Radius	1"										
		1/4" Glass									
Glass Thickness		Equal to glass thickness (1/4" minimum)		2 x glass thickness (1/4" minimum*)		2 x glass thickness (3/8" minimum*)		Equal to glass thickness (1/4" minimum)		6.5 x glass thickness*	
1/8"	3mm	1/4"	6mm	1/4"	6mm	3/8"	10mm	1/4"	6mm	13/16"	21mm
5/32"	4mm	1/4"	6mm	5/16"	8mm	3/8"	10mm	1/4"	6mm	1"	25mm
3/16"	5mm	1/4"	6mm	3/8"	10mm	3/8"	10mm	1/4"	6mm	1-1/4"	31mm
1/4"	6mm	1/4"	6mm	1/2"	12mm	1/2"	12mm	1/4"	6mm	1-5/8"	41mm
5/16"	8mm	5/16"	8mm	5/8"	16mm	5/8"	16mm	5/16"	8mm	2-1/16"	52mm
3/8"	10mm	3/8"	10mm	3/4"	19mm	3/4"	19mm	3/8"	10mm	2-7/16"	62mm
1/2"	12mm	1/2"	12mm	1"	25mm	1"	25mm	1/2"	12mm	3-1/4"	83mm
5/8"	15mm	5/8"	15mm	1-1/4"	31mm	1-1/4"	31mm	5/8"	15mm	4-1/16"	103mm
3/4"	19mm	3/4"	19mm	1-1/2"	38mm	1-1/2"	38mm	3/4"	19mm	4-7/8"	124mm

DIMENSIONAL TOLERANCES		
Thickness	Standard Tolerance	Hold Dimension Tolerance
1/8"	+/- 1/16"	N/A
3/16"	+/- 1/16"	+0" -1/16"
1/4"	+/- 1/16"	+0" -1/16"
3/8"	+/- 3/32"	+0" -1/16"
1/2"	+/- 1/8"	N/A*
3/4"	+/- 3/16"	N/A*

* We cannot guarantee "Hold Dimension" on 1/2" or 3/4" glass
It is necessary to have a tolerance, due to in-flares, when cutting heavy glass

When ordering glass that is for a "fit in" application, we suggest the product is ordered with hold dimension tolerance. This will insure the lite will not be larger than your requested dimension and therefore fit inside whatever is to hold the glass, such as a glass table top.

HOLD DIMENSION PRICING

When ordering fabricated glass to Hold Dimension tolerances, there will be an additional 10% charge of the total price of the lite.

EDGEWORK DEFINITIONS

Straight Line or Machine Edgework: Straight sides, flat edges, no cuts.

Shape or Manual Edgework: Circles, ovals, any irregular shapes other than straight line.

Undersize Glass: Glass under 6" in length or width requires quote.

All edgework is priced to the next even inch

$$12-1/8" \times 36-3/8" = 14 \times 38$$

$$23 \times 25 = 24 \times 26$$

Minimum Fabrication Charges

Minimum edgework charge is 48 lineal inches per lite and per type of edgework

3 sq. ft. minimum per lite

Packaging

Cardboard wrap: \$5.00 minimum

Board & Band: \$25.00 minimum

Solid Wood Crate: \$225.00 minimum



WEIGHTS & MEASURES

Thickness	Approx. LBS per SQ.FT.
1/8" 3mm	1.6
5/32" 4mm	2.0
3/16" 5mm	2.4
1/4" 6mm	3.0
5/16" 8mm	4.0
3/8" 10mm	5.0
1/2" 12mm	6.4
15mm 5/8"	8.1
19mm 3/4"	9.8

IMPERIAL		METRIC
Fraction	Decimal	Millimeter
1/32	0.031	0.80
1/16	0.063	1.60
3/32	0.094	2.40
1/8	0.125	3.20
5/32	0.156	4.00
3/16	0.188	4.80
7/32	0.219	5.60
1/4	0.250	6.40
9/32	0.281	7.10
5/16	0.313	7.90
11/32	0.344	8.70
3/8	0.375	9.50
13/32	0.406	10.30
7/16	0.438	11.10
15/32	0.469	11.90
1/2	0.500	12.70
17/32	0.531	13.50
9/16	0.563	14.30
19/32	0.594	15.10
5/8	0.625	15.90
21/32	0.656	16.70
11/16	0.688	17.50
23/32	0.719	18.30
3/4	0.750	19.10
25/32	0.781	19.80
13/16	0.813	20.60
27/32	0.844	21.40
7/8	0.875	22.20
29/32	0.906	23.00
15/16	0.938	23.80
31/32	0.969	24.60
1	1.000	25.40



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FOR YOUR BUSINESS!**

