

Production Run Quality Standards

CVTG is tooled to produce glass in accordance with ASTM International C 1036: Standard Specification for Flat Glass and ASTM International C 1048: Standard Specification for Heat Treated Flat Glass. All general production run glass produced by CVTG is defined by ASTM as q3 grade and shall fall within these standards.

For a complete copy of ASTM C 1036 and ASTM C1048 please contact a CVTG representative or visit our website at <http://www.cvtg.net>

General Scope: This standard covers 3MM (1/8") – 6MM (1/4") quality specifications of clear, patterned or tinted monolithic, flat glass, cut to size and are to be primarily used for architectural and general automotive glazing applications (q3 Grade).

a. Edge Shell Chip:

- i. Chip Depth: \leq 50% the thickness of the glass
- ii. Chip Width: \leq Glass Thickness or 1/4" whichever is greater
- iii. Chip Length: \leq 2 times the chip width

b. Edgework:

- i. #1 Edge/Pencil Edge - Ground and rounded edge with no "shiners" (car window partially rolled down)
- ii. #2 Edge - Similar to #1 Edge with minimal "shiners" allowed
- iii. #4 Edge - Standard Swipe/Seam
- iv. Flat Polish - Ground Flat, Arrissed/Chamfered corners and highly polished

c. Fabrication Holes:

- i. Distance from edge of glass to rim of hole must be at least 2x the thickness of the glass
- ii. Hole chips are acceptable up to 1/16" around the rim of the hole
- iii. The diameter of any hole must be a minimum of 2x the thickness of the glass.
- iv. Hole tolerance +/- 1.5mm

d. Size/Dimensional Tolerances:

- i. Width & Height: +/- 1/16" (includes break out dips, and nubs)
- ii. Squareness: 5/64"

e. Linear Blemishes/Scratches:

- i. Scratches visible from more than 132" (11ft) away are not permissible
- ii. Scratches visible from 40" – 132" away are only permissible if separated by more than 24" and less than 3" in length
- iii. "Light" Scratches visible from 8" – 39" are permissible

f. Logo Locations

- i. Logo Locations may be specified relative to general area (i.e: bottom right hand corner)
- ii. Logo specifications may be made relative to location from edges and will be considered accurate within 1/2" of specified location.

g. Break Pattern & Fragmentation:

- i. In accordance with ANSI Z-97.1-2004 the 10 largest crack free particles shall not weigh more than 10 square inches of glass thickness substrate:

Glass Thickness	Lbs/Ft ²	10 Largest Particles
1/8" - 3.2mm Glass	1.7	< 53.5 grams
5/32" - 4.0mm Glass	2.0	< 66.1 grams
3/16" - 5.0mm Glass	2.4	< 75.5 grams
1/4" - 6.0mm Glass	3.0	< 94.4 grams

Select Grade (q2) quality glass is available in some product offerings. Please contact CVTG for further details on Select Grade quality offerings.