SYRACUSE GLASS COMPANY

GLASS INSPECTION PROCESS

This document is based on Industry Standard ASTM C1036 Standard Specification for Flat Glass. The full document is copyrighted by ASTM, available at www.astm.org for $35.00. This standard covers glass products intended for commercial or residential use as windows, doors, tabletops, shelves, etc. Inspection procedures for mirrors are covered in ASTM C1503.

Syracuse Glass Company combines state-of-the-art fabrication equipment and glass industry best practices to produce high quality fabricated glass products. But with closer scrutiny than glass products are subject to in normal use, flaws and imperfections are observable. The processes and coatings that add strength, energy efficiency and beauty to fabricated glass products requires the application of heat, pressure, and handling that can create flaws in glass surfaces. Observable flaws allowed under this standard will not cause glass products to break or fail.

All inspections are done with the viewer's angle at 90° to the glass surface with uniform diffused background lighting that simulates daylight. Q3 glass is inspected as follows for "linear blemishes" (scratches and "rubs").

- Place specimen approximately 160" from view
- Move toward specimen until blemish is detected. The distance between the specimen and the viewer when the blemish is first detectible is the "detection distance."

If the detection distance is:	the blemish is:
> 132"	Heavy
132" – 40"	Medium
39" - 8"	Light
< 8"	Faint

Evaluate defects using this chart	Q3 GLASS
Faint Blemish <3"	Allowed
Faint Blemish >3"	Allowed
Light Blemish <3"	Allowed
Light Blemish >3"	Allowed
Medium Blemish <3"	Allowed w/24" Separation
Medium Blemish >3"	Not Allowed
Heavy Blemish	Not Allowed

"Point blemishes" (bubbles, pits, knots, dirt) are inspected as follows:

- Place specimen 39" from viewer.

If defects are observed, evaluate using the chart:	GLASS
Blemish < .02" (1/64")	Allowed
.02" < .03" (1/32")	Allowed
.03" < .05" (1/16")	Allowed
.05" < .06" (1/16")	Allowed with 24" Separation
.06" < .08" (3/32")	Allowed with 24" Separation
> .08"	Not Allowed

NOTE:
1) This chart applies to glass < 1/4" thick. 3/8" and 1/2" glass contain proportionally larger blemishes at the same separation distances.
2) Stock sheets <75 square feet add one (1) rejectable point blemish, >75 square feet add two (2).
3) See ASTM Standard for Evaluation of Rolled Pattern Glass Products.

Dimensional Tolerance for Rectangles				
Glass Thickness	**Length & Width Tolerance**		**Diagonal Tolerance**	
	Cut Size	Stock Sheet	Cut Size	Stock Sheet
3/32”-1/4”	1/16”	1/4"	5/64”	1/8”
3/8”	3/32”	1/4"	1/8”	1/4"
1/2"	1/8”	1/4"	11/64”	3/8”
3/4"	3/16”	1/4"	1/4”	9/16”

For dimensional tolerances on shapes, or glass with edgework, see Fabricated Glass Dimensional Tolerance Chart.
For dimensional tolerance of insulating glass, see Insulating Glass Size Tolerance Chart.

Edge Chips

- Chip depth - measured from the face of the glass into the thickness. Allowed up to 50% of the glass thickness.
- Chip width – perpendicular distance from the edge of the glass to the inner edge of the chip. Allowed up to half the glass thickness or 1/4" whichever is greater for glass; for mirror, half of glass thickness or 1/16” whichever is greater.
- Chip length – distance parallel to edge of glass from one edge of a chip to the other. Allowed up to two (2) times the chip width.

CUT SIZE MIRROR INSPECTION PROCESS
(See ASTM C1503 for Stock Sheets, Point Blemishes and Edge Chips)

If the detection distance is:	the blemish is:
> 60”	Heavy
60” – 24”	Medium
24” - 8”	Light
< 8”	Faint

Mirror Glazing Quality Linear Blemishes	
Faint Blemishes	Allowed
Light Blemishes <3”	Allowed with 24” Separation
Light Blemishes >3”	None Allowed
Medium or Heavy Blemishes	None Allowed

COATED GLASS INSPECTION PROCESS:

- Reflective or low-e coatings are inspected as follows from a location 10 feet from and at a viewing angle 90 degrees from the glass surface in natural daylight or using a neutral artificial light source:
- Coating pinholes greater than 1/16” in diameter are not allowed. Clusters of pinholes, defined as 3 or more pinholes exceeding 3/64” in diameter within a 6” diameter are not allowed in the central viewing area if visible at 10 feet. Pinholes less than 1/16” are allowed outside the central viewing area.
- Coated glass may exhibit a hue or color that may not be apparent in hand samples, especially when shaded and exposed to light at a glancing angle.
- Scratches visible at 10 feet and over 3 inches long are not allowed in the central viewing area.
- The central viewing area is defined as 80% of the width and 80% of the length dimensions centered on the lite of glass.

SPANDREL GLASS INSPECTION PROCESS:

- View spandrel glass from building exterior at a distance of 15’ after the spandrel glass is backed up with a uniformly colored material.
- Spandrel glass is not intended to be viewed from the interior.