

WEST COAST

INSULATED GLASS PRODUCTS

QUALITY CLASSIFICATIONS

Glass products used for and produced by West Coast Insulated Glass Products, conform to the following ASTM documented specifications;

ASTM C 1036 (Standard Specification for Flat Glass) Q3/Glazing Select

ASTM C 1048 (Standard Specification for Heat-Treated Flat Glass)

ASTM C 1376 (Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass)

ASTM C 1172 (Standard Specification for Laminated Architectural Flat Glass)

ASTM E 2190 (Seal Durability of Insulated Glass Units)

VISUAL INSPECTION CRITERIA

Defects shall be viewed in transmission using daylight or simulated daylight of no less than 400 lux, utilizing a viewing angle of 90 °. No direct sunlight. If a light box is used as the light source, the diffusing plate shall be parallel to and at a distance of 10 feet from the glass. If you are inspecting overhead windows, the glass will be 10 feet from and parallel to the diffusing plate. Inspection should not exceed viewing of more than 5 seconds for lites up to 6 square feet, 10 seconds for lites up to 35 sq ft, and 20 seconds for lites larger than 35 square feet, either in transmission or reflection. If defects are visible beyond what is allowable as listed below using the inspection criteria, the glass may be rejected.

Central Viewing Area- The middle 80% of the length and width of the lite is considered the central area. The central area shall be inspected at a distance of 10 feet from the observer.

Border Area- the border area is comprised of the outer 20 % edge of the lite. The border area shall be inspected at a distance of 10 feet from the observer.

ALLOWABLE DEFECTS

<u>Coating Defect Type</u>	<u>Central Viewing Area - Allowable defect size</u>	<u>Border Viewing Area - Allowable defect size</u>
Pinhole or Debris	1/16" or 1.6 mm (see description 1)	3/32" or 2.4 mm
Coating Scratch	1" or 25 mm max length	3" or 75 mm max length
Coating Rub	Not allowed	Length plus width not to exceed 3/4" or 19 mm
Corrosion	Not allowed	Not Allowed

1. Debris, Dirt, Spots in central viewing area– must be 1/16" or less. No more than 5 allowed in a 12" area.
2. Arcing/Crazing- ≤1/2", on edge only
3. Seeds, Bubbles, Knots, Stones –must be 1/16" or less, must be separated by 24".
4. Chips – Corners:
 - a. Adhesive Chips- None allowed
 - b. Shell chip- No more than 1/4" wide by 1/4" long and less than 1/2 the thickness of the

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glass in depth. No more than one per side.

- c. Flake chip- < 1/64", no limit
- d. Corners – Flares are allowed within the dimensional tolerance of the unit.
- e. Corner off – Up to ¼" if edge surface is smooth. Rough damage is not allowed.
5. Coating – Must be uniform on the lite inspected, when viewed in transmission using the inspection criteria previously stated above.
6. Dimension- +/- 1/16" on all annealed cut size products and +/- 1/16" on all tempered glass.
7. Bow- 1/32" per foot + 1/32" for all tempered products.
8. Glass Thickness- per ASTM

DEFECT DEFINITIONS

- 1) Bow/Warp: a deviation in the flatness of the glass, typically defined by S Warp, Picture Framing or Kink.
- 2) Chips:
 - i. Adhesive Chip- a small piece of glass adhered to the surface- typical to tempered glass
 - ii. Flake Chips: shallow chips at the edge of the glass, much like a shell chip but smaller.
 - iii. Shell Chip: a smooth, shell like chip at the edge of the glass
- 3) Coating Debris: irregular areas of missing coating creating voids in the surface
- 4) Arcing/Crazing: a random conglomeration of fine lines or micro cracks in the coating, may be similar in appearance to a lightning bolt.
- 5) Corrosion: degradation of the coated surface, may appear as spots with irregular edges
- 6) Dimension: the specifications for the size variation allowed on a piece of glass
- 7) Glass thickness: the upper and lower specifications for glass thickness
- 8) Logo: A permanent mark required on all tempered glass to identify the producing plant and verify process certification.
- 9) Scratch: A marring of either surface of the glass, may be linear or otherwise
- 10) Seed, Stones, Bubbles, Knots: an inclusion within the body of the glass that results in a point defect that may include distortion.