INSULITE GLASS COMPANY

Digital Printing by Insulite
Inspection and
Technical Information

Printing can be done on monolithic, insulating, and laminated glass.

Maximum Dimensions: 60” x 120”
Minimum Dimensions: 14” x 14”
Dimensions other than those shown above may be considered but must be reviewed and approved by Insulite in writing prior to quoting and order acceptance.

Sample charges are based on the project complexity.

Inspection Guidelines:

- Digital printed glass is to be viewed from a distance of 15 feet under natural daylight conditions. Color and reflectance may very when viewed against a uniform opaque background. This is not considered a defect.
- Variations in perceived color and uniformity may occur with any ceramic ink. Variations will be more apparent with white or light colors than darker colors because of unavoidable light transmission.
- Pinholes, fisheyes, color concentrations, streaks and ‘banding’ from the printing/cleaning process and paint particles are allowed.
- Large clusters or close spacing of pinholes and defects are not allowed in the central ¾ of the glass area.
- 1/32” variation in dot, hole or line location is allowed.
- 3/16” nominal clear paint free edge around all edges to avoid overspray. Printed Insulated glass may have up to 3/8” nominal clear edge. When printing with simulated acid etch or sandblast ink, the nominal clear edge increases up to 3/4”.
- Images or patterns may be located up to 1/16” off parallel from locating glass edge.
- Images or patterns may be located up to 1/8” off parallel from edges other than locating glass edge due to glass tolerances.
- All cutting, edgework, hole drilling, notching, and grinding shall be performed prior to applying the digital print.
- Approval of a full-size mock-up at a 15 ft. inspection distance and a 90-degree angle to glass surface against a bright, uniform background is required.

Moiré Pattern

When using silk-screen patterns in architectural building applications, there may be a potential to see a Moiré pattern develop in the glass when viewed in certain light conditions and at specific solar angles. Coupled with these are the inherent dynamics of the construction process. Moiré is an optical phenomenon that presents itself as a “wavy, rippled or circular” pattern under some conditions. The Moiré image is a pattern formed when two regularly spaced patterns “overlap,” but are not aligned. Common examples may be woven fabric and window screens. In this case, the Moiré pattern appears to “shimmer” when light is reflected from the surface.

Architectural float glass will reflect light from each of its surfaces. When silk-screen patterns are applied to the #2 surface of an insulating glass unit, the image is reflected off of the #3 glass surface. It’s the interference of the reflected image from the #3 surface, by the silk-screen pattern applied to the #2 surface that causes the Moiré pattern.

The condition may be further pronounced by the air contained in the air space of the insulating glass unit. Air will expand when heated and contract when cooled. This is known as the Ideal Gas Law. Glass deflection may create the condition necessary for the Moiré pattern to occur, or may further distort the reflected image of the silk-screen pattern. With large glass sizes there is more potential for movement that can create a possible condition for the Moiré pattern effect to occur. Buildings under construction may have a higher potential to exhibit Moiré patterns because the glass temperatures have not been stabilized by controlled temperatures.

While it may be impossible to identify when the potential for Moiré pattern may occur, the following general recommendations may be helpful:

1. Line patterns closely spaced, or two glass surfaces having a silkscreen pattern applied (insulating glass) may be more prone to exhibiting a Moiré pattern.
2. To a lesser degree, silk-screen patterns using dots and holes, closely spaced may also be susceptible.
3. Insulating glass units used in spandrel areas may also be more prone to this phenomenon.
4. Large glass sizes with an aspect ratio (length to width ratio) of less than 2:1.
5. Highly transparent glass (clear, low-e coating).
6. Shadow box applications.