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SYRACUSE GLASS COMPANY

www.syracuseglass.com

Our Commitment Shines Through

Flat Glass Products - Tempering
Insulating - Beveling - Edgework
All-Glass Doors - Shower Enclosures
StoreFront and Curtain Wall Systems
Aluminum Entrances

EVALUATING THERMAL STRESS IN GLASS

High thermal stress in annealed glass can cause breakage if the thermal stress exceeds the glass edge strength.

The glass manufacturers and Syracuse Glass Company do not warranty their glass products against breakage.

It is very important that the project design professional conduct a glass strength analysis. Syracuse Glass offers the following services to help with the analysis:

- **Our website has links to internet based Thermal Stress Calculators created by Pilkington, Guardian or PPG. We will assist if needed.**
- **We can supply a formal analysis completed by Pilkington, Guardian or PPG technical staff. Elevation drawings that indicate building projections, framing details, interior shade, drapes or blinds details and HVAC register details are required.**

We can make the following general recommendations:

- **When thermal stress exceeds the strength of annealed glass, select heat treated glass, either heat strengthened or tempered.**
- **Select tempered glass where safety glass is required by law or building code or where human impact is a concern.**
- **Monolithic Spandrel Glass and both lites of a Spandrel insulating unit should be heat treated.**
- **The outboard lite of an offset unit should be heat treated.**
- **Any tinted or reflective outboard lite should be heat treated if there is a Low-E coating or the #2 or #3 Surface.**
- **High Performance Tinted Outboard Lites like PPG Optigray 23 or Graylite or Pilkington Supergray should be heat treated. If the insulating unit absorbs more than 70% of solar energy, the outboard lite should be heat treated.**
- **Even regular tinted glass may need to be heat treated if severe job conditions are present including:**
  - **severe shading caused by sunshades, over hangs, deep mullions, signs or deep sills that allow snow to accumulate.**
  - **interior heat traps caused by drop ceilings, drapes or blinds located within 2" of the glass surface or within 1-1/2" of the header or sill.**
  - **HVAC registers blowing directly onto the glass surface.**

The storage and construction periods subject annealed glass to the highest thermal stresses. These practices should be avoided with annealed glass:

- **Glass in crates or racks should not be stored in locations where it is subject to direct sunlight.**
- **Exterior scaffolding that shades the glass should be avoided.**
- **Annealed glass should not be glazed during freezing temperatures in an unheated building. The potential for thermal stress breakage decreases dramatically after the interior is heated.**