MANUFACTURING SPECIFICATIONS

HEAT TREATED GLASS

HEAT STRENGTHENED (HS) AND TEMPERED GLASS (TG), PROCESSED IN ACCORDANCE WITH ASTM C 1048

THICKNESS	*MAXIMUM*	*PROCESS*	*MINIMUM*	*PROCESS*
3mm - 1/8"	38” x 72”	TEMPER OR HS	6” x 15”	TEMPER OR HS
4mm – 5/32"	48” x 72”	TEMPER OR HS	6” x 15”	TEMPER OR HS
5mm - -3/16”	82” x 142”	TEMPER OR HS	6” x 15”	TEMPER OR HS
6mm – ¼”	82” x 142”	TEMPER OR HS	6” x 15”	TEMPER OR HS
8mm – 5/16”	82” x 142”	TEMPER OR HS	6” x 15”	TEMPER OR HS
10mm - 3/8"	82” x 142”	TEMPER OR HS	6” x 15”	TEMPER OR HS
12mm – ½”	82” x 142”	TEMPER ONLY	6” x 15”	TEMPER ONLY
16mm - 5/8"	82” x 142”	TEMPER ONLY	6” x 15”	TEMPER ONLY
19mm - 3/4"	82” x 142”	TEMPER ONLY	6” x 15”	TEMPER ONLY
These are the manufacturing limits that may be further reduced by restrictions of additional processes or unit makeup. The maximum recommended glass size is 50 square feet. Where 50 square feet is exceeded a technical review is required. Minimum sizes for heated treated glass is 6” x 15”.				

STRAIN PATTERNS

Strain patterns (polarization) are a characteristic of heat-treated glass .While not normally visible, a pattern of perceived faint light and/or dark spots or lines in heat-treated glass may become apparent under certain light and viewing conditions. The “quench pattern” is most apparent under polarized light with a visible horizon. Also when viewed at an oblique angle to the glass surface. The visibility of the pattern decreases as the viewing angle to the surface of the glass increases. When viewing from the interior of the building, the quench pattern may be visible from a 10° viewing angle and not apparent at a 90° viewing angle from the surface of the glass. When viewing the glass in reflectance from the exterior of the building, the quench pattern may be visible when looking at the glass surface at a 30-60° angle. Visibility of this pattern may be accentuated with thicker glass, tinted glass substrates, coated glass and multiple lites of heat-treated glass in laminated or insulating glass products. Strain patterns are characteristic of heat-treated glass and are not considered a defect.

GUIDELINES FOR HEAT TREATED GLASS INSPECTION (ASTM C 1048).

• **Flatness** -Due to the process of heat-treating glass, the original flatness of the annealed substrate is slightly modified. This inherent condition of heat-treated glass results in roller wave distortion and glass bow and warp. Target for roller wave is 0.003 ” with a maximum of 0.005” from peak to valley in the center of lites, and a maximum of 0.008" within 10” of the leading or trailing edge.

Tolerance for localized warp for rectangular glass is 1/32" (0.8mm) over any 12" (305mm), or half of the ASTM C 1048 Standard Specification for Heat-Treated Flat Glass standard of 1/16" (1.6mm) over any 12" (305mm) span

• **Surface Compression Tempered Glass** The minimum surface compression for fully-tempered glass is 10,000 psi. Target value, 12000 psi compression, in addition it complies with the safety glazing requirements as outlined by the American National Standards Institute (ANSI) Z97.1 and the federal safety standard Consumer Products Safety Commission (CPSC) 16 CFR 1201.

• **Surface Compression Heat Strengthened Glass**. The surface compression of heat-strengthened glass with thicknesses of 1/4" (6mm) and less is 3,500 - 7,500 psi. Target value is 5000 psi. (Because of reader repeatability and instrument tolerances, for heat-strengthened glass surface compression is +/- 1,000 psi.)

While improving the strength and resistance to thermal stress, heat-strengthened glass does not meet safety glazing requirements as outlined by the American National Standards Institute (ANSI) Z97.1 or the federal safety standard Consumer Products Safety Commission (CPSC) 16 CFR 1201, and therefore should not be used in these situations