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WA Wilson produces Heat Treated glass, either Heat Strengthened or Fully Tempered, using the trade name TempRite, which meets the requirements of:

ASTM C1036 Standard Specification for Flat Glass

ASTM C1048 Standard Specification for Heat Treated Glass

Heat Treated glass is a term used to describe annealed glass that has been processed through a tempering furnace to change its strength characteristics. The process is done in order to provide greater resistance to thermal and mechanical stresses and achieve specific break patterns for safety glazing applications as compared to annealed glass.

The process of Heat Treating glass involves taking annealed glass, cutting it to its finished size, fabricating the glass's edges and making any desired holes and or notches, and then transferring the glass to a horizontal furnace where it is heated to approximately 1,150° F. Once at this temperature, the glass exits the furnace and is then cooled, or quenched. Air is blown onto the glass surface on both sides simultaneously. This cooling process creates a state of high compression at the glass surfaces while the central core of the glass is in a compensating tension.

Heat Treating the glass improves its strength and resistance to thermal stress and shock, but because glass becomes more fluid in the tempering furnace, it is also inherently susceptible to roller wave, bow and warp while it is being Heat Treated.

There are two kinds of Heat Treated glass, **Heat Strengthened** (HS), which is cooled slowly in the air quench, and **Fully Tempered** (FT), which is rapidly cooled in the air quench.

Heat Strengthened (HS)

Heat Strengthened glass is twice as strong as annealed glass of the same thickness, size and type. If broken, heat-strengthened glass will break into large shards similar to annealed glass. Because of this, the tendency for the glass to vacate the opening is reduced.

While improving the strength and resistance to thermal shock and 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.

Fully Tempered (FT)

Glass with Fully Tempered surfaces is typically four times stronger than annealed glass and two times as strong as heat-strengthened glass of the same thickness, size and type. In the event that fully tempered glass is broken, it will break into fairly small pieces, reducing the chance for injury. In doing so, the small glass shards make it more likely that the glass will become separated from the opening.

Fully Tempered glass meets 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.

The Safety Glazing Certification Council (SGCC) is a non-profit corporation that provides third party certification of safety glazing materials through unannounced in-plant inspections and laboratory testing. These tests require that the tempered glass pass the standards of the 150 ft pound as well as the 400 lb test. This is the highest standard impact-safety rating available, indicating that the glass can safely withstand an impact similar to that of a full-grown, fast moving adult.

The SGCC does not require that the glass read 'tempered'. Their only requirement is that WA Wilson's glass carries the SGCC test information in our logo. Like many other tempering fabricators, WA Wilson has chosen to minimize the visual size of our tempered logo by stamping the glass only with the required SGCC test results.

Heat Treated glass may contain un-dissolved batch elements such as are firebrick particles from the glass furnace, nickel sulfide stones, or other inclusions. The presence of such matter does not render the glass defective, and normally does not impair the appearance or performance of the glass. Under some conditions, however, such materials may cause spontaneous breakage. This spontaneous breakage may also be caused by damage such as surface or edge scratches, chips or gouges, which can occur after WA Wilson has fabricated and sold the glass. Spontaneous breakage may occur years after installation. WA Wilson does not warrant Heat Treated glass against the presence of such materials, nor against any breakage due to any cause. By placing an order for Heat Treated glass, WA Wilson's customers agree that they will not seek to hold WA Wilson responsible for any costs, damages, or injuries, including incidental or consequential damages, personal injury, or repair/replacement, due in whole or in part, directly or indirectly, to glass breakage.