

Profitable Business Ideas & Opportunities in Tempering and Toughening of Flat Glass

Description:

Toughened or tempered glass is a type of safety glass processed by controlled thermal or chemical treatments to increase its strength compared with normal glass. Tempering creates balanced internal stresses when broken which cause the glass, to crumble into small granular chunks instead of splintering into jagged shards. The granular chunks are less likely to cause injury.

Glass is a naturally fragile material. To boost its functional properties and enhance its operational safety, it undergoes the process of tempering.

Tempering or toughening is a process where the glass is heated at high temperatures to make it stronger and more resistant to breakage. This process creates a balance in the product's internal stresses, so that when the glass is broken, it would crumble into tiny granular chunks instead of breaking into sharp, jagged pieces.

Because of its increased strength and safety, builders and architects utilize them in a multitude of demanding applications. This includes showers, vehicle windows, refrigerator trays, glass tables, diving masks, glassware, cookware, fireplace grates, bulletproof windows, architectural glass doors and virtually anywhere else that needs safe and strong glass.

Tempering is a term used in metallurgy, and defines the degree of hardness and strength imparted to a metal, as by quenching, heat treatment, or cold working. Glass is also 'hardened' the same way, i.e., heated to very high temperatures, then cooled quickly. (The melting point of glass is between 1400°C and 1600°C depending on its composition). This changes the structure of the glass. It has lower stress points and forms cube-like crystalline structures. Because of this, tempered glass shatters into cubes rather than into long, sharp shards so it is a lot safer to use.

After toughening, bit becomes highly resistant to heat and shock. Tempered glass is four to five times more resistant to breakage than annealed glass.

For more details download PDF file.

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