

TEMPERED GLASS

THE RISKS AND HOW TO AVOID THEM

Heat treating glass invariably introduces optical distortion and anisotropy.

Although distortion and anisotropy are not new, glass professionals are just beginning to address, measure and limit its effect on architectural glass by influencing glass thickness and the heat-treatment process.

As standards are created and measurement techniques continue to evolve, learn first-hand how these will impact your specifications into the future, and how these phenomena can be limited through an array of available standards.

Finally, this course will address the implications of Nickel Sulphide inclusions and the reason that Heat Soak Testing (HST) is an effective insurance strategy to mitigate the risk of spontaneous glass breakage and increases overall occupant safety.

HSW Justification:

A deep understanding about the way that glass is tempered and heat treated is first established. It is then related to the use of tempered glass which, by definition, is used to increase strength and increase safety in the event of breakage. Tempered glass is otherwise known as Safety Glass.

Learning Objective 1:

a. Optical Distortions: Roller wave, edge lift, bow a. What happens in a tempering furnace? b. Fundamentals of flat heat-treated glass c. Existing North American standards d. Architectural specification and standards e. The importance of Heat-Treated glass surrounding occupant safety.

Learning Objective 2:

Anisotropy in Architectural Glass a. The physics behind the phenomenon b. Vocabulary: Anisotropy, Birefringence, Optical Retardation c. New standard method for anisotropy measurement i. New Scanning Technology ii. How can this standard positively affect the glass and overall building? d. Design considerations and spec changes to help mitigate Anisotropy

Learning Objective 3:

Spontaneous breakage a. What is NiS b. How Heat Soak Testing mitigates risks caused by NiS inclusions c. Evolution of testing methodology. d. The vital importance of HST as insurance for occupant safety.

Learning Objective 4:

A summary of existing standards and their application in design.

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