

## Channel Shaped Glass: Thermally Toughened Soda Lime Silicate Channel Shaped Safety Glass

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#### Introduction

This part of the GGF Data Sheet 4.6 series gives extra information, over and above GGF Data Sheet 4.6.1 on thermally toughened soda lime silicate channel shaped safety glass.

#### 1. Scope

This GGF Data Sheet concentrated on the specifics of thermally toughened soda lime silicate channel shaped safety glass.

#### 2. Definitions and Descriptions

For the purpose of this GGF Data Sheet the definition contained within GGF Data Sheet 4.6.1 and the following apply: -

##### 2.1. Thermally toughened soda lime silicate channel shaped safety glass

A soda lime silicate channel shaped glass within which a permanent surface compressive stress has been induced by a controlled heating and cooling process in order to give it greatly increased resistance to mechanical and thermal stress and prescribed fragmentation characteristics

NOTE: The mechanical properties, i.e. thermal durability and profile bending strength, and safety properties, i.e. fragmentation characteristics,

4.6.3 April 2020

are generated by the level of surface compression. These properties do not depend on the size of the channel shaped glass

#### 2.2. Opaque thermally toughened soda lime silicate safety glass

This is a thermally toughened soda lime silicate safety glass that has had a ceramic frit fired into the surface during the toughening process.

#### 2.3. Heat soaked thermally toughened soda lime silicate channel shaped safety glass

This is thermally toughened soda lime silicate channel shaped safety glass that undergoes a heat soaking process to reduce the presence of critical inclusions.

##### 2.3.1. Heat soaking process

This is defined within the standard for flat heat soaked thermally toughened soda lime silicate safety glass.

NOTE: The applicable standard is EN 14179-1

#### 3. Safety performance

##### 3.1 General

This is reproduced from the introduction to EN 15683-1

*"Thermally toughened soda lime silicate channel shaped safety glass has a safer breakage behaviour when compared with annealed glass."*

##### 3.2 Fracture characteristics (reproduced from EN 15683-1; clause 5)

*"In the event of breakage, thermally toughened soda lime silicate channel shaped safety glass fractures into numerous small pieces, the edges of which are generally blunt."*

NOTE: "Fragmentation in service does not always correspond to that described in Clause 8, due to restraint from fixing or due to the cause of fracture."