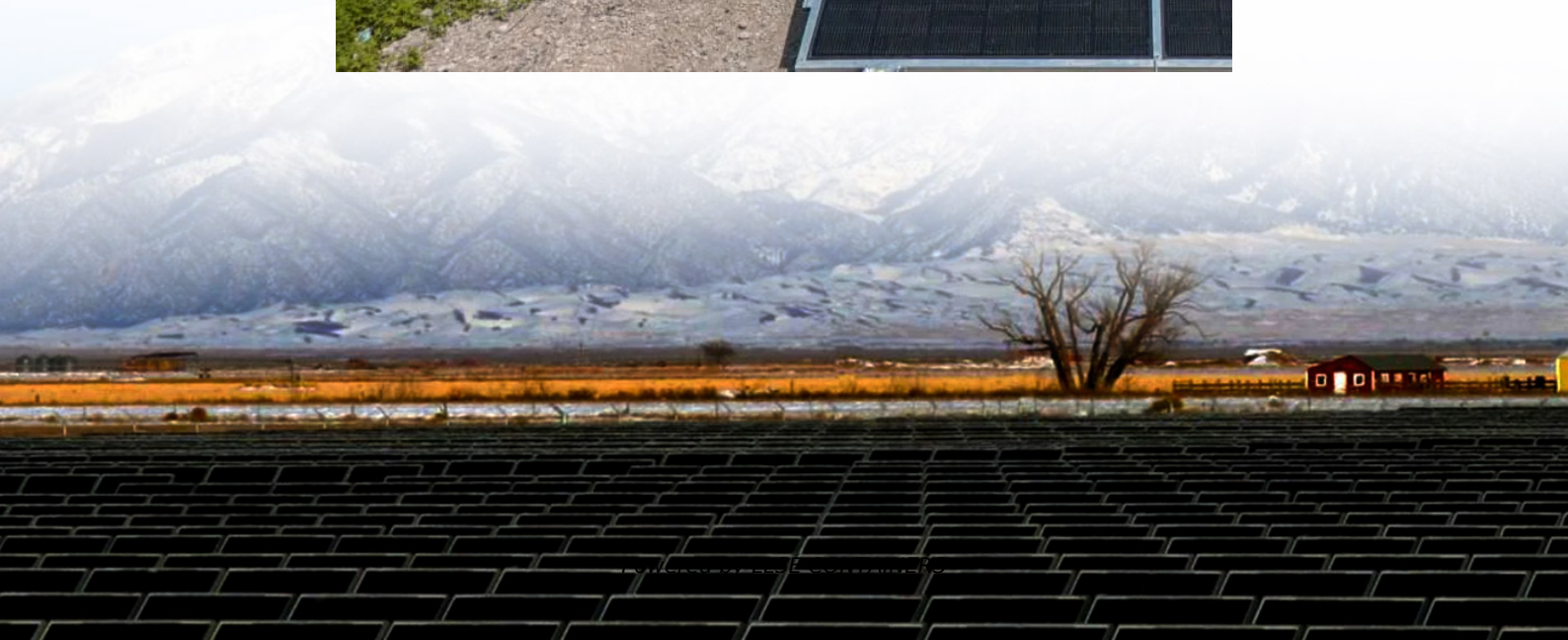


# **Compressive strength of solar glass**





## Overview

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What is compressive strength of glass?

The strength of a material is the value of the stress in which it deforms permanently. For brittle materials which generally only fracture, such as glass, it is tensile stress that is critical not compressive strength. The compression strength of glass is very high in comparison to other structural materials. Nominally around  $1000 \text{ N/mm}^2 = 1000 \text{ MPa}$ .

Does Chemical strengthening affect glass compressive properties at low strain rate?

Quasi-static tests were carried out to reveal the effect of chemical strengthening on the glass compressive properties at low strain rate. Five tests were conducted on each type of specimen to take dispersion into consideration. The compressive strength results, represented as average values and standard deviations, are given in Fig. 5.

How to calculate compressive strength of annealed glass?

In this subsection, an empirical formula is proposed to combine the effects of strain rate and chemical strengthening on the compressive strength:  $(8) \sigma_C = \sigma_{AS} + K S + A \epsilon \epsilon_0 n$  where  $\sigma_C$  is the compressive strength (in MPa).  $\sigma_{AS}$  ( $=721.6 \text{ MPa}$ ) is the quasi-static strength of annealed glass.

Do stress waves affect the compressive strength of aluminosilicate glass?

The dynamic compressive strength and crack propagation velocity are not influenced by the loading modes of stress waves. An empirical equation was proposed to describe the combined effects of strain rate and chemical strengthening on the compressive strength of aluminosilicate glass.



## Compressive strength of solar glass

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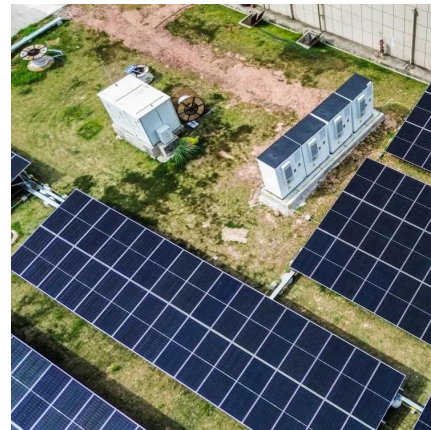


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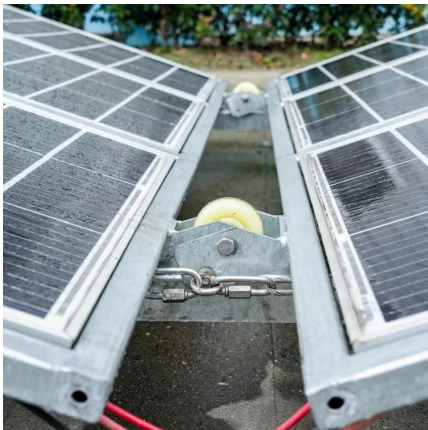
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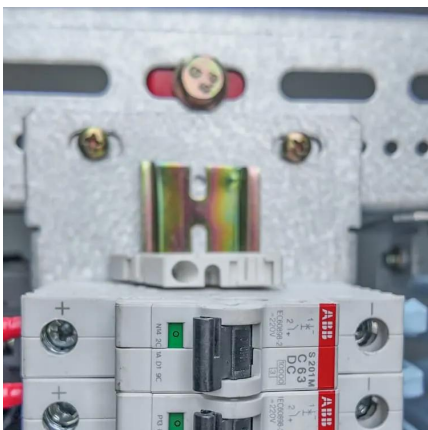
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