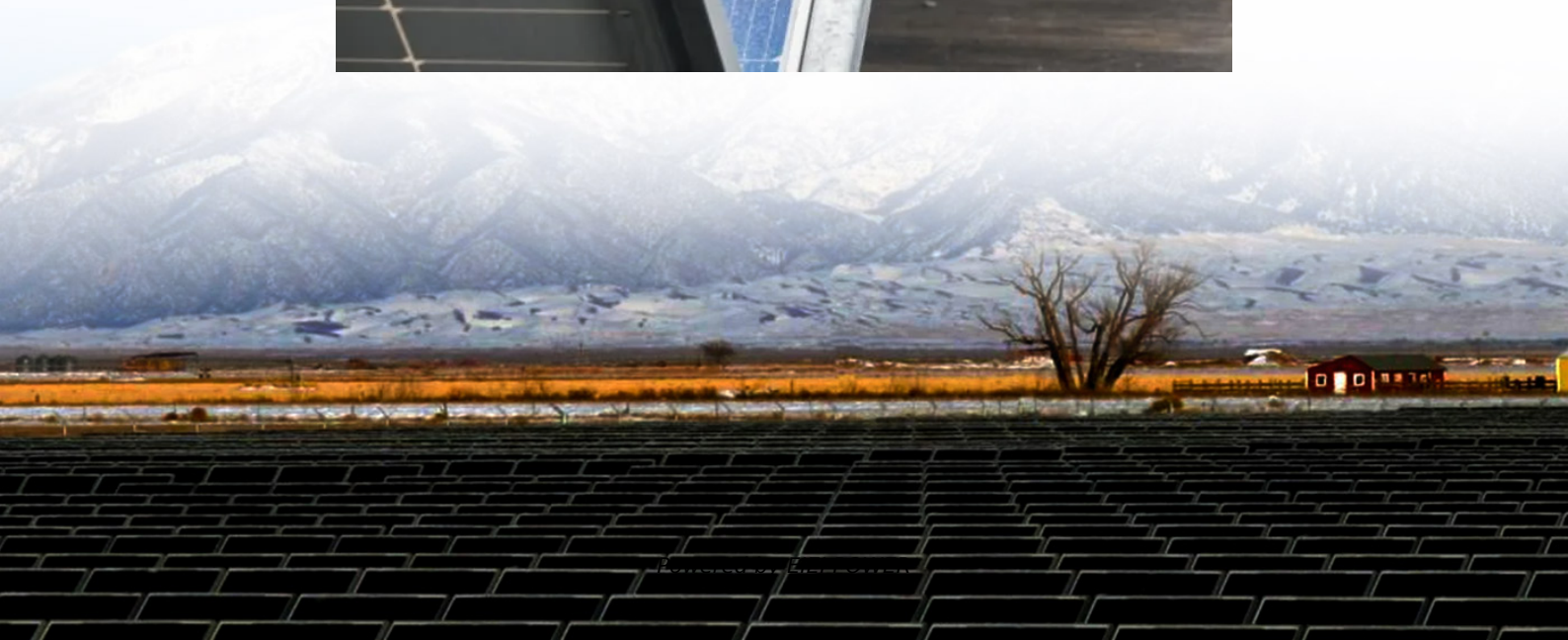


# **Double-glass components under pressure**





## Overview

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How does pressure affect glass?

For example, pressurizing glass affects properties and structure. High pressure increases glass density, elastic modulus, and fictive temperature. Molecular dynamics studies show that pressure rearranges the bonding between metal and oxygen atoms. You can read all about the effects of pressure in this month's " Glass: Then and Now " articles.

What are insulating glass units?

Introduction Insulating glass units (IGUs) are building components that show particular structural behavior. A typical IGU comprises two or more glass panes with a sealed gap filled with a low thermal conductivity gas (e.g., argon).

Do insulating glass units show specific structural behavior under climatic loads?

Author to whom correspondence should be addressed. Insulating glass units (IGUs) are building components that show a particular structural behavior. Although such structures have many advantages from the point of view of thermal protection of buildings, they show particular structural behavior under climatic loads.

Is glass a structural element?

Every window and every glass in a façade experiences thermal, chemical and mechanical loads regardless of whether they are perceived as structural elements or not. In this regard, architectural applications of glass are always structural applications at the same time.



## Double-glass components under pressure

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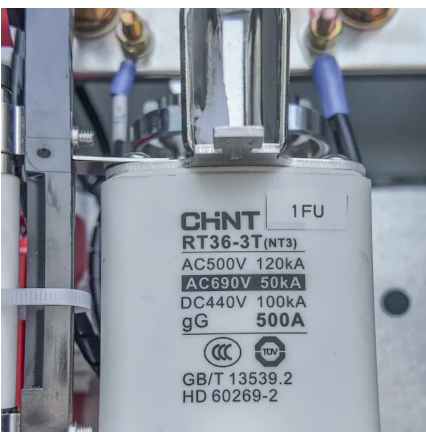


### [Load Sharing in Insulated Double Glass Units](#)

Nov 19, 2009 · The aim of the research was to get a better insight in the load sharing of insulated double glass units, by determining the pressure of the air in the cavity under mechanical and ...

### [The Influence of Elastic Support of Component Glass ...](#)

Sep 29, 2024 · However, it turns out that sealing the cavities in IGUs has a certain side effect. Under the influence of climatic factors, the gas entrapped in the gap changes its parameters, ...



### **Introduction to "Glass under pressure" for Glass: Then and Now**

Dec 21, 2022 · November: Glass-ceramics deliver unusual property combinations for sophisticated domestic and high-tech applications and for controlling and studying nano- or ...

### [\(PDF\) Study of Deflection in Insulating Glass Units Under ...](#)

Sep 18, 2019 · Periodic changes in external climatic factors, above all atmospheric pressure and temperature, result in deflection of the component glass panes, which generates secondary ...



[\(PDF\) Study of Deflection in Insulating Glass ...](#)

Sep 18, 2019 · Periodic changes in external climatic factors, above all atmospheric pressure and temperature, result in deflection of the ...



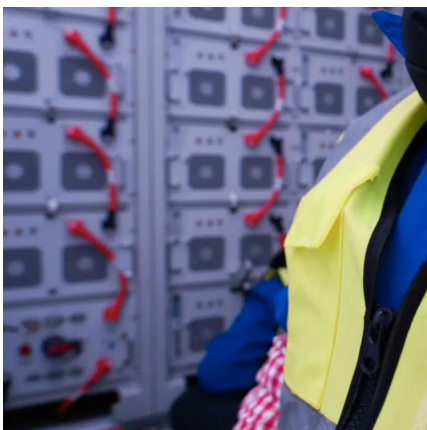
**The Influence of Elastic Support of Component Glass Panes ...**

The problem was reduced to solving an appropriate quadratic equation (double-glazed IGU) or a system of quadratic equations (multi-glazed IGU). In the simplest case (Figure 2) of a double ...



[Verifying a Glass Pane Under Combined In-Plane ...](#)

Apr 8, 2025 · Understanding the structural behavior of glass under combined static and dynamic loads is crucial for safety and stability.





### Double Glass Units simply supported on two sides: Analytical ...

Jul 1, 2025 · Insulating Glass Units (IGUs), made of multiple sealed glass panes with gas-filled cavities, are key to thermal and acoustic building insulation. As modern designs demand high ...



### [Verifying a Glass Pane Under Combined In ...](#)

Apr 8, 2025 · Understanding the structural behavior of glass under combined static and dynamic loads is crucial for safety and stability.

### Experimental and Numerical Simulations of Climatic Loads ...

Jan 16, 2023 · Insulating glass units (IGUs) are building components that show a particular structural behavior. Although such structures have many advantages from the point of view of ...



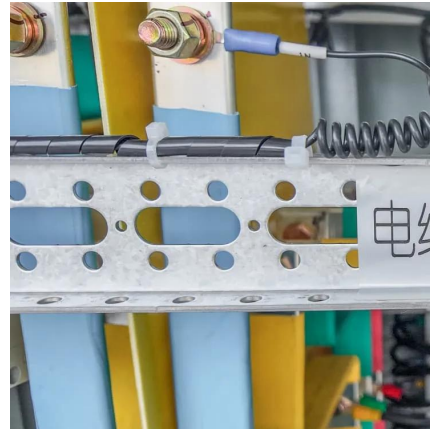
### [Buckling analysis and design proposal for 2-side ...](#)

Nov 30, 2025 · In this paper, double IGUs composed of two glass panels with a cavity gap interposed, restrained via linear top/bottom supports and under a combination of in-plane ...



## Experimental and Numerical Simulations of Climatic Loads in ...

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## Buckling analysis and design proposal for 2-side supported double

Aug 1, 2018 · In this paper, double IGUs composed of two glass panels with a cavity gap interposed, restrained via linear top/bottom supports and under a combination of in-plane ...



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