

BF-Information 021/2025

Revision Index 0 – December 2025



**Bundesverband
Flachglas**

Heat Protection – Cavity Integrated Systems

Extension of RTG study

Supplement to RTG study “Integrated evaluation of thermal performance in summer – Thermal comfort and energy performance” by the Bundesverband Flachglas “Cavity Integrated Systems” working group.



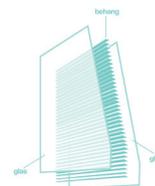
In 2023 the Ingenieurbüro Prof. Dr. Hauser (IBH) conducted a comprehensive study on behalf of Repräsentanz Transparente Gebäudehülle (RTG). The aim was to use simulations for hundreds of thousands of room scenarios to find out how buildings can remain energy-efficient, healthy and comfortable to use even under the conditions of an increasingly warming climate.

The original study examined various structural and technical measures for thermal insulation in summer, but did not include cavity integrated systems – i.e., solar shading systems integrated into insulating glass units.

To close this gap in knowledge, companies from the “Cavity Integrated Systems” working group of the German Flat Glass Association commissioned a supplementary study from IB Hauser. The aim of this study was to evaluate the effectiveness and potential of systems integrated into insulating glass units under identical boundary conditions as in the original study and to relate the results to the overall context of thermal insulation in summer.

Solar Shading

External or integrated solar shading systems for windows are able to react to solar radiation in a very flexible and effective way. The optimal solution would be automated solar shading devices which minimise user errors and ensure the best results.



[RTG-Summary_Hitzeschutz-web.pdf](#)

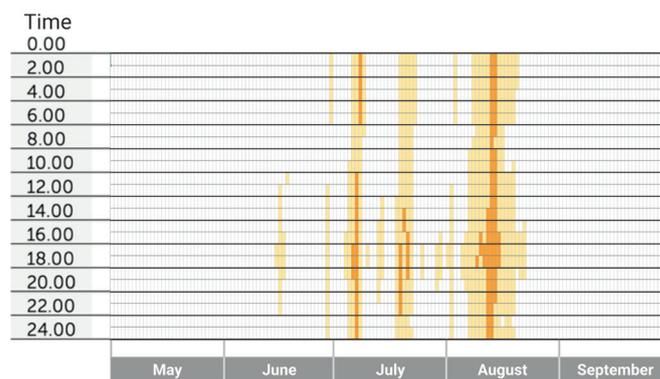
Key to the following thermal maps

These temperature maps show the hours of the day and night during which the room temperatures of 26 °C, 28 °C and 30 °C are exceeded for each day of the hotter months of a year.

Improved solar shading (in the cavity) *

With integrated solar shading systems in insulating glass units or within a window system (venetian blind, roller blind), the following temperature distribution can be achieved. This shows very clearly that the level of solar shading required today can be significantly improved. The effect is comparable to that of an improved external solar shading system. For better comparison, the following two graphs show the internal and external solar shading devices from the original RTG study.

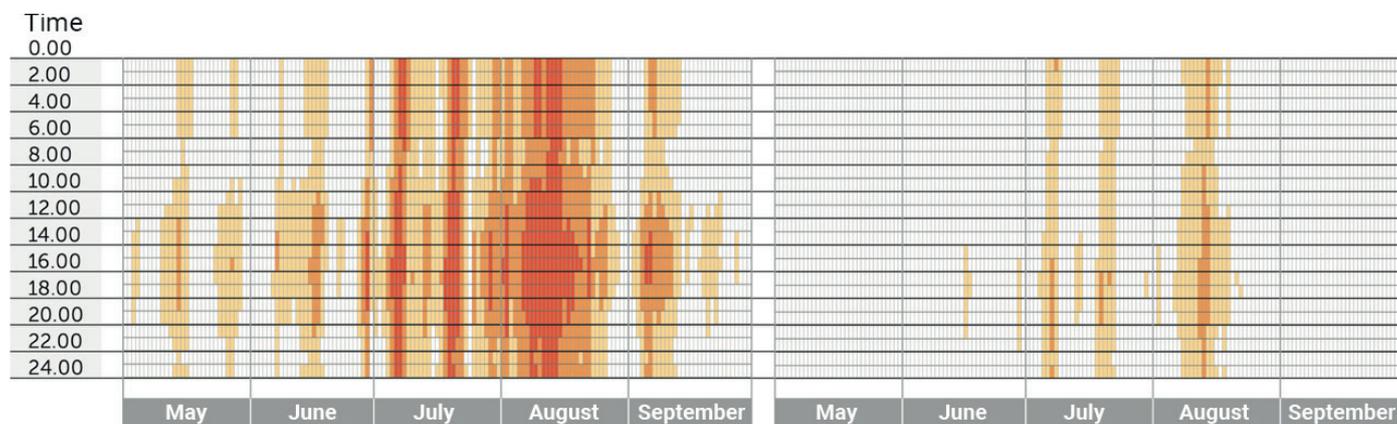
* The BF study used the same parameters as those in the RTG study.



Excerpt from the RTG study (page 6)

1. Internal solar shading

In the climate forecast for 2045 (DWD forecast for average climate data for the period 2030-2060), the same room with the same solar shading device shows severe and regular overheating in the summer months.



2. Improved solar shading (external)

External solar shading (window awning, roller shutter, external venetian blind) achieves the following temperature distribution. This shows very clearly that the level of solar shading required today can be significantly improved.

Conclusion: All graphs show very clearly that: Without additional measures, our rooms will overheat; they will scarcely remain comfortable to use and, in some cases, may already pose a health risk. With solar shading, automation, and night ventilation, comfortable indoor temperatures can be maintained in the future even without mechanical cooling.

Participating companies:



Faltenbacher Jalousienbau
Geschäftsbereich ISOLETTE



isophon glas GmbH



ScreenLine
GmbH & Co. KG



Rosenheimer
Glastechnik GmbH

This supplementary study is based on the following study:

Ingenieurbüro Prof. Dr. Hauser (IBH), 2023
Studie zur integralen Bewertung des sommerlichen Wärmeverhaltens
(Study on integrated evaluation of thermal performance in summer).
Thermischer Komfort und energetische Performance (Thermal comfort and energy performance).
Download at www.transparente-gebaeudehuelle.de

Bundesverband Flachglas e.V.
Mülheimer Strasse 1
53840 Troisdorf
bundesverband-flachglas.de



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