

Conventional control strategies for shading devices in residential and office premises

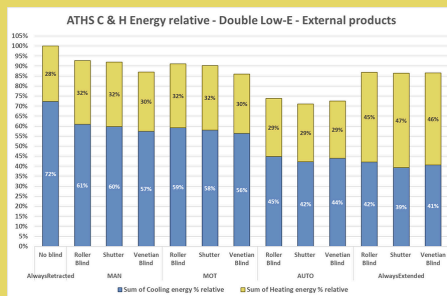
Solar shading can significantly improve the energy performance and comfort of buildings. However, their contribution largely depends on how they are used. Most of building simulation software takes little or no account of the use of shutters and blinds, and so underestimates their performance.

The goal of this study was to develop control strategies that simulate manual, motorised and automated use of solar shading devices, and has evaluated their performance on typical buildings in Europe.

Study parameters

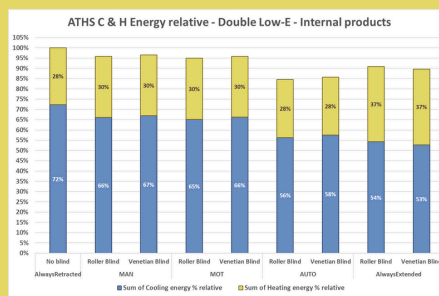
- Control strategies: 27
- Positions: internal and external
- Shading type: roller shutters, roller blinds and venetian blinds
- Building type: residential and offices
- Type of control: manual, motorised and automated

Example: Athens



For external products, the total energy savings are between:

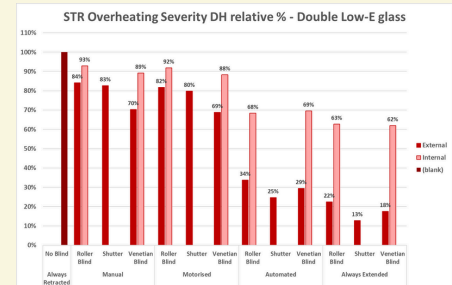
- manual: 7% and 13%
- motorised: 9% to 14%
- automated: 26% to 27%



For internal products, the total energy savings are between:

- manual: 3% to 4%
- motorised: 3% to 5%
- automated: 14% to 16%

Strasbourg



In Strasbourg, the use of external shading leads to a significant improvement in thermal comfort.

- manual: 21%
- motorised: 23%
- automated: 71%

Contribution for the industry

This study contributed to define key elements for taking better account of solar shading in the performance of buildings, whether for renovation or new build. The results are currently being incorporated into an ISO standard that serves as a reference for developers of energy calculation software. This work is therefore a key element in promoting the use of solar shading in building design.

Status of project

Completed, final report to be published end of 2024.

Budget

€ 40,000 funded by ES-SO.