

Evidence of the winter heat protection Determination U -values windows-profiles-roller shutter boxes

Windows and profiles

Measurement according to EN ISO 12567-1 (hot box method)



For windows and individual profiles

- Measurement according to EN ISO 12567-1 and/or -2 (window)
- Measurement according to EN 12412-2 (profiles)
- Calculation according to EN ISO 10077-2 (profiles)
- Calculation and/or values according to EN ISO 10077-1 (Windows and profiles)

For profile systems

- ift-Guideline WA-01/2 (metal profiles - window)
- ift-Guideline WA-02/3 (PVC profile sections)
- ift-Guideline WA-03/3 (metal profiles - facades)
- ift-Guideline WA-04/1 (wooden profiles)

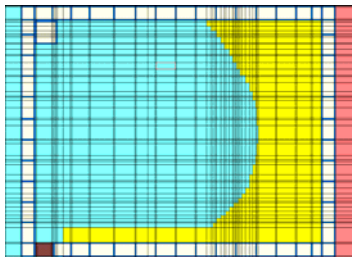
Measurement according to EN 12412-2 (hot box method)



Roller shutter boxes

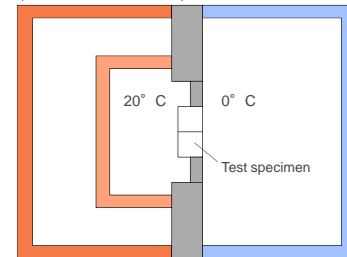
The evidence of the U_{sb} -value of roller shutter boxes can be made by measurement or calculation.

Calculation according to EN ISO 10077-2



According to the Building Regulation List U_{sb} -value: maximum 0.85 W/m²K

Measurement according to EN 12412-4 (hot box method)

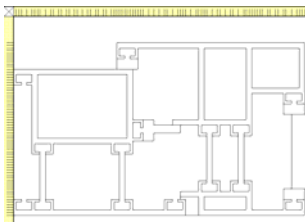


According to the Building Regulation List U_{sb} -value: maximum 0.85 W/m²K

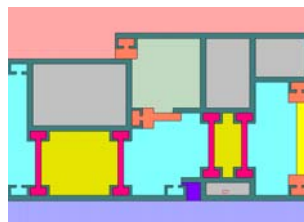
Simulation of the thermal performance

Application: thermal analysis and optimisation of the thermal performance of building components

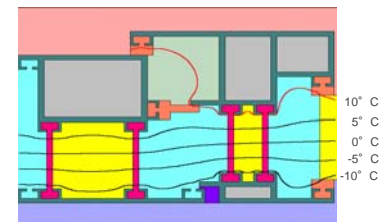
Example: Calculation of the U_f -values of frame profile



Division of the cross section in finite elements

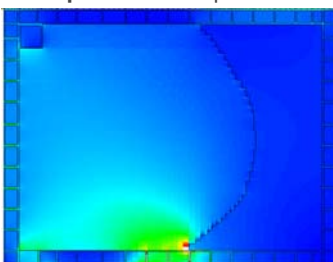


Allocation of materials and material identification data (e.g. thermal conductivity)

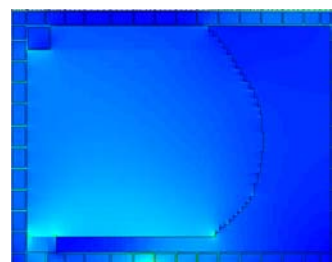


Results of the calculation: U_f -value, representation of temperature distribution, isotherms, heat flow density

Example: Heat flow presentation of a roller shutter box



Thermally weakness:
higher transmission heat transfers
lower internal surface temperature



Thermally improved construction