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Determination of the Solar Heat Gain Coefficient (SHGC) of Building Components

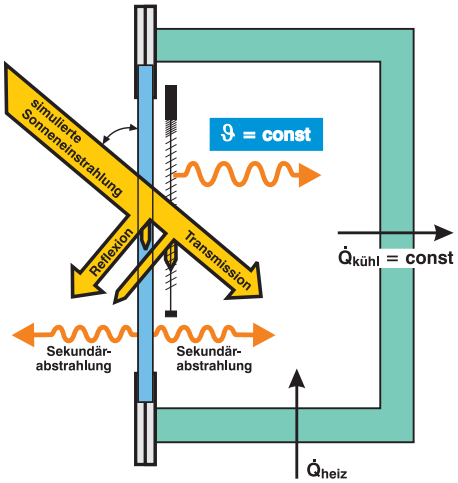
- Calorimeter method in addition to EN 410
- Testing of glazing with shading system
- Testing of special components

Scope of Application

The calorimetric SHGC test facility of the Fraunhofer Institute for Building Physics allows the realistic energetic assessment of glazing systems and system combinations, e. g. glazing with internal shading system, at large-size building components. The method is particularly suited for structures, which could not yet be investigated directly according to EN 410, e. g. high-scattering glazing or domed building components (domed roof lights, membrane constructions), vehicle constructions, screen printing or three-dimensional fabrics.

Description of Test Facility

Radiated power is supplied from outside by means of artifically generated global radiation through the transparent specimen, which is coupled to the test room (calorimeter). The radiated power, which is supplied to the measuring box, is determined by constantly dissipated cooling as well as heating. The total energy transmission coefficient results from the proportion of supplied and transmitted power.



Calculation:

$g = P_{cool} - P_{heat}/G \times A$

g	total solar energy transmission coefficient [-]
G	irradiance [W/m²]
A	aperture area [m²]
P	cooling or heating power [W]

Dimensions of Specimen

Standard size and area of aperture maximum of 1 m², minimum of 0.5 m², max. height 2.9 m at a width of 0.7 m, max. height 2.0 m at a width of 1.6 m, max. width 2.0 m at a height of 1.2 m

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