

Solar protection devices combined with glazing - Calculation of total solar energy transmittance and light transmittance - Part 2: Detailed calculation method

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light transmittance - Part 2: Detailed calculation
method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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| <p>Käesolev Eesti standard EVS-EN 13363-2:2005 sisaldab Euroopa standardi EN 13363-2:2005 + AC:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 30.05.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p> | <p>This Estonian standard EVS-EN 13363-2:2005 consists of the English text of the European standard EN 13363-2:2005 + AC:2006.</p> <p>This document is endorsed on 30.05.2005 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p> |
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| <p>Käsitlusala:</p> <p>This document specifies a detailed method, based on the spectral transmission data of the materials, comprising the solar protection devices and the glazing, to determine the total solar energy transmittance and other relevant solar-optical data of the combination. If spectral data are not available the methodology can be adapted to use integrated data.</p> | <p>Scope:</p> <p>This document specifies a detailed method, based on the spectral transmission data of the materials, comprising the solar protection devices and the glazing, to determine the total solar energy transmittance and other relevant solar-optical data of the combination. If spectral data are not available the methodology can be adapted to use integrated data.</p> |
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ICS 17.180.20, 91.120.10

Võtmesõnad:

English version

**Solar protection devices combined with glazing - Calculation of
total solar energy transmittance and light transmittance - Part 2:
Detailed calculation method**

Dispositifs de protection solaire combinés à des vitrages -
Calcul du facteur de transmission solaire et lumineuse -
Partie 2: Méthode de calcul détaillée

Sonnenschutzeinrichtungen in Kombination mit
Verglasungen - Berechnung der Solarstrahlung und des
Lichttransmissionsgrades - Teil 2: Detailliertes
Berechnungsverfahren

This European Standard was approved by CEN on 24 February 2005.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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Foreword

This document (EN 13363-2:2005) has been prepared by Technical Committee CEN/TC 89 "Thermal performance of buildings and building components", the secretariat of which is held by SIS.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2005, and conflicting national standards shall be withdrawn at the latest by October 2005.

EN 13363 with the general title *Solar protection devices combined with glazing - Calculation of solar and light transmittance* consists of two parts:

- *Part 1: Simplified method;*
- *Part 2: Detailed calculation method.*

This document includes a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies a detailed method, based on the spectral transmission data of the materials, comprising the solar protection devices and the glazing, to determine the total solar energy transmittance and other relevant solar-optical data of the combination. If spectral data are not available the methodology can be adapted to use integrated data.

The method is valid for all types of solar protection devices parallel to the glazing such as louvres, or venetian, or roller blinds. The blind may be located internally, externally, or enclosed between the panes of the glazing. Ventilation of the blind is allowed for in each of these positions in determining the solar energy absorbed by the glazing or blind components, for vertical orientation of the glazing.

The blind component materials may be transparent, translucent or opaque, combined with glazing components with known solar transmittance and reflectance and with known emissivity for thermal radiation.

The method is based on a normal incidence of radiation and does not take into account an angular dependence of transmittance or reflectance of the materials. Diffuse irradiation or radiation diffused by solar protection devices is treated as if it were direct. Louvres or venetian blinds are treated as homogenous materials by equivalent solar optical characteristics, which may depend on the angle of the incidence radiation. For situations outside the scope of this document; ISO 15099 covers a wider range of situations.

The document also gives certain normalised situations, additional assumptions and necessary boundary conditions.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 410, *Glass in building – Determination of luminous and solar characteristics of glazing*

EN 673, *Glass in building – Determination of thermal transmittance (U value) – Calculation method*

EN ISO 7345:1995, *Thermal insulation – Physical quantities and definitions (ISO 7345:1987)*

EN ISO 9288:1996, *Thermal insulation – Heat transfer by radiation – Physical quantities and definitions (ISO 9288:1989)*

3 Terms, definitions, symbols and units

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 7345:1995, EN ISO 9288:1996 and the following apply.

3.1.1

solar radiation and light

radiation in the whole solar spectrum or any part of it, comprising ultra-violet, visible and near infra-red radiation in the wavelength range of 0,3 μm to 2,5 μm

NOTE Sometimes called shortwave radiation, see EN ISO 9488.