

## **Glass in building - Determination of the emissivity**

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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12898:2001 sisaldab Euroopa standardi EN 12898:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12898:2001 consists of the English text of the European standard EN 12898:2001.</p> <p>This document is endorsed on 18.06.2001 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><b>Käsitlusala:</b></p> <p>This European Standard specifies a procedure for determining the emissivity at room temperature of the surfaces of glass and coated glass. The emissivity is necessary for taking into account heat transfer by radiation from surfaces at the standing temperature of 283 K in the determination of the U value and of the total solar transmittance of glazing according to [1] to [5].</p>	<p><b>Scope:</b></p> <p>This European Standard specifies a procedure for determining the emissivity at room temperature of the surfaces of glass and coated glass. The emissivity is necessary for taking into account heat transfer by radiation from surfaces at the standing temperature of 283 K in the determination of the U value and of the total solar transmittance of glazing according to [1] to [5].</p>
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**Võtmesõnad:** construction, definitions, emissions, glass, glass for building purposes, heat exchange, thermal emission

ICS 81.040.20

**English version**

**Glass in building**

**Determination of the emissivity**

Verre dans la construction –  
Détermination de l'émissivité

Glas im Bauwesen – Bestimmung  
des Emissionsgrades

This European Standard was approved by CEN on 2001-01-01.

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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

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**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 129 "Glass in building", the secretariat of which is held by IBN.

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 July 2001, and conflicting national standards shall be withdrawn at the latest by July 2001.

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

## 1 Scope

This European Standard specifies a procedure for determining the emissivity at room temperature of the surfaces of glass and coated glass.

The emissivity is necessary for taking into account heat transfer by radiation from surfaces at the standard temperature of 283 K in the determination of the U value and of the total solar transmittance of glazing according to [1] to [5].

The procedure, being based on spectrophotometric regular reflectance measurements at near normal incidence on non-infrared transparent materials, is not applicable to glazing components with at least one of the following characteristics:

- a) with rough or structured surfaces where the incident radiation is diffusely reflected;
- b) with curved surfaces where the incident radiation is regularly reflected at angles unsuitable to reach the detector while using regular reflectance accessories;
- c) infrared transparent.

However, it may be applied with caution to any glazing component provided its surfaces are flat and non-diffusing (see 3.6) and it is non-infrared transparent (see 3.7).

## 2 Symbols

$\varepsilon$	total corrected emissivity at 283 K
$\varepsilon_n$	total normal emissivity at 283 K
$E$	reading of the spectrophotometer with the sample placed on the sample support of the reflectance accessory
$E_0$	the instrument reading without placing anything on the sample support
$E_{st}$	the instrument reading with the reference mirror replacing the sample
$R_n$	total normal reflectance at 283 K
$R_n(\lambda)$	spectral normal reflectance
$R_{n,st}$	spectral normal reflectance of the reference mirror
$T_n(\lambda)$	spectral normal transmittance
$T_n$	total normal transmittance at 283 K

## 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply:

### 3.1

#### infrared

5  $\mu\text{m}$  to 50  $\mu\text{m}$  spectral range.

### 3.2

#### emissivity

ratio of the energy emitted by a given surface at a given temperature to that of a perfect emitter (black body with normal and corrected emissivity = 1,0) at the same temperature.