

ICS: 81.040.20

Geregistreeerde Belgische norm

NBN EN 12898

1e uitg., april 2001

Normklasse : S 23

Glas voor gebouwen - Bepaling van het emitterend vermogen

Verre dans la construction - Détermination de l'émissivité

Glass in building - Determination of the emissivity

Toelating tot publicatie : 01 maart 2001

Deze Europese norm EN 12898: 2001 heeft de status van een Belgische norm.

Deze Europese norm bestaat in drie officiële versies (Duits, Engels, Frans).



Belgisch instituut voor normalisatie (BIN), vereniging zonder winstoogmerk
Brabançonnellaan 29 - 1000 BRUSSEL - telefoon: 02 738 01 12 - fax: 02 733 42 64
e-mail: info@bin.be - BIN Online: www.bin.be - prk. 000-0063310-66

ICS: 81.040.20

*norme belge
enregistrée*

NBN EN 12898

1e éd., avril 2001

Indice de classement : S 23

Verre dans la construction - Détermination de l'émissivité

Glas voor gebouwen - Bepaling van het emitterend vermogen

Glass in building - Determination of the emissivity

Autorisation de publication : 01 mars 2001

La présente norme européenne EN 12898: 2001 a le statut d'une norme belge.

La présente norme européenne existe en trois versions officielles (allemand, anglais, français).



Institut belge de normalisation (IBN), association sans but lucratif

avenue de la Brabançonne 29 - 1000 BRUXELLES - téléphone: 02 738 01 12 - fax: 02 733 42 64

e-mail: info@ibn.be - IBN Online: www.ibn.be - CCP. 000-0063310-66

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 1 January 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. 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.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

| | Page |
|--|------|
| Foreword..... | 3 |
| 1 Scope..... | 4 |
| 2 Symbols..... | 4 |
| 3 Terms and definitions..... | 4 |
| 4 Brief outline of the procedure to determine corrected emissivity..... | 6 |
| 5 Spectral normal reflectance and transmittance measurements..... | 6 |
| 6 Calculation of total normal reflectance, corrected emissivity and total normal transmittance..... | 8 |
| 7 Diffuse reflectance measurements..... | 9 |
| 8 Test report..... | 9 |
| Annex A (normative) Tables for determining total normal reflectance and total corrected emissivity .. | 11 |
| Annex B..... (informative) Procedures to improve the accuracy of spectral normal reflectance measurements..... | 12 |
| Bibliography..... | 13 |

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

| | |
|-----------------|--|
| ε | total corrected emissivity at 283 K |
| ε_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 μm to 50 μm 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.