SLOVENSKI STANDARD
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Zahteve za odbojne površine v svetilih

Perfomance of reflecting surfaces for luminaires

Bewertung von Reflektoroberflächen für den Einsatz in Leuchten

Performance des surfaces réfléchissantes pour luminaires

Ta slovenski standard je istoveten z: **prEN 16268**

ICS:

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ICS

English Version

Perfomance of reflecting surfaces for luminaires

Performance des surfaces réfléchissantes pour luminaires

Bewertung von Reflektoroberflächen für den Einsatz in Leuchten

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 169.

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COMITÉ EUROPÉEN DE NORMALISATION
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Contents

Page

Foreword

This document (prEN 16268:2011) has been prepared by Technical Committee CEN/TC 169 “Light and lighting”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

1 Scope

The standard covers the optical performance of untreated or coated materials supplied in plane sheet or strip form for use as a plane or formed reflector as well as preformed reflectors both as originally produced and after prescribed tests to determine probable maintained performance in service. This includes:

- Untreated base material, including
  - Aluminium,
  - Steel,
  - Plastic,
  - Glass.
- surface treated materials, including:
  - Polished materials,
  - Anodized materials,
  - Vacuum metallized materials,
  - Painted materials,
  - Multilayer systems.

Fluorescent materials are not within the scope of this standard.

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 60695-2-12:2001, *Fire hazard testing — Part 2-12: Glowing/hot-wire based test methods — Glow-wire flammability test method for materials (IEC 60695-2-12:2000).*

EN ISO 4892-1, *Plastics — Methods of exposure to laboratory light sources — Part 1: General guidance*

EN ISO 4892-3, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps*

EN ISO 6270-2:2005, *Paints and varnishes — Determination of resistance to humidity — Part 2: Procedure for exposing test specimens in condensation-water atmospheres*

ISO 7668:2010, *Anodizing of aluminium and its alloys — Measurement of specular reflectance and specular gloss of anodic oxidation coatings at angles of 20°, 45°, 60° or 85°*

ISO 9211-4:2006, *Optics and optical instruments — Optical coatings — Part 4: Specific test methods*

ISO 15184:1998, *Paints and varnishes — Determination of film hardness by pencil test*

ISO/DIS 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test*

Technical Report CIE 15.3:2004, *Colorimetry*

Technical Report CIE 130:1998, *Practical methods for the measurement of reflectance and transmittance.*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in Technical Report CIE 130:1998 and the following apply.

3.1
light reflecting surface of a luminaire
all reflecting surfaces of a luminaire with the main task of reflecting light and therefore with a total reflectance of at least 50 %

3.2
reflection
process by which radiation is returned by a surface or a medium, without change of frequency of its monochromatic components.

3.3
total reflectance
reflectance
(de: Gesamtreflexionsgrad)
ρ_{tot}
ratio of the whole reflected luminous flux to the incident flux,

$$\rho_{tot} = \phi_{tot} / \phi_i = \frac{\int_0^\infty S(\lambda) \cdot \rho(\lambda) \cdot V(\lambda) d\lambda}{\int_0^\infty S(\lambda) \cdot V(\lambda) d\lambda} \quad (1)$$

where

$\rho(\lambda)$ is the total spectral reflectance of the sample;

$S(\lambda)$ is the relative spectral power distribution of the incident radiation of standard illuminant A;

ϕ_{tot} is the total luminous flux reflected by the sample;

ϕ_i is the total incident luminous flux on the sample.

3.4
diffuse reflectance
ρ_d
ratio of the diffuse reflected part of the reflected luminous flux to the incident flux

$$\rho_d = \phi_d / \phi_i = \frac{\int_0^\infty S(\lambda) \cdot \rho_d(\lambda) \cdot V(\lambda) d\lambda}{\int_0^\infty S(\lambda) \cdot V(\lambda) d\lambda} \quad (2)$$

where

ρ_d is the diffuse spectral reflectance characteristic of the sample;

ϕ_d is the diffuse reflected luminous flux;

ϕ_i is the incident luminous flux;

$S(\lambda)$ is the relative spectral power distribution of the incident radiation of standard illuminant A;

$V(\lambda)$ is the relative spectral weighting function of standard Observer at 2°.

3.5
specular reflectance
regular reflectance
(de: gerichteter Reflexionsgrad)
ρ_r
reflection in accordance with the laws of geometrical optics, without diffusion, expressed as the ratio of the regular reflected part of the reflected luminous flux to the incident luminous flux

$$\rho_r = \phi_r / \phi_i = \frac{\int_0^\infty S(\lambda) \cdot \rho_r(\lambda) \cdot V(\lambda) d\lambda}{\int_0^\infty S(\lambda) \cdot V(\lambda) d\lambda} \quad (3)$$

where

ϕ_r is the specular reflected luminous flux;

ϕ_i is the incident luminous flux;

$\rho_r(\lambda)$ is the relevant spectral characteristic of the sample;

$S(\lambda)$ is the relative spectral power distribution of the incident radiation;

$V(\lambda)$ is the relative spectral weighting function of standard Observer at 2°.