SLOVENSKI STANDARD
kSIST FprEN 1096-5:2015

01-september-2015

Steklo v gradbeništvu - Steklo z nanosi - 5. del: Metode preskušanja in klasifikacija za samočistilne lastnosti površine stekla z nanosom

Glass in building - Coated glass - Part 5 - Test method and classification for the self-cleaning performances of coated glass surfaces

Glas im Bauwesen - Beschichtetes Glas - Teil 5: Prüfverfahren und Klasseneinteilung für das Selbstreinigungsverhalten von beschichteten Glasoberflächen

Verre dans la construction - Verre à couche - Partie 5: Méthode d'essai et classification des performances autonettoyantes des surfaces de verre à couche

Ta slovenski standard je istoveten z: **FprEN 1096-5**

ICS:

81.040.20	Steklo v gradbeništvu	Glass in building

kSIST FprEN 1096-5:2015 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

FINAL DRAFT
FprEN 1096-5

May 2015

ICS 81.040.20

English Version

Glass in building - Coated glass - Part 5 - Test method and classification for the self-cleaning performances of coated glass surfaces

Verre dans la construction - Verre à couche - Partie 5: Méthode d'essai et classification des performances autonettoyantes des surfaces de verre à couche

Glas im Bauwesen - Beschichtetes Glas - Teil 5: Prüfverfahren und Klasseneinteilung für das Selbstreinigungsverhalten von beschichteten Glasoberflächen

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 129.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword

This document (FprEN 1096-5:2015) has been prepared by Technical Committee CEN/TC 129 “Glass in building”, the secretariat of which is held by NBN.

This document is currently submitted to the Unique Acceptance Procedure.

This part of the standard is published to allow the test methodology to be used.

As stated in the scope, at the present time, the test procedure does not specifically address the durability of the coating's self-cleaning functionality. Work is on-going to develop applicable testing.

EN 1096, *Glass in building — Coated glass*, is composed of the following parts:

— *Part 1: Definitions and classification*

— *Part 2: Requirements and test methods for A, B and S coatings*

— *Part 3: Requirements and test methods for C and D coatings*

— *Part 4: Evaluation of conformity/Product standard*

— *Part 5: Test method and classification for the self-cleaning performances of coated glass surfaces*

1 Scope

This European Standard defines a test method to establish the self-cleaning performances for coatings on glass which utilize sun, rain or a combination of sun and rain to enhance the cleanliness of the glass.

The European Standard applies to class A coated glass as defined in EN 1096-1 and EN 1096-2 for use in outdoor building applications. The test is designed to be applicable for coatings on glass which use hydrophilic or photocatalytic active functionalities to enhance the cleanliness of the glass.

The test procedure does not specifically address the durability of the coating's self-cleaning functionality.

2 Normative references

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

EN 1096-1, *Glass in building — Coated glass — Part 1: Definitions and classification*

EN ISO 4892-3:2013, *Plastics — Methods of exposure to laboratory light sources — Part 3: Fluorescent UV lamps (ISO 4892-3:2013)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1096-1 and the following.

3.1
glass substrate
basic glass, special basic glass, chemically strengthened basic glass, thermally treated basic and special basic glass, laminated glass or laminated safety glass

3.2
coating
one or more thin solid layers of inorganic materials applied onto the surface of a glass substrate by various methods of deposition

Note 1 to entry: Methods of deposition are described in EN 1096–1.

3.3
dual coating
glass substrates to which coatings have been applied on both sides

Note 1 to entry: The second coating should not necessarily be a self-cleaning coating.

3.4
coated glass
glass substrate to which has been applied a coating, in order to modify one or more of its properties

3.5
self-cleaning coating
coating on glass substrates allowing obtaining or maintaining in time a cleaner surface as compared to untreated glass

3.6
hydrophilic coating
coating allowing maintaining a water contact angle of less than 20°

3.7
photocatalytic coating
coating containing a substance that performs one or more functions based on oxidation and reduction reactions under photo irradiation, inducing decomposition and removal of contaminants

3.8
secondary coating
coating deposited on the opposite side of a self-cleaning coating, in case of dual coatings

3.9
haze
wide angle scattering of light expressed as the percentage of the total transmitted light which, in passing through the glass, deviates from the incident beam by more than 2,5°

4 Symbols and abbreviations

For the purpose of this document, the following symbols and abbreviations apply.

RH	Relative humidity
S_{global}	Global standard deviation
T_t	Total light transmittance
T_d	Diffuse light transmittance
H	Haze
$\overline{\Delta H_{Global}}$	Global mean haze
$H_{initial}$	Haze after initial preparation of the sample (cleaning / activation)
$H_{cycle1dirt}$	Haze after cycle 1 dirt application
$H_{cycle1sun}$	Haze after cycle 1 UV exposure
$H_{cycle1rain}$	Haze after cycle 1 water spray
$H_{cycle2dirt}$	Haze after cycle 2 dirt application
$H_{cycle2sun}$	Haze after cycle 2 UV exposure
$H_{cycle2rain} = H_{final}$	Haze after cycle 2 water spray
$\Delta H = H_{final} - H_{initial}$	Haze variation between initial cleaning stage and end of cycle 2

5 Principle of the test

Standardized glass samples shall be submitted to a spray of a standardized dirt mixture, followed by a simulation of natural weathering action by applying UV irradiation (to simulate sun) and water spray (to simulate rain). This cycle shall be repeated twice to ensure better stability of results.

The haze shall be measured at initial preparation (after cleaning) and final stage (at the end of the second cycle).

The evaluation criteria shall be the haze variation (ΔH) between the sample after initial preparation ($H_{initial}$) and the sample at the final stage of the test (H_{final}), see Formula 1.