SLOVENSKI STANDARD
SIST EN 1288-3:2001

01-september-2001

Steklo v stavbah - Ugotavljanje upogibne trdnosti stekla - 3. del: Preskuġanje dvakrat podprtega vzorca (ġtiritoļ kovna obremenitev)

Glass in building - Determination of the bending strength of glass - Part 3: Test with specimen supported at two points (four point bending)

Glas im Bauwesen - Bestimmung der Biegefestigkeit von Glas - Teil 3: Prüfung von Proben bei zweiseitiger Auflagerung (Vierschneiden-Verfahren)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Verre dans la construction - Détermination de la résistance du verre a la flexion - Partie 3: Essais avec éprouvettes supportées en deux points (flexion quatre points)

SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-8853-5b74a70d2c44/sist-en-1288-3-2001

Ta slovenski standard je istoveten z: **EN 1288-3:2000**

ICS:

81.040.20	Steklo v gradbeništvu	Glass in building

SIST EN 1288-3:2001 **en**

2003-01.Slovenski inštitut za standardizacijo. Razmnoževanje celote ali delov tega standarda ni dovoljeno.

SIST EN 1288-3:2001

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-8853-5b74a70d2c44/sist-en-1288-3-2001

SIST EN 1288-3:2001

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 1288-3

June 2000

ICS 81.040.20

English version

Glass in building - Determination of the bending strength of glass - Part 3: Test with specimen supported at two points (four point bending)

Verre dans la construction - Détermination de la résistance du verre à la flexion - Partie 3: Essais avec éprouvettes supportées en deux points (flexion quatre points)

Glas im Bauwesen - Bestimmung der Biegefestigkeit von Glas - Teil 3: Prüfung von Proben bei zweiseitiger Auflagerung (Vierschneiden-Verfahren)

This European Standard was approved by CEN on 5 September 1999.

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 Central Secretariat or to any CEN member.

iTeh STANDARD PREVIEW

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.

(standards.iteh.ai)

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.

SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-8853-5b74a70d2c44/sist-en-1288-3-2001

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

© 2000 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

SIST EN 1288-3:2001

Contents

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70029064-0047-4751-8853-5b74a70d2c44/sist-en-1288-3-2001

SIST EN 1288-3:2001

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 December 2000, and conflicting national standards shall be withdrawn at the latest by December 2000.

CEN/TC 129/WG8 "Mechanical Strength" prepared the draft "Glass in building - Determination of the bending strength of glass" - Part 3 : Test with specimen supported at two points (four point bending)".

There are four other parts to this standard:

- Part 1 :Fundamentals of testing glass
- Part 2 :Coaxial double ring test on flat specimens with large test surface areas
- Part 4 :Testing of channel shaped glass
- Part 5 :Coaxial double ring test on flat specimens with small test surface areas

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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.

SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-8853-5b74a70d2c44/sist-en-1288-3-2001

SIST EN 1288-3:2001

1 Scope

This European standard specifies a method for determining the bending strength, including the effects of the edges, of flat glass for use in building. The method specified can also be used to determine the bending strength of the edges of glass separately.

The limitations of this standard are described in EN 1288-1.

EN 1288-1 should be read in conjunction with this standard.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

EN 572-1	Glass in building - Basic soda lime silicate glass products - Part 1 : Definitions and general physical and mechanical properties
EN 1288-1	Glass in building - Determination of the bending strength of glass - Part 1 : Fundamentals of testing glass
ISO 48	Rubber, vulcanised or thermoplastic - Determination of hardness (hardness between 10 IRHD and 100 IRHD)

SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70d1fdeb-7b47-4b51-
b1b6-b7482e8f8f5a/sist-en-1288-3-2001

3 Definitions

For the purposes of this standard, the following definitions apply:

3.1 bending stress: The tensile bending stress induced in the surface of a specimen.

NOTE: For testing purposes, the bending stress should be uniform over a specified part of the surface.

3.2 effective bending stress: A weighted average of the tensile bending stresses, calculated by applying a factor to take into account non-uniformity of the stress field.

3.3 bending strength: The bending stress or effective bending stress which leads to breakage of the specimen.

SIST EN 1288-3:2001

3.4 **equivalent bending strength**: The apparent bending strength of patterned glass, for which the irregularities in the thickness do not allow precise calculation of the bending stress.

4 Symbols

B Specimen width

E Modulus of elasticity (Young's modulus) of the specimen

NOTE: for soda lime silicate glass (see EN 572-1) a value of 70×10^3 N/mm^2 is used.

F_{max} Maximum force

NOTE: Where the bending rollers are not firmly attached to the testing machine, but are laid on the specimen, the force resulting from their weight is added to the maximum measured force.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

g Acceleration due to gravity

SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-8853-5b74a70d2c44/sist-en-1288-3-2001

h Specimen thickness

k Dimensionless factor (see 6.2 of EN 1288-1 for explanation)

L Specimen length

L_s Distance between the centre lines of the supporting rollers

L_b Distance between the centre lines of the bending rollers

M_b Bending moment

y Central deflection of the specimen relative to the supporting rollers

Z Section modulus

σ_b Bending stress in the surface area defined by the bending rollers

σ_{beff} Effective bending stress

σ_{bB} Bending strength

σ_{bG} Bending stress imposed by the self-weight of the specimen

SIST EN 1288-3:2001

ρ Density of the specimen

5 Apparatus

5.1 Testing machine

The bending test shall be carried out using a suitable bending testing machine, which shall incorporate the following features:

a) The stressing of the specimen shall be capable of being applied from zero up to a maximum value in a manner which minimizes shock and is stepless;

b) The stressing device shall be capable of the specified rate of stressing;

c) The testing machine shall incorporate a load measuring device with a limit of error of ± 2,0 % within the measuring range;

iTeh STANDARD PREVIEW

d) The supporting rollers and the bending rollers (see figure 2) shall have a diameter of 50 mm and a length of not less than 365 mm. All the rollers shall be free to rotate.

(standards.iteh.ai)
SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-b74a70d2c44/sist-en-1288-3-2001

5.2 Measuring instruments

The following measuring instruments are required:

- a measuring instrument enabling the width of the specimen to be measured to the nearest millimeter;

- a measuring instrument allowing the thickness of the specimen to be measured to the nearest 0,01 mm.

6 Sample

6.1 Number of specimens

The number of specimens to be tested shall be determined depending on the confidence limits required, especially with regard to estimating the extremes of the strength distribution (see EN 1288-1 for a discussion of numbers of specimens).

SIST EN 1288-3:2001

6.2 Specimen dimensions

Specimen length L: 1100 mm ± 5 mm

Specimen width B: 360 mm ± 5 mm

Specimen thickness h: thickness of the glass within the tolerance specified for the condition as supplied for test.

6.3 Specimen condition and treatment

The specimens shall be flat and their edges shall be representative of the edge finish to be tested. If the edge is asymmetrical with respect to the neutral axis of the specimen, both stressed edges shall be in the same orientation (see figure 1) and all specimens in a sample shall be tested the same way up.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 1288-3:2001
https://standards.iteh.ai/catalog/standards/sist/70629d64-0047-4731-74a70d2c44/sist-en-1288-3-2001

correct incorrect

1 Wheel cut edges

NOTE: The edges of cut glass are not the same on both corners, because wheel cut edges have the wheel applied to only one surface of the glass. In this instance the edge are asymmetrical with respect to the neutral axis of the specimen.

Figure 1: Asymmetrical edges

Any intended changes to the condition of the test piece by means of edge working, prior mechanical damage, etching, etc., shall be completed at least 24 h before testing the bending strength (see EN 1288-1). Similarly, protective coatings shall be removed at least 24 h before the test. The specimens shall be stored in the testing environment (see 7.2) for at least 4 h before being tested.

6.4 Adhesive film

To hold together the fragments, an adhesive film shall be fixed to the side of the specimens facing the bending rollers (see figure 2). This facilitates location of the fracture origin and measurement of the specimen thickness.