



SLOVENSKI STANDARD

oSIST prEN 1340:2010

01-oktober-2010

Betonski robniki - Zahteve in preskusne metode

Concrete kerb units - Requirements and test methods

Bordsteine aus Beton - Anforderungen und Prüfverfahren

Éléments pour bordures de trottoir en béton - Prescriptions et méthodes d'essai

Ta slovenski standard je istoveten z: **prEN 1340**

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ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products
93.080.20	Materiali za gradnjo cest	Road construction materials

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

DRAFT
prEN 1340

July 2010

ICS 93.080.20

Will supersede EN 1340:2003

English Version

Concrete kerb units - Requirements and test methods

Éléments pour bordures de trottoir en béton - Prescriptions
et méthodes d'essai

Bordsteine aus Beton - Anforderungen und Prüfverfahren

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 178.

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.

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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.

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

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Foreword

This document (prEN 1340:2010) has been prepared by Technical Committee CEN/TC 178 “Paving units and kerbs”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 1340:2003.

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1 Scope

This European Standard specifies materials, properties, requirements and test methods for unreinforced, cement bound precast concrete kerb units, channels and complementary fittings, that are for use in trafficked paved areas and roof coverings.

The units are used to fulfil one or more of the following:

Separation, physical or visual delineation, the provision of drainage or the containment of paved areas or other surfacing.

In case of regular use of studded tyres, additional requirements are sometimes needed.

This standard provides for the product marking and the evaluation of conformity of the product to this European standard.

Apart from the tolerances, this standard does not include requirements for cross-sections, shapes and dimensions.

This standard does not deal with the tactility or visibility of kerbs.

2 Normative references

This European Standard incorporates by dated and undated references, 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 (including amendments).

EN 10083-2, *Quenched and tempered steels — Part 2: Technical delivery conditions for unalloyed quality steels*.
<http://www.bdsi.com/catalo/standards/106f28753dcd/osist-pren-1340-2010>

EN 13369, *Common rules for precast concrete products*.

EN ISO 4288, *Geometric product specification (GPS) - Surface texture - Profile method: Rules and procedures for the assessment of surface texture (ISO 4288:1996)*.

EN ISO 6506-1, *Metallic materials - Brinell hardness test - Part 1: Test method*.

EN ISO 6506-2, *Metallic materials - Brinell hardness test - Part 2: Verification and calibration of testing machines*.

EN ISO 6506-3, *Metallic materials - Brinell hardness test - Part 3: Calibration of reference blocks*.

ISO 48, *Rubber, vulcanised or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*.

ISO 4662, *Rubber — Determination of rebound resilience of vulcanizates*.

ISO 7619, *Rubber — Determination of indentation hardness by means of pocket hardness meters*.

ISO 7873, *Control charts for arithmetic average with warning limits*.

ISO 7966, *Acceptance control charts*.

ISO 8486-1:1996, *Bond abrasives — Determination and designation of grain size distribution — Macrogrits F4 to F220*.

3 Terms and definitions

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

3.1

concrete kerb unit

precast concrete unit, intended to separate surfaces of the same or different levels to provide:

- physical or visual delineation or containment;
- individually or in combination with other kerbs, drainage channels;
- separation between surfaces submitted to different kinds of traffic.

3.2

complementary fitting

unit, sometimes a part of a kerb, channel etc, which is used as a transition piece for changes in direction, shape or height or a small piece to complete a line

3.3

overall length

length of a kerb excluding any interlocking features or spacers

3.4

height

distance between the bed face and the top of the kerb

3.5

bed face

lower surface in contact with the ground after laying

3.6

face

surface intended by the manufacturer to be seen when laid and in use

3.7

facing layer

layer of concrete on the face, or part of a face, of different materials and/or properties to the main body or backing layer

NOTE To be distinguished from wipe, being a fine cement mortar or slurry applied to the surface of the kerb.

3.8

draw

intended angle of the side face from the vertical plane over the full height of a kerb as shown in Figure 1

3.9

chamfer

bevelled arris, as shown in Figure 1

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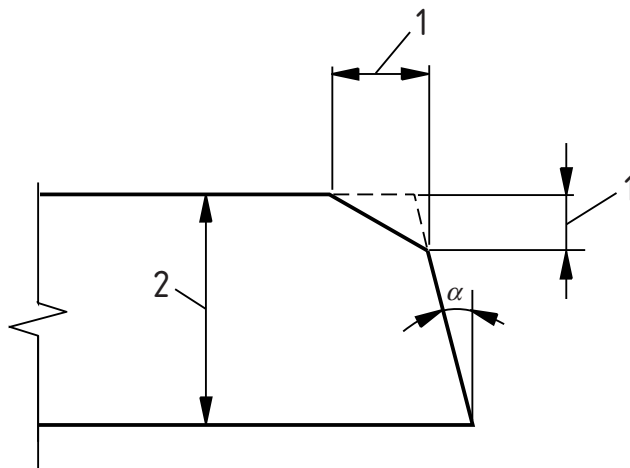
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3.10

arris

part of a kerb where two faces meet. It can be bevelled, rounded, chamfered, radiused or splayed



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Key

1 Chamfer

2 Height

 α Draw

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Figure 1 — Example of chamfer and draw

3.11

work dimension

dimension of a kerb specified for its manufacture to which the actual dimension should conform within specified permissible deviations

3.12

secondary processing

manufacturing process carried out after basic manufacture before or after hardening on the whole kerb or any surface

3.13

actual dimension

dimension of a kerb as measured

3.14

chased side face

side face of a concrete kerb, having a recessed profile

3.15

skid resistance

ability to resist relative movement between a vehicle tyre and the trafficked concrete kerb surface

3.16**slip resistance**

ability to resist relative movement between a pedestrian foot and the trafficked concrete kerb surface

3.17**reference line**

kerb or channel line to which the unit is intended to be laid

3.18**traffic face**

face of a kerb intended by the manufacturer to be above a road surface and which provides containment of traffic

3.19**wipe**

fine cement mortar or slurry applied to the surface of the units

4 Requirements for materials

4.1 General

Only materials with suitability established in terms of their properties and performance shall be used in the manufacture of concrete kerb units. The suitability requirements of the materials used shall be given in the manufacturer's production control documentation.

Where, by conformity with relevant specifications, the properties and performance of materials have been demonstrated, further testing need not be performed.

A reference scheme for materials inspection is given in annex A.

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4.2 Asbestos

Asbestos, or materials containing asbestos, shall not be used.

5 Requirements for products

5.1 General

The performance requirements of concrete kerb units are defined by classes which have associated marking designations.

Kerbs may be produced with a single concrete throughout or with different facing and backing layers.

A wipe shall only be carried out on a unit prior to curing; the constituents used shall be the same as in the body of the block.

When kerbs are produced with a facing layer this layer shall have a minimum thickness of 4.0 mm over that area claimed by the manufacturer to be faced, when measured in accordance with annex C. Isolated particles of aggregate protruding into the facing layer shall be ignored. The facing layer shall be an integral part of the kerb.

A bevelled arris exceeding 2 mm shall be described as chamfered. Its dimensions shall be declared by the manufacturer.

Kerbs may be produced with functional and/or decorative profiles, which shall not be included in the work dimensions of a kerb.

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The surface of kerbs may be textured, secondary processed or treated chemically; these finishes or treatments shall be described and declared by the manufacturer.

5.2 Shape and dimensions**5.2.1 General**

All references to dimensions in this subclause are to work dimensions.

The conformity criteria corresponding to each requirement taken separately are given in 6.3.8.1. The dimensions and deviations shall be measured according to annex C.

National standards may specify kerb cross-sections and lengths.

NOTE The size of the space allocated to the kerb should include an allowance for joints and deviations.

5.2.2 Work dimensions

The work dimensions shall be stated by the manufacturer.

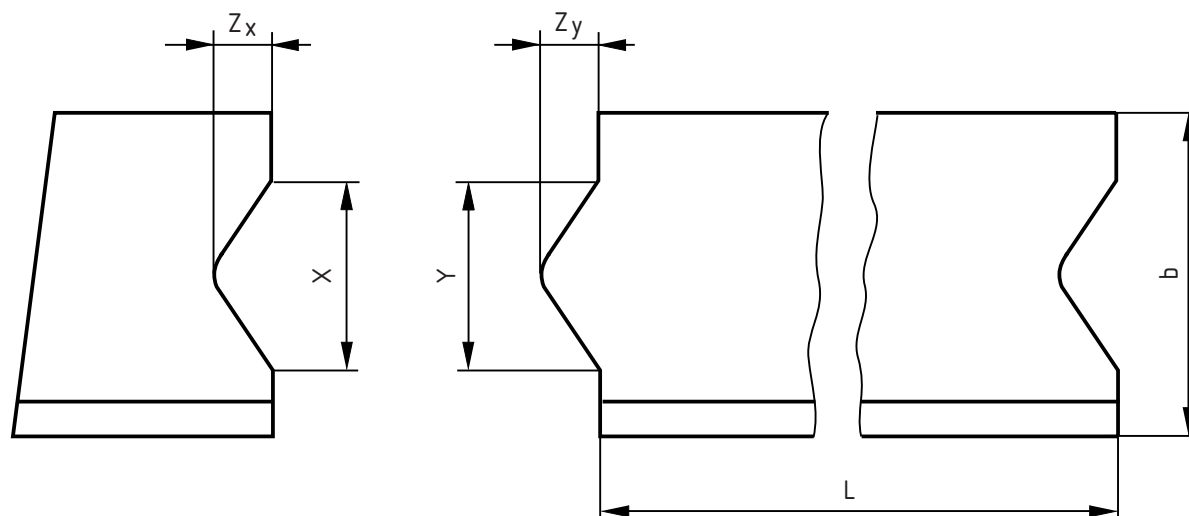
NOTE The recommended length of a straight kerb including joint is 1 000 mm.

5.2.3 Unit geometry**5.2.3.1 End treatment**

Kerbs may be produced with plain ends or with end features to facilitate interlocking or laying. These features shall be declared by the manufacturer.

Figures 2, 3 and 4 show examples

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**Key**

$Y \leq X - 3 \text{ mm}$ and $Z_y \leq Z_x - 3 \text{ mm}$

X minimum : $\geq 1/5 b$ and $\geq 20 \text{ mm}$

X maximum : $\leq 1/3 b$ and $\leq 70 \text{ mm}$

Z_y maximum : $Y/2$

Tolerance on X and Z_x - 1, + 2 mm

Tolerance on Y and Z_y - 2, + 1 mm

L Length

b Width

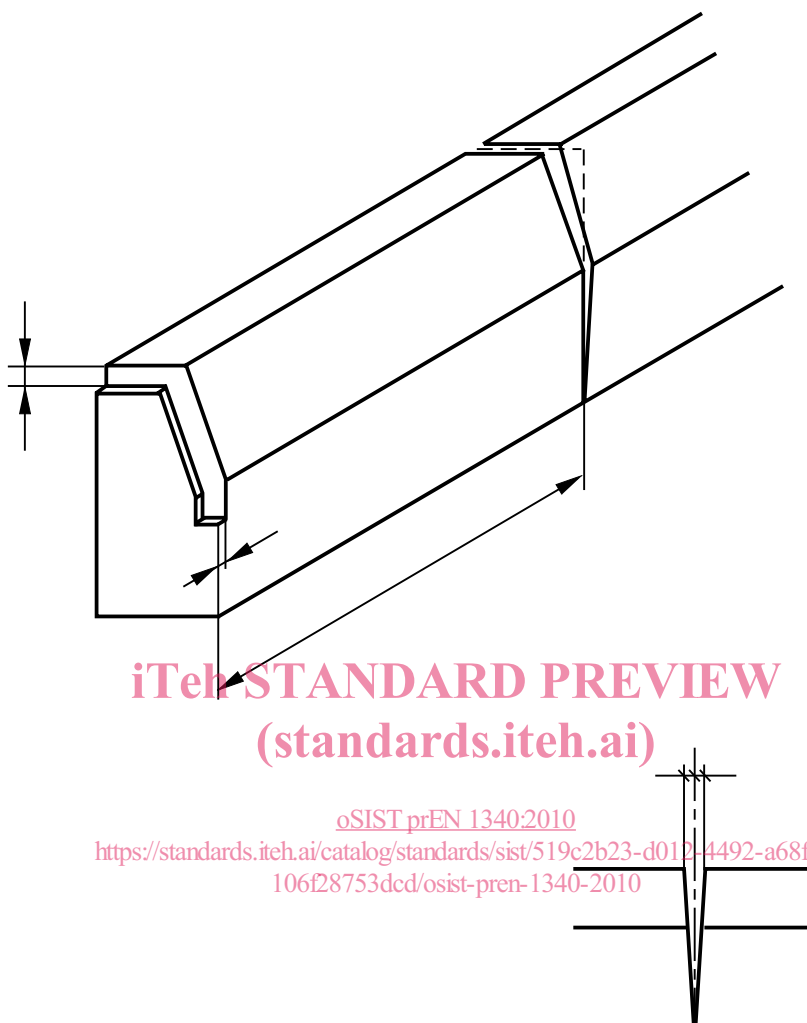
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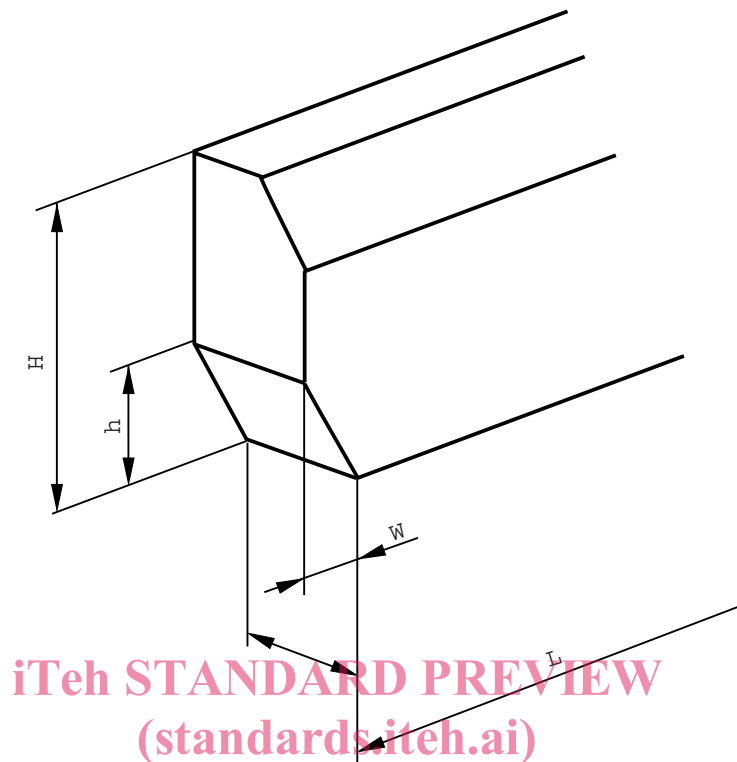
Figure 2 — Example of interlocking feature; requirement of dimensions and permissible deviations



Key

L Length

Figure 3 — Example of dimensions of chase and draw

**Key**

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H Height of kerb unit

h Height of recess or cut out

W Width

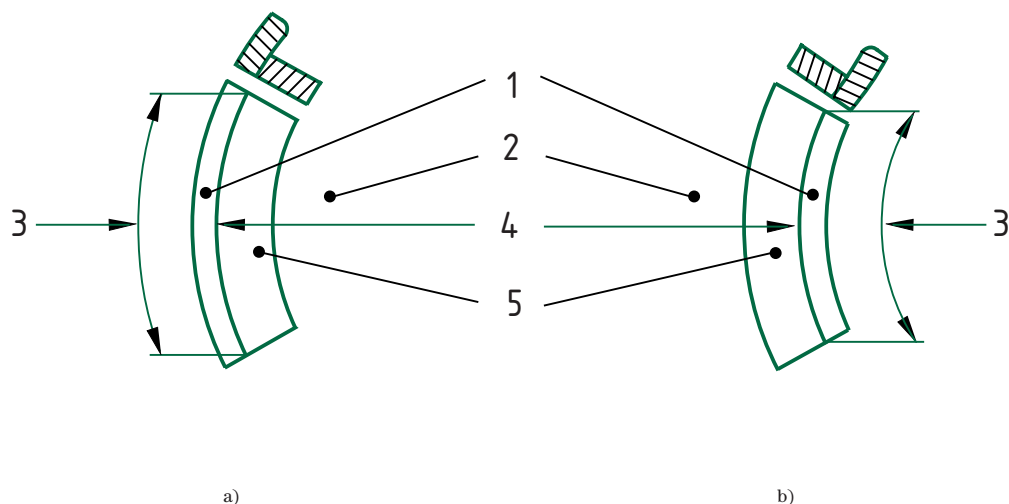
L Length

Figure 4 — Example of a recess or cut-out on the bottom end of a kerb

5.2.3.2 Radiussed kerbs

Radiussed kerbs shall be described as convex or concave. The description shall refer to the reference line. The radius of a kerb and its overall length shall be measured to and along its reference line.

The preferred radii of the kerb are 0,5; 1; 2; 3; 4; 5; 6; 8; 10 and 15 m. The recommended length is 780 mm. National standards may specify other radii and length.

**Key**

- | | |
|---------------|-----------|
| 1 Kerb | 4 Radius |
| 2 Carriageway | 5 Channel |
| 3 Length | |

Figure 5 — Examples of radiussed kerbs, a) concave and b) convex
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5.2.3.3 Permissible deviations

The values for the permissible deviations on the manufacturer's declared work dimensions are as given below:

Length: $\pm 1\%$ to the nearest millimetre with a minimum of 4 mm, not exceeding 10 mm.

Other dimensions, except radius:

for faces: $\pm 3\%$ to the nearest millimetre with a minimum of 3.0 mm, not exceeding 5.0 mm.

for other parts: $\pm 5\%$ to the nearest millimetre with a minimum of 3.0 mm, not exceeding 10.0 mm.

The difference between any two measurements of a single dimension of a single kerb shall be ≤ 5.0 mm.

For faces described as flat and edges described as straight, the permissible deviations on flatness and straightness are given in Table 1.

Table 1 — Permissible deviations of flatness and straightness

Length of gauge	Permissible deviation of flatness and straightness
mm	mm
300	$\pm 1,5$
400	$\pm 2,0$
500	$\pm 2,5$
800	$\pm 4,0$

5.3 Physical and mechanical properties

5.3.1 General

The kerbs shall conform to the following requirements at the time they are declared suitable for use by the manufacturer.

When complementary fittings or kerbs, because of their geometry, cannot be tested according to this standard, they are considered to conform to this standard, provided they have at least the same concrete quality as kerbs conforming to this standard.

5.3.2 Weathering resistance

5.3.2.1 Test methods

The weathering resistance is determined by tests according to annex D for freeze-thaw resistance or annex E for water absorption and to the conformity criteria of 6.3.8.2.

5.3.2.2 Performances and classes

The kerbs shall conform to the requirements in Tables 2.1 or 2.2.

Recommendations as to the class(es) of weathering resistance required to ensure durability for that country, for the uses for which the product is put on the market, may be made at a national level.

Table 2.1 — Water absorption

Class	Marking	Water absorption % by mass
1	A	no performance measured
2	B	≤ 6.5 as a mean

Where specific conditions exist such as frequent contact of surfaces with de-icing salts under frost conditions, the requirements defined in Table 2.2 may have to be fulfilled.

Table 2.2 — Resistance to freeze-thaw with de-icing salts

Class	Marking	Mass loss after freeze/thaw test kg/m ²
3	D	≤ 1,0 as a mean as a mean with no individual value > 1,5

5.3.3 Bending strength

5.3.3.1 Test method

The characteristic bending strength shall be determined by testing according to annex F and to the conformity criteria given in 6.3.8.3.