



SLOVENSKI STANDARD
SIST EN 845-2:2004
01-januar-2004

BUXca Yý U.
SIST EN 845-2:2002

Specifikacija za dodatne komponente zidovine - 2. del: Preklade

Specification for ancillary components for masonry - Part 2: Lintels

Festlegungen für Ergänzungsbauteile für Mauerwerk - Teil 2: Stürze

Spécifications pour composants accessoires de maçonnerie - Partie 2: Linteaux

(standards.iteh.ai)

Ta slovenski standard je istoveten z: EN 845-2:2003

[SIST EN 845-2:2004](#)

<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>

ICS:

91.060.10

91.080.30

SIST EN 845-2:2004

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 845-2:2004

<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>

English version

**Specification for ancillary components for masonry - Part 2:
Lintels**

Spécification pour composants accessoires de maçonnerie
- Partie 2: Linteaux

Festlegungen für Ergänzungsbauteile für Mauerwerk - Teil
2: Stürze

This European Standard was approved by CEN on 29 November 2002.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>



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

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

Contents	Page
Foreword.....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms, definitions and symbols	7
3.1 Terms and definitions	7
3.2 Symbols	9
4 Materials.....	12
4.1 Steel lintels	12
4.2 Concrete lintels	12
4.3 Masonry lintels	13
4.4 Combined and composite lintels.....	14
5 Requirements	14
5.1 General	14
5.2 Dimensions, mass and limit deviations	14
5.2.1 Dimensions	14
5.2.2 Mass per unit area.....	15
5.2.3 Bearing length	15
5.2.4 Deviation from declared values.....	15
5.3 Mechanical performance.....	15
5.3.1 General.....	15
5.3.2 Load bearing capacity and load ratios.....	15
5.3.3 Flexural resistance.....	16
5.3.4 Deflection	16
5.3.5 Shear resistance.....	16
5.4 Durability.....	16
5.4.1 General	16
5.4.2 Steel lintels	17
5.4.3 Concrete lintels and masonry lintels	17
5.5 Water penetration and installation	17
5.6 Thermal properties.....	17
5.7 Freeze/thaw resistance.....	17
5.7.1 General.....	17
5.7.2 Steel lintels	17
5.7.3 Concrete lintels	17
5.7.4 Masonry lintels	17
5.8 Resistance to fire	18
5.9 Water absorption.....	18
5.9.1 General	18
5.9.2 Steel lintels	18
5.9.3 Other lintels	18
5.10 Water vapour permeability	18
6 Description and designation.....	18
7 Marking.....	20
8 Evaluation of conformity	21
8.1 General.....	21
8.2 Initial type tests	21
8.3 Factory production control	22
8.4 Sampling for initial type testing and independent testing of consignments.....	22

Annex A (informative) Method for assessment of loads on lintels	24
Annex B (informative) Recommendations for installation of lintels	25
B.1 Bearings	25
B.2 Installation	25
B.3 Composite lintels	26
Annex C (normative) Corrosion protection systems	27
C.1 Steel lintels	27
C.2 Concrete and masonry lintels (except those manufactured using autoclaved aerated concrete)	29
C.3 Lintels manufactured using autoclaved aerated concrete	30
Annex D (normative) Scheme of factory production control	32
D.1 General	32
D.2 Design	32
D.2.1 Design process	32
D.2.2 Communications	32
D.3 Production	32
D.3.1 Raw or incoming materials	32
D.3.2 Production process	32
D.3.3 Tests on the finished or part finished product	32
D.3.4 Equipment	32
D.4 Assessment of results and other actions	33
D.4.1 General	33
D.4.2 Assessment of results	33
D.4.3 Records	33
D.4.4 Traceability	33
D.4.5 Corrective action for non-conforming materials and products	33
Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU Construction Products Directive	34
Bibliography	40

iTeH STANDARD PREVIEW
(standards.iteh.ai)
SIST EN 845-2:2004
<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>

Foreword

This document (EN 845-2:2003) has been prepared by Technical Committee CEN/TC125 'Masonry', the Secretariat of which is held by BSI, following initial preparation by Working Group 3.

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 October 2003, and conflicting national standards shall be withdrawn at the latest by January 2005.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of the EU Construction Products Directive (89/106/EEC).

For relationship with EU Directives, see informative Annex ZA which is an integral part of this standard.

In this European Standard the Annexes A and B are informative and the Annexes C and D are normative.

This document supersedes EN 845-2:2001.

This Part has been modified, including the introduction of additional requirements, taking into account the detailed answer by CEN/TC 125 to EC mandate M116 for masonry as well as details of the relationship of this new harmonized European Standard with the EU Directives.

EN 845 "Specification for ancillary components for masonry" consists of the following Parts:

— Part 1: Wall ties, tension straps, hangers and brackets.

— Part 2: Lintels.

— Part 3: Bed joint reinforcement of steel meshwork.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies requirements for prefabricated lintels for spans over clear openings in a masonry wall up to a maximum of 4,5 m and made from steel, autoclaved aerated concrete, manufactured stone, concrete, fired clay units, calcium silicate units, natural stone units, or using a combination of these materials.

Prefabricated lintels can be either complete lintels or the prefabricated part of a composite lintel.

This European Standard is not applicable to:

- a) Lintels completely made on site;
- b) Lintels, the tensile parts of which are made on site;
- c) Timber lintels;
- d) Natural stone lintels, not reinforced.

Linear components spanning clear openings greater than 4,5 m in masonry walls and linear components intended for use independently in a structural role (e.g. beams) are not covered by this standard.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

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 (including amendments).

EN 206-1: 2000, *Concrete — Part 1: Specifications, performance, production and conformity*.

EN 771-1, *Specification for masonry units — Part 1: Clay masonry units*.

EN 771-2, *Specification for masonry units — Part 2: Calcium silicate masonry units*.

prEN 771-3, *Specification for masonry units — Part 3: Aggregate concrete masonry units. (Dense and light-weight aggregates)*

prEN 771-4, *Specification for masonry units — Part 4: Autoclaved aerated concrete masonry units*.

prEN 771-5, *Specification for masonry units — Part 5: Manufactured stone*.

prEN 771-6, *Specification for masonry units — Part 6: Natural stone masonry units*.

EN 772-1, *Methods of test for masonry units — Part 1: Determination of compressive strength*.

EN 772-11, *Methods of test for masonry units — Part 11: Determination of water absorption of aggregate concrete, manufactured stone and natural stone masonry units due to capillary action and the initial rate of water absorption of clay masonry units*.

EN 845-2:2003 (E)

EN 772-22, *Methods of test for masonry units — Part 22: Determination of freeze/thaw resistance of clay masonry units.*

EN 846-9, *Methods of test for ancillary components for masonry — Part 9: Determination of flexural resistance, and shear resistance of lintels.*

EN 846-11, *Methods of test for ancillary components for masonry — Part 11: Determination of dimensions and bow of lintels.*

EN 846-13, *Methods of test for ancillary components for masonry — Part 13: Determination of resistance to impact, abrasion and corrosion of organic coatings.*

EN 990: 2002, *Test methods for verification of corrosion protection of reinforcement in autoclaved aerated concrete and lightweight aggregate concrete with open structure.*

EN 998-2, *Specification for mortar for masonry — Part 2: Masonry mortar.*

EN 1745 *Masonry and masonry products - Methods for determining design thermal values.*

EN 10025, *Hot rolled products of non-alloy structural steels; Technical delivery conditions.*

prEN 10080, *Steel for the reinforcement of concrete — Weldable reinforcing steel.*

EN 10088-1, *Stainless steels - Part 1: List of stainless steels.*

EN 10088-2, *Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip for general purposes.*

EN 10088-3, *Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods and sections for general purposes.*

EN 10111, *Continuously hot rolled low carbon steel sheet and strip for cold forming — Technical delivery conditions.*

EN 10130, *Cold rolled low carbon steel flat products for cold forming — Technical delivery conditions.*

prEN 10138, *Prestressing steels.*

EN 10142, *Continuously hot-dip zinc coated low carbon steels strip and sheet for cold forming — technical delivery conditions.*

EN 10147, *Continuously hot-dip zinc coated structural steels strip and sheet — Technical delivery conditions.*

prEN 12602, *Prefabricated reinforced components of autoclaved aerated concrete.*

EN 12620, *Aggregates for concrete*

prEN 13501-2, *Fire classification of construction products and building elements — Part 2: Classification using data from fire resistance tests excluding ventilation services.*

EN ISO 1461, *Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods ISO 1461:1999.*

ISO 1463, *Metallic and oxide coatings. Measurement of coating thickness — Microscopical method.*

3 Terms, definitions and symbols

3.1 Terms and definitions

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

NOTE 1 Examples of lintel types are shown in Figures 1 to 3. The figures are only for illustration of lintel types. Other details such as bearings, thermal insulation systems and damp proof courses are not shown.

NOTE 2 General dimensions defined in clause 3 are illustrated in Figures 3 and 4.

3.1.1

bearing length

length of the end of a lintel which bears on its support

3.1.2

clear opening

clear distance between lintel supports

3.1.3

combined lintel

lintel consisting of two or more structural elements each one acting with compression and tension zones

3.1.4

composite lintel

lintel comprising a prefabricated part and a complementary element of in-situ masonry or concrete above, acting together

3.1.5

composite lintel height

overall height of the tension and compression zones of a composite lintel

3.1.6

concrete lintel

lintel manufactured using reinforced or prestressed concrete or manufactured stone or autoclaved aerated concrete

3.1.7

declared value

value for a product property, determined in accordance with this standard, that a manufacturer is confident of achieving bearing, in mind the variability of the manufacturing process

3.1.8

effective span

distance between the centres of the bearing of a lintel, or the clear opening spanned by the lintel plus the overall height of the lintel including any complementary element, whichever is the lesser

3.1.9

flexural resistance

mean uniformly distributed load at which failure of a sample of lintel specimens occurs (or a lower load at which tests are stopped in accordance with the recommendations of the manufacturer of the lintel)

3.1.10

flexural load at the stated deflection

total of the uniformly distributed load which can be sustained by a lintel without resulting in a deflection greater than the stated deflection

3.1.11

lintel

lineal element supporting load over an opening in a masonry wall

3.1.12

lintel height

overall height of the prefabricated part of a lintel

3.1.13

lintel length

overall length of the prefabricated lintel

3.1.14

load bearing capacity

mean value for a sample of lintels of the total of the uniformly distributed load at failure or at an extreme deflection, whichever is the lesser

3.1.15

load ratio

the ratio of inner leaf load to outer leaf load on a lintel supporting a double-leaf or cavity wall

3.1.16

masonry lintel

lintel comprising one or more shell casing units completed by the incorporation within the shell casing of reinforced or prestressed concrete

3.1.17

shear resistance

mean shear load at which failure of a sample of lintel specimens occurs (or a lower load at which tests are stopped in accordance with the recommendations of the manufacturer of the lintel)

3.1.18

shell casing unit

prefomed component with one or more channels into which is incorporated either reinforced or prestressed concrete

3.1.19

single lintel

prefabricated lintel acting alone

3.1.20

stated deflection

manufacturer's chosen value of deflection that is not to be exceeded in the intended use of the lintel

3.1.21

steel lintel

lintel manufactured from steel

iTeh STANDARD PREVIEW
(standards.iteh.ai)

<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>

3.1.22**structural shell casing unit**

shell casing unit which is made of a material with a compressive strength not less than that of the infill concrete

3.2 Symbols

NOTE General dimensions are illustrated in Figures 3 and 4.

B is the smallest width of a structural shell casing unit specimen, in mm, (see Figure 5);

b is the bearing length, in mm;

d_c is the composite lintel height, in mm;

d_l is the lintel height, in mm;

δ is the deflection at the flexural load P , in mm;

δ_d is the stated deflection, in mm;

H is the cut length of a structural shell casing unit specimen, in mm, (see Figure 5);

l is the lintel length, in mm;

l_o is the clear opening, in mm;

l_e is the effective span, in mm;

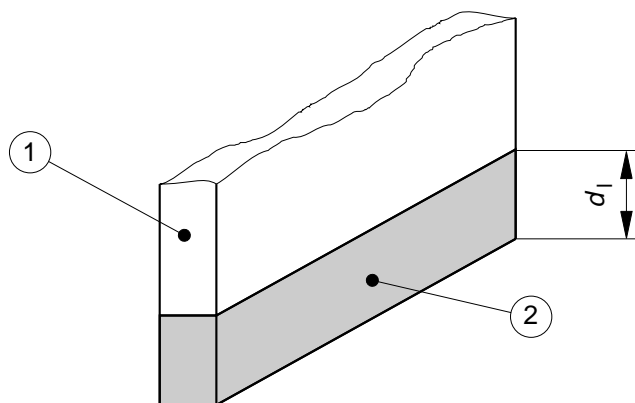
P is the flexural load at the deflection δ , in kN or kN/m;

P_d is the declared value of flexural load at the stated deflection δ_d , in kN or kN/m;

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 845-2:2004](https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004)

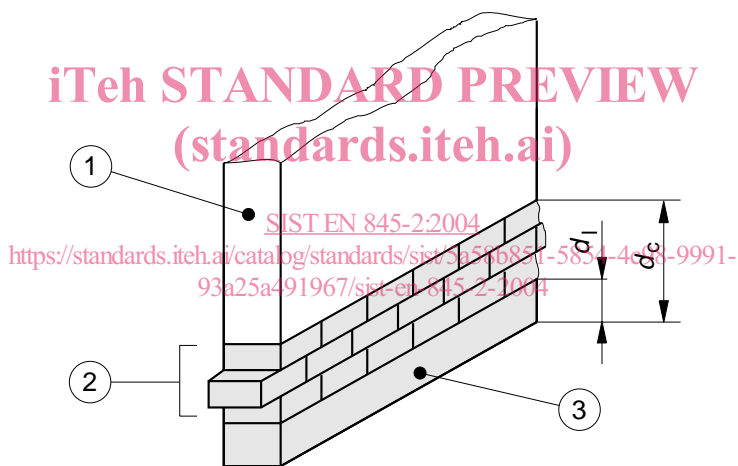
<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>



Key

- 1 Supported masonry
- 2 Single lintel

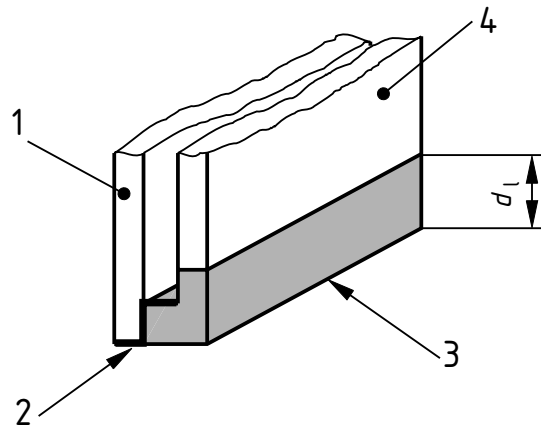
Figure 1 — Example of a single lintel (see 3.1.19)



Key

- 1 Supported masonry
- 2 Complementary element (masonry or concrete)
- 3 Prefabricated part

Figure 2 — Example of a composite lintel (see 3.1.4)



Key

- | | |
|----------------------------------|----------------------------------|
| 1 supported masonry - outer leaf | 3 Inner leaf lintel |
| 2 Outer leaf lintel | 4 Supported masonry – inner leaf |

Figure 3 — Example of a combined lintel (see 3.1.3)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 845-2:2004

<https://standards.iteh.ai/catalog/standards/sist/5a58b851-5854-4c98-9991-93a25a491967/sist-en-845-2-2004>