SLOVENSKI STANDARD
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Specifikacija za dodatne komponente zidovja - 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

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91.060.10	Stene. Predelne stene. Fasade	Walls. Partitions. Facades
91.080.30	Zidane konstrukcije	Masonry

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EUROPEAN STANDARD

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Specification for ancillary components for masonry - Part 2: Lintels

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This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 125.

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

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Foreword

This document (prEN 845-2:2010) has been prepared by Technical Committee CEN/TC 125 “Masonry”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 845-2:2003.

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 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.*

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. Concrete and steel beams conforming to EN 1090-1, EN 12602 and EN 13225, as appropriate, are not covered by this Standard.

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 of which, the tensile parts 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.

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, *Concrete — Part 1: Specification, 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.*

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

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

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

EN 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 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, *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 1090-1, *Steel and aluminium structural components — General delivery conditions.*

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

EN 10025-1, + new titles to add.

EN 10025-2, + new titles to add.

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

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 of corrosion resisting steels for general purposes.*

EN 10088-3, *Stainless steels — Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels 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 Parts 1, 2 and 3, *Prestressing steels* + titles to add.

EN 10143, *Continuously hot-dip coated steel sheet and strip — Tolerances on dimensions and shape.*

EN 10326, *Continuously hot dip coated strip and sheet of structural steels — Technical delivery conditions*.

EN 10327, *Continuously hot-dip coated strip and sheet of low carbon steelfor cold forming — Technical delivery conditions*.

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

EN 12620, *Aggregates for concrete.*

EN 13225, *Precast concrete products — Linear structural elements*.

EN 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).

EN ISO 1463, *Metallic and oxide coatings. Measurement of coating thickness — Microscopical method* (ISO 1463:2003).

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
autoclaved aerated concrete lintel
lintel manufactured using reinforced autoclaved aerated concrete

3.1.2
bearing length
length of the end of a lintel which bears on its support

3.1.3
built-in length
minimum length needed to anchor the reinforcing bars

3.1.4
clear opening
clear distance between lintel supports

3.1.5
combined lintel
lintel consisting of two or more structural elements each one acting with compression and tension zones

3.1.6
composite lintel
lintel comprising a prefabricated part and a complementary element of in-situ masonry or concrete above, acting together

3.1.7
composite lintel height
overall height of the tension and compression zones of a composite lintel

3.1.8
concrete lintel

3.1.9
lintel manufactured using reinforced or prestressed concrete
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

3.1.10
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

3.1.11
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)

3.1.12
lintel
lineal element supporting load over an opening in a masonry wall

3.1.13
lintel height
overall height of the prefabricated part of a lintel

3.1.14
lintel length
overall length of the prefabricated lintel

3.1.15
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

3.1.16
load ratio
the ratio of inner leaf load to outer leaf load on a lintel supporting a double-leaf or cavity wall

3.1.17
masonry lintel
lintel comprising one or more shell casing units completed by the incorporation within the shell casing of reinforced or prestressed concrete

3.1.18
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)

3.1.19
shell casing unit
preformed component with one or more channels into which is incorporated either reinforced or prestressed concrete

3.1.20
single lintel
prefabricated lintel acting alone

3.1.21
declared deflection
the deflection at one third of the declared load capacity of the lintel

3.1.22
steel lintel
lintel manufactured from steel

3.1.23
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_s is the smallest width of a structural shell casing unit specimen, in mm, (see Figure 5);

b is the bearing length, in mm;

d_{ppcl} is the height of the prefabricated part of the composite lintel;

d_C is the composite lintel height, in mm;

d_l is the lintel height, in mm;

δ_{dv} is the declared deflection in a vertical direction, in mm;

δ_{dh} is the declared deflection in a horizontal direction, in mm;

h_u is the height of the masonry unit;

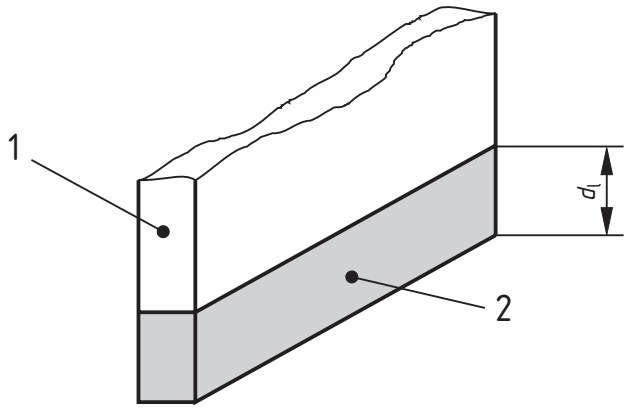
t_{bj} is the thickness of the bedjoint;

h_s 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;

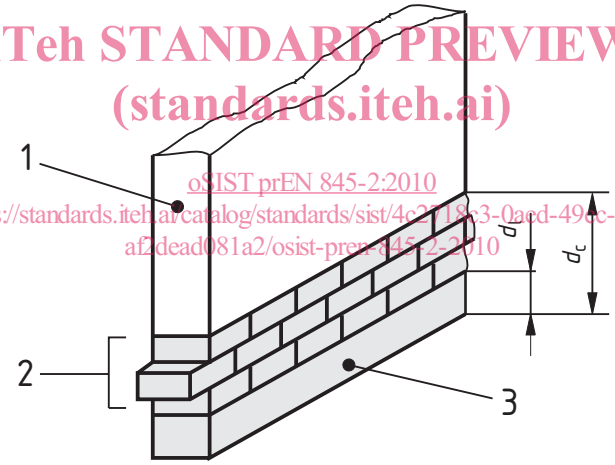
l_e is the effective length, in mm;



Key

1 Supported masonry
2 Single lintel

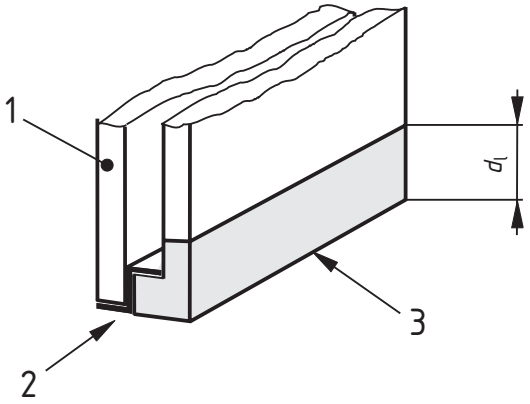
Figure 1 — Example of a single lintel (see 3.1.19)



Key

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

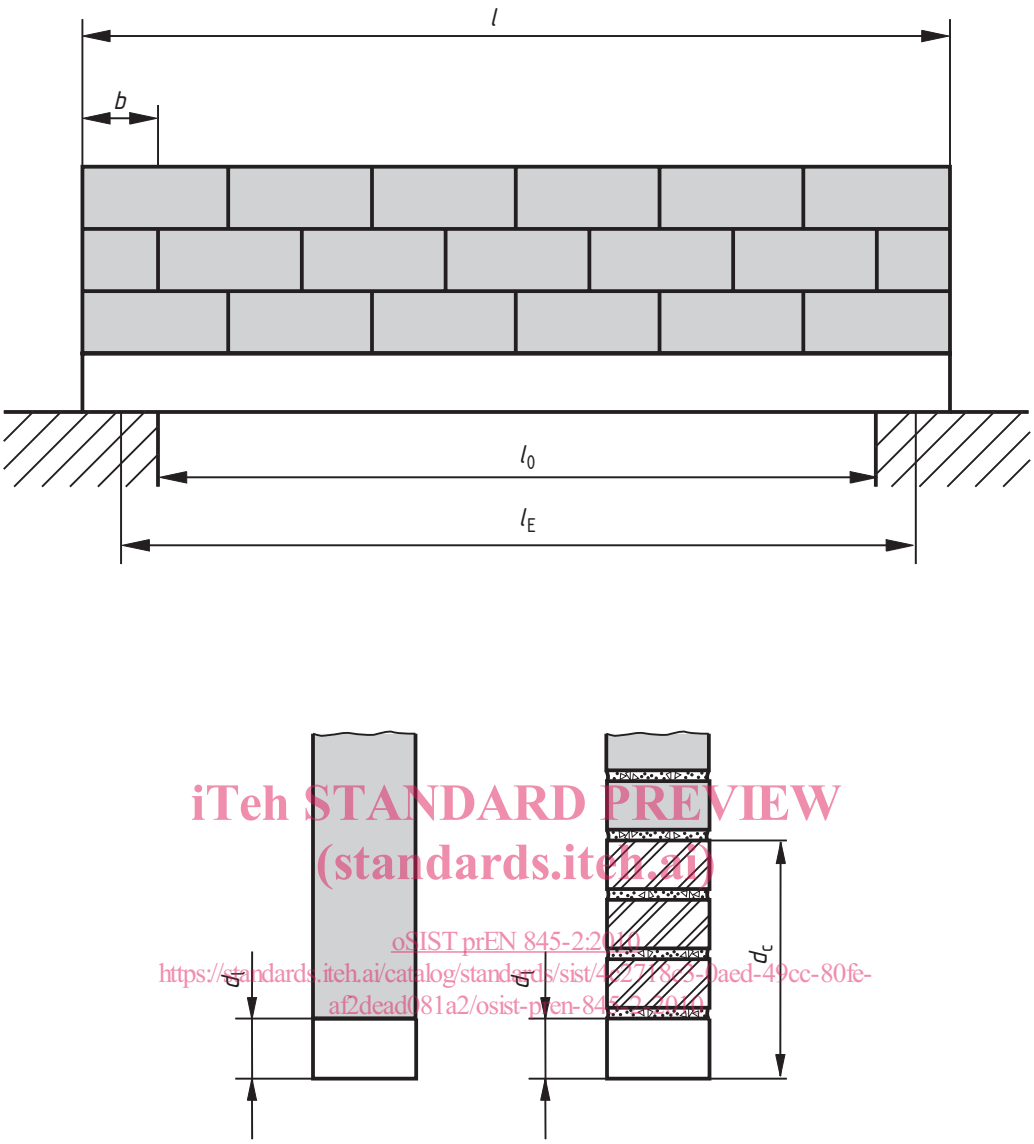
Figure 2 — Example of a composite lintel (see 3.1.4)



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)



Key

1 Lintels other than composite lintels

2 Composite lintel

Figure 4 — General dimensions