

SLOVENSKI STANDARD
SIST EN 1996-1-1:2006/oprA1:2010
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Evrokod 6: Projektiranje zidanih konstrukcij - 1-1. del: Splošna pravila za armirano in nearmirano zidovje

Eurocode 6: Design of masonry structures - Part 1-1: General rules for reinforced and unreinforced masonry structures

Eurocode 6: Bemessung und Konstruktion von Mauerwerksbauten - Teil 1-1: Allgemeine Regeln für bewehrtes und unbewehrtes Mauerwerk

Eurocode 6: Calcul des ouvrages en maçonnerie - Partie 1-1: Règles générales pour ouvrages en maçonnerie armée et non armée

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ICS:

91.010.30	Tehnični vidiki	Technical aspects
91.080.30	Zidane konstrukcije	Masonry

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Eurocode 6: Design of masonry structures - Part 1-1: General rules for reinforced and unreinforced masonry structures

Eurocode 6: Calcul des ouvrages en maçonnerie - Partie 1-1: Règles générales pour ouvrages en maçonnerie armée et non armée

Eurocode 6: Bemessung und Konstruktion von Mauerwerksbauten - Teil 1-1: Allgemeine Regeln für bewehrtes und unbewehrtes Mauerwerk

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 250.

This draft amendment A1, if approved, will modify the European Standard EN 1996-1-1:2005. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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Foreword

This document (EN 1996-1-1:2005/prA1:2010) has been prepared by Technical Committee CEN/TC 250 "Structural Eurocodes", the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

1 Amendment to 1.5.8

Add a new definition:

"

1.5.8.4

Composite lintel

Lintel comprising a prefabricated part and a complementary element of *insitu* masonry, above, acting together

"

2 Amendment to 1.5.11

Add a new definition:

"

1.5.11.5

Built in length

A length declared by the manufacturer of the prefabricated part, according to EN 845-2

"

3 Amendment to 1.6

Add the following new symbols:

"

F_{tkl} is the characteristic tensile strength of the prefabricated part of the composite lintel declared by the manufacturer in accordance with EN 845-2;

f_{vkoI} the initial shear strength at zero precompression at the interface of the top surface of the prefabricated part and the masonry built on it (the complementary element).

h_l the height of a composite lintel from the underside of the prefabricated part to the top of the complementary element

ν_{Ed} the design shear stress at the interface of the prefabricated part and the complementary element

"

EN 1996-1-1:2005/prA1:2010 (E)

4 Amendment to 3.6

Add a new clause 3.6.3 between 3.6.2 and the existing clause 3.6.3 and adapt the numbering of existing clauses:

"

3.6.3 Characteristic shear strength of masonry/prefabricated lintel interface

(1) The characteristic initial shear strength of the interface between masonry and the surface of the prefabricated part of a composite lintel, $f_{vko,i}$, is declared by the manufacturer. The value of $f_{vko,i}$ should not be taken to be greater than f_{vko} in the masonry above the prefabricated part.

"

5 Amendment to 5.5.2

Add a new clause 5.5.2.4 between 5.5.2.3 and the existing clause 5.5.2.4 and adapt the numbering of existing clauses:

"

5.5.2.4 Composite lintels

(1) The effective span of composite lintels should be taken as the clear distance between bearings (supports) spanned by the lintel plus the declared built in length or as the distance between the centres of supports plus the depth of the lintel, h_l , whichever is the lesser (see EN 845-2).

(2) All the vertical loads acting within an isosceles triangle, having a base of the effective span of the lintel, should be taken into account, unless the loads can be taken by other means, for example, by upper floors acting as ties.

(3) In determining the bending moments, the composite lintel may be considered as simply supported between supports.

(4) The shear at the interface of the complementary element of masonry and the upper surface of the prefabricated part of the lintel, v_{Ed} , is needed if the value of $f_{vko,i}$ is lower than the value of f_{vko} according 3.6.3(1); it may be calculated as follows:

$$v_{Ed} = \frac{V_{Ed} A_{ce} h_{ce}}{I_{cl} t} \quad (5.13)$$

where

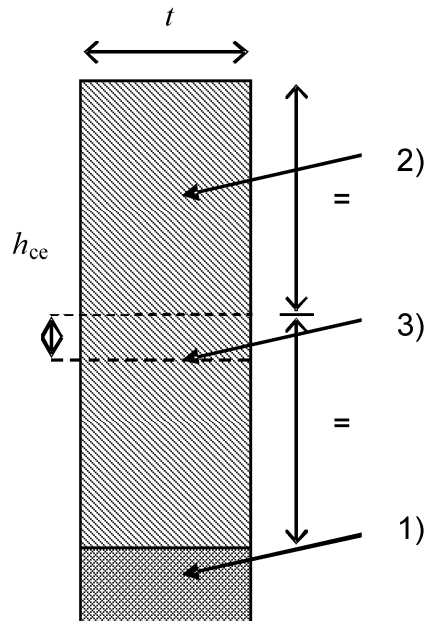
v_{Ed} is the design vertical shear load at the cross section under consideration

A_{ce} is the cross sectional area of the complementary element

h_{ce} is the vertical distance from the centre of the complementary element to the neutral axis of the whole composite lintel

I_{cl} is the second moment of area of the composite lintel

t is the thickness of the wall at the interface of the complementary element and the prefabricated part.

**Key**

- 1) Prefabricated part
- 2) Complementary element
- 3) Neutral axis of the combined lintel

Figure 5.6 — Cross section on a composite lintel

"

6 Amendment to 6.2

Add in 6.2 (2) after the line with formula (6.13):

"

or as an alternative by:

$$V_{Rd} = V_{Rdlt} \quad (6.14)$$

"

Add at the end of the list in 6.2 (2):

"

V_{Rdlt} is a limit design value

NOTE The decision to use equation (6.14) and V_{Rdlt} in a country, and the values or derivation related to e.g. the tensile strength of the units and/or overlap in the masonry, if that option is chosen, may be found in its National Annex. Material properties used as input should be restricted to those defined in European standards.

"

EN 1996-1-1:2005/prA1:2010 (E)

7 Amendment to 6.6.5

Replace 6.6.5 by the following clause:

"

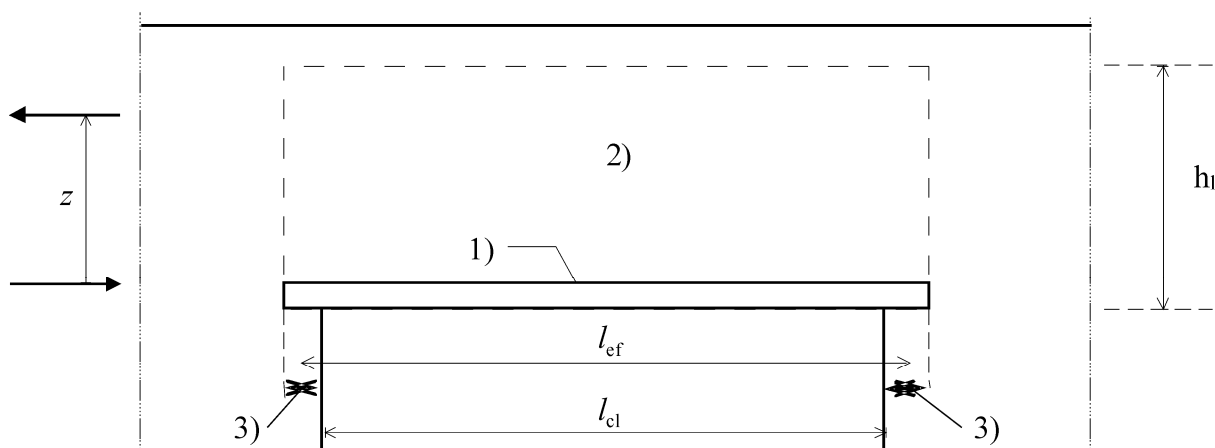
(1) In the case of composite lintels, the design value of the moment of resistance, M_{Rd} , can be obtained from 6.6.4 when the composite lintel can be considered as a deep beam or 6.6.2 when it cannot.

(2) When calculating the moment of resistance according 6.6.2 or 6.6.4, replace $A_s f_{yd}$ with F_{tkl} / γ_M

where:

F_{tkl} is the characteristic tensile strength of the prefabricated part of the composite lintel declared by the manufacturer in accordance with prEN 845-2:2009;

γ_M is the partial factor for materials (reinforcing steel);



Key

- 1) Prefabricated part
- 2) Complementary element
- 3) Built in length

Figure 6.8 — Composite Lintel

(3) The composite lintel should be verified for vertical loadings in the vicinity of its supports.

(4) The verification of composite lintels subjected to shear loading should be carried out according to (6.7.3) or (6.7.4) depending on whether the lintel is a deep beam or not. When the value of f_{vko} is smaller than value of f_{vko} according 3.6.3(2), the shear stress at the interface of the prefabricated part and the complementary element should be verified such that:

$$v_{Ed} \leq f_{vko} / \gamma_M + 0,4 \sigma_d \quad (6.3.6)$$

where:

v_{Ed} is the shear stress at the interface of the prefabricated part and the complementary element

σ_d is the design vertical stress arising from the loads in the isosceles triangle above the lintel only.

"