
AcbHJyb] VYfcbg_]nXY_]!'GhfcdB]g]ghYa]]n'bcg]Wj]b'dc`b]!' "XY.'? YfUa] bU
dc`b]U

Precast concrete products - Beam-and-block floor systems - Part 3: Clay blocks

Betonfertigteile - Balkendecken mit Zwischenbauteilen - Teil 3: Keramische
Zwischenbauteile

Produits préfabriqués en béton - Systèmes de planchers à poutrelles et entrevous -
Partie 3: Entrevous en terre cuite

Ta slovenski standard je istoveten z: prEN 15037-3

ICS:

91.100.30	Beton in betonski izdelki	Concrete and concrete products
-----------	---------------------------	--------------------------------

kSIST prEN 15037-3:2008

en,de

ITeH STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/7dec74a9-2d1e-4b16-9184-6db86c0514e/sist-en-15037-3-2009>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

FINAL DRAFT
prEN 15037-3

July 2008

ICS 91.100.30

English Version

Precast concrete products - Beam-and-block floor systems - Part 3: Clay blocks

Produits préfabriqués en béton - Systèmes de planchers à poutrelles et entrevous - Partie 3: Entrevous en terre cuite

Betonfertigteile - Balkendecken mit Zwischenbauteilen - Teil 3: Keramische Zwischenbauteile

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 229.

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.

This draft European Standard was established by CEN 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 CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Warning : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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

Contents

Page

The numbering of clauses is strictly related to EN 13369:2004 Common rules for precast concrete products, at least for the first three digits. When a clause of EN 13369:2004 is not relevant or included in a more general reference of this standard, its number is omitted and this may result in a gap on numbering.

Foreword	4
Introduction	6
1 Scope	7
2 Normative references	7
3 Terms and definitions	8
4 Requirements	11
4.1 Material requirements	11
4.2 Production requirements	11
4.3 Finished product requirements	11
4.3.1 Geometrical properties	11
4.3.2 Surface characteristics	14
4.3.3 Mechanical resistance	15
4.3.4 Resistance and reaction to fire	16
4.3.5 Acoustic properties	16
4.3.6 Thermal properties	17
4.3.7 Durability	17
4.3.8 Other requirements	17
5 Test methods	18
5.1 Measuring of dimensions and surface characteristics	18
5.1.1 Block dimensions	18
5.1.2 Width and depth of the nib	19
5.1.3 Thickness of the top flange of resisting and semi-resisting blocks	20
5.1.4 Percentage of voids of the top flange of resisting blocks	20
5.1.5 Flatness of the underside	20
5.1.6 Straightness of the nib edges	20
5.1.7 Surface characteristics	20
5.2 Mechanical strength	20
5.2.1 Punching-bending strength	20
5.2.2 Bending strength	22
5.2.3 Longitudinal compression test for resisting and semi-resisting clay blocks	24
5.2.4 Transverse testing of resisting and semi-resisting clay blocks	26
6 Evaluation of conformity	27
6.1 General	27
6.2 Initial type tests	27
6.3 Factory production control	28
6.3.1 General	28
6.3.2 Finished product test	28
7 Marking	28
8 Technical documentation	28
Annex A (normative) Sampling for initial type testing and for independent testing of consignments	29
A.1 General	29
A.2 Sampling procedure	29

A.2.1	Random sampling	29
A.2.2	Representative sampling	29
A.2.3	Dividing the sample.....	30
A.2.4	Number of blocks required per test.....	30
Annex B (normative) Inspection schemes for clay blocks		31
Annex ZA (informative) Clauses of this European Standard addressing the provisions of the EU		
	Construction Products Directive	33
ZA.1	Scope and relevant characteristics	33
ZA.2	Procedure for attestation of conformity of clay blocks for beam-and-block floor systems	35
ZA.2.1	System of attestation of conformity	35
ZA.2.2	EC Certificate and Declaration of conformity.....	35
ZA.3	CE marking and labelling.....	36
ZA.3.1	General	36
ZA.3.2	Simplified label	37
ZA.3.3	Information to be provided with the CE marking	38
ZA.3.4	CE marking and labelling with reference to a manufacturer's website	39
Bibliography.....		42

ITEH STANDARD PREVIEW
(standards.iteh.ai)

Full standard:
<https://standards.iteh.ai/catalog/standards/sist/7dec74a9-2d1e-4b16-9184-6d1b86c0514e/sist-en-15037-3-2009>

Foreword

This document (prEN 15037-3:2008) has been prepared by Technical Committee CEN/TC 229 “Precast concrete products”, the secretariat of which is held by AFNOR. This document was examined by and agreed with a joint working party appointed by the Liaison Group CEN/TC 229 – CEN/TC 250, particularly for its compatibility with structural Eurocodes.

This document is currently submitted to the Unique Acceptance Procedure.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EC Directive(s).

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

European standard for beam-and-block floor system is made of 3 parts:

- EN 15037-1, *Precast concrete products — Beam-and-block floor systems — Part 1: Beams;*
- EN 15037-2, *Precast concrete products — Beam-and-block floor systems — Part 2: Concrete blocks;*
- EN 15037-3, *Precast concrete products — Beam-and-block floor systems — Part 3: Clay blocks.*

This European Standard is one of a series of product standards for precast concrete products.

For common aspects of concrete products, reference is made to EN 13369, from which also the relevant requirements of the EN 206-1 are taken.

The references to EN 13369 by CEN/TC 229 product standards are intended to make them homogeneous and to avoid repetitions of similar requirements.

Eurocodes are taken as a common reference for design aspects. The installation of some structural precast concrete products is dealt with by ENV 13670-1, which has at the moment the status of a European prestandard. In all countries it can be accompanied by alternatives for national application and it should not be treated as a European Standard.

The program of standards for structural precast concrete products comprises the following standards, in some cases consisting on several parts:

- EN 1168, *Precast concrete products — Hollow core slabs*
- EN 12794, *Precast concrete products — Foundation piles*
- EN 12843, *Precast concrete products — Masts and poles*
- EN 13224, *Precast concrete products — Ribbed floor elements*
- EN 13225, *Precast concrete products — Linear structural elements*
- EN 13693, *Precast concrete products — Special roof elements*
- EN 13747, *Precast concrete products — Floor plates for floor systems*
- EN 13978, *Precast concrete products — Precast concrete garages*

EN 14843, *Precast concrete products — Stairs*

EN 14844, *Precast concrete products — Box culverts*

EN 14991, *Precast concrete products — Foundation elements*

EN 14992, *Precast concrete products — Wall elements*

EN 15037-1, *Precast concrete products — Beam-and-block floor systems — Part 1: Beams*

EN 15050, *Precast concrete products — Bridge elements*

EN 15258, *Precast concrete products — Retaining wall elements.*

This European Standard defines in Annex ZA the application methods of CE marking to products designed using the relevant EN Eurocodes (EN 1992-1-1:2004 and EN 1992-1-2:2004). Where, in default of applicability conditions of EN Eurocodes to the works of destination, design provisions other than EN Eurocodes are used for mechanical strength and/or fire resistance, the conditions to affix CE marking to the product are described in ZA.3.

TEh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/7dec74a9-2d1e-4b16-9184-6d1b86c0514e/sist-en-15037-3-2009>

Introduction

The evaluation of conformity refers to the clay blocks which are supplied to the market and covers all the production operations carried out in the factory.

For design rules reference is made to EN 1992-1-1:2004. Additional complementary rules are provided where necessary.

ITeH STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/7dec74a9-2d1e-4b16-9184-6d1b86c0514e/sist-en-15037-3-2009>

1 Scope

This European Standard deals with the requirements and the basic performance criteria for blocks made in clay, used in conjunction with precast concrete beams in compliance with EN 15037-1, with or without cast-in-situ concrete for the construction of beam-and-block floor and roof systems.

Examples of typology of floor and roof systems are given in Annex B of EN 15037-1:2007.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 771-1:2003, *Specification for masonry units — Part 1: Clay masonry units*

EN 772-3, *Methods of test for masonry units — Part 3: Determination of net volume and percentage of voids of clay masonry units by hydrostatic weighing*

EN 772-9, *Methods of test for masonry units — Part 9: Determination of volume and percentage of voids and net volume of clay calcium silicate masonry units by sand filling*

EN 772-13, *Methods of test for masonry units — Part 13: Determination of net and gross dry density of masonry units (except for natural stone)*

EN 772-19, *Methods of test for masonry units — Part 19: Determination of moisture expansion of large horizontally perforated clay masonry units*

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

EN 1365-2:1999, *Fire resistance tests for loadbearing elements — Part 2: Floors and roofs*

EN 12390-4:2000, *Testing hardened concrete — Part 4: Compressive strength — Specification for testing machines*

EN 13369:2004, *Common rules for precast concrete products*

EN 13501-1:2007, *Fire classification of construction products and buildings elements — Part 1: Classification using test data from reaction to fire tests*

EN 15037-1:2008, *Precast concrete products — Beam-and-block floor systems — Part 1: Beams*

EN ISO 140-3, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 3: Laboratory measurements of airborne sound insulation of building elements (ISO 140-3:1995)*

EN ISO 140-6, *Acoustics — Measurement of sound insulation in buildings and of building elements — Part 6: Laboratory measurements of impact sound insulation of floors (ISO 140-6:1998)*

EN ISO 717-1, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 1: Airborne sound insulation (ISO 717-1:1996)*

EN ISO 717-2, *Acoustics — Rating of sound insulation in buildings and of building elements — Part 2: Impact sound insulation (ISO 717-2:1996)*

3 Terms and definitions

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

3.1

low non-resisting or non-resisting block

block with no mechanical function in the final floor system (designated LNR or NR)

NOTE Its only mechanical function is that of formwork during the construction of the floor system. Floor systems built with non-resisting blocks always have a cast-in-situ structural topping.

3.2

semi-resisting block

block participating in the transfer of loads to the beams (designated SR)

NOTE In conjunction with a cast-in-situ concrete, it may contribute to the final strength of the system. However, its top flange alone cannot act as a compression slab in the final floor system.

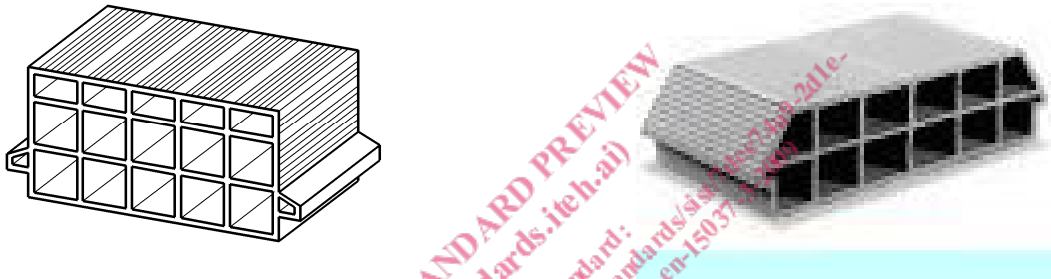


Figure 1 — Examples of semi-resisting clay blocks

3.3

resisting block

block with the same functions as semi-resisting blocks but whose top flange can, under certain conditions, play a role as compression slab in the final floor system (designated RR)

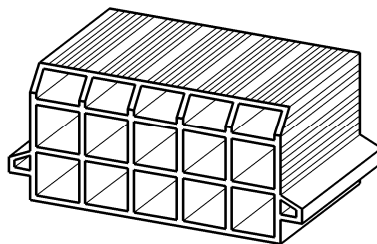


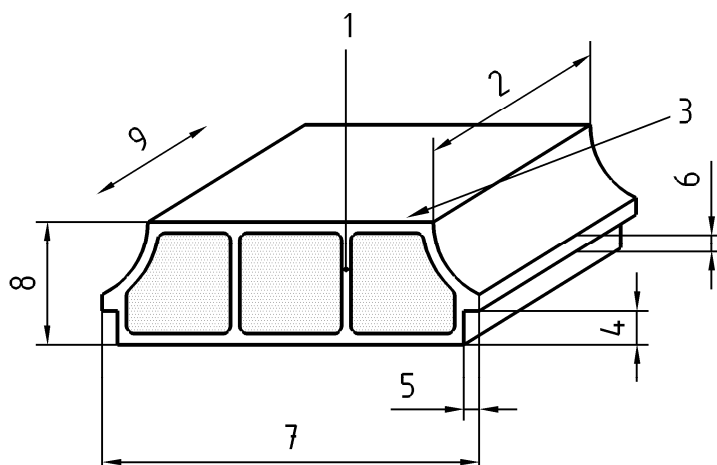
Figure 2 — Example of resisting clay blocks

3.4

longitudinal block

block where the axis of the perforations are parallel to the beam

NOTE An example of a longitudinal block is given in Figure 3.



Key

1	web	6	depth of the nib
2	overall length	7	overall width
3	flange (top part of the block)	8	overall height
4	height to nib	9	direction of the beam
5	width of the nib		

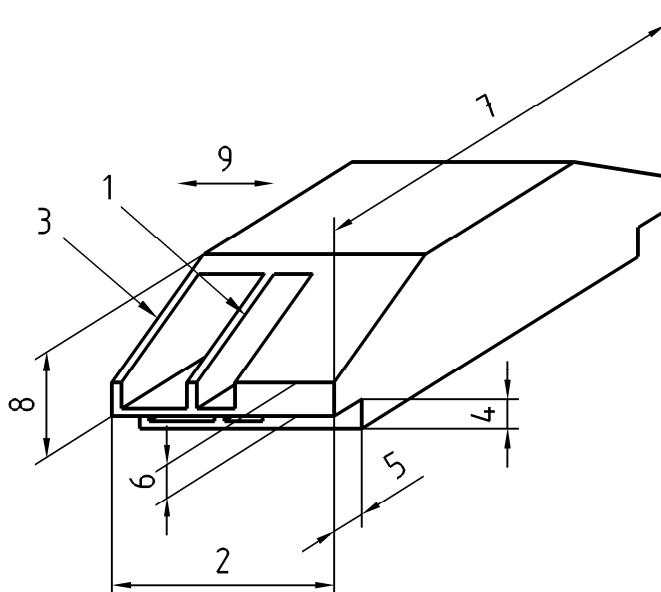
Figure 3 — Example of a longitudinal block

NOTE The flange may be partially opened.

3.5 transverse block

block where the axis of the perforations are perpendicular to the beam

NOTE An example of a transverse block is given in Figure 4.



Key

- | | | | |
|---|--------------------------------|---|-----------------------|
| 1 | web | 6 | depth of the nib |
| 2 | overall length | 7 | overall width |
| 3 | flange (top part of the block) | 8 | overall height |
| 4 | height to nib | 9 | direction of the beam |
| 5 | width of the nib | | |

Figure 4 — Example of a transverse block

NOTE The flange may be partially opened.

3.6 open block

non-resisting or semi-resisting block without top flange

NOTE An example of an open block is given in Figure 5.

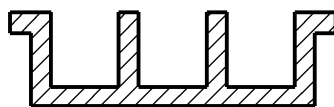


Figure 5 — Example of open block

3.7 nib

shape given to the block so that it will bear on the beam

3.8 gross dry density

mass per unit gross volume after drying to constant mass