Betoonvalmistooted. Tala-plokk-vahelaesüsteemid. Osa 4: Vahtpolüstüreenplokid

Precast concrete products - Beam-and-block floor systems - Part 4: Expanded polystyrene blocks

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 15037-4:2010+A1:2013 sisaldab Euroopa standardi EN 15037-4:2010+A1:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 15037-4:2010+A1:2013 consists of the English text of the European standard EN 15037-4:2010+A1:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 22.05.2013.	Date of Availability of the European standard is 22.05.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 91.100.30

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 15037-4:2010+A1

May 2013

ICS 91.100.30

Supersedes EN 15037-4:2010

English Version

Precast concrete products - Beam-and-block floor systems - Part 4: Expanded polystyrene blocks

Produits préfabriqués en béton - Systèmes de planchers à poutrelles et entrevous - Partie 4: Entrevous en polystyrène expansé

Betonfertigteile - Balkendecken mit Zwischenbauteilen - Teil 4: Zwischenbauteile aus Polystyrolhartschaum

This European Standard was approved by CEN on 1 November 2009 and includes Amendment 1 approved by CEN on 14 March 2013.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN 15037-4:2010+A1:2013: E

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 can result in a gap on numbering.

Foreword

This document (EN 15037-4:2010+A1:2013) has been prepared by Technical Committee CEN/TC 229 “Precast concrete products”, the secretariat of which is held by AFNOR, and was examined by and agreed with a joint working party appointed by the Liaison Group CEN/TC 229-TC 250, particularly for its compatibility with structural Eurocodes.

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 November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document includes Amendment 1, approved by CEN on 2013-03-14.

This document supersedes EN 15037-4:2010.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1〉 〈A1▌.

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 EU Directive(s).

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

EN 15037, *Precast concrete products — Beam-and-block floor systems*, consists of five parts:

— *Part 1: Beams*

— *Part 2: Concrete blocks*

— *Part 3: Clay blocks*

— *Part 4: Expanded polystyrene blocks*

— *Part 5: Lightweight blocks for simple formwork* [1)]

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. In all countries it may 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 European Standards, in some cases consisting of several parts:

EN 1168, *Precast concrete products — Hollow core slabs*

1) To be developed.

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 — Stair*s

EN 14844, *Precast concrete products — Box culverts*

EN 14991, *Precast concrete products — Foundation elements*

EN 14992, *Precast concrete products — Wall elements*

EN 15037, *Precast concrete products — Beam-and-block floor systems*

EN 15050, *Precast concrete products — Bridge elements*

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

According to the CEN/CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

The evaluation of conformity refers to the completed precast elements 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. Additional complementary rules are provided where necessary.

NOTE This European Standard is applied in Europe under different climatic and geographical conditions, different levels of protection and under different, well-established, regional traditions and experience. Classes for EPS blocks have been introduced to cover these situations. Where such general solutions were not possible, the relevant clauses contain permission for the application of national standards or provisions valid in the place of use of the EPS Blocks (see 4.3.3).

1 Scope

This European Standard deals with the requirements and the basic performance criteria for blocks made in expanded polystyrene (EPS), 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 systems.

EPS block may be totally made in EPS or combined with different materials such as plaster or wood wool.

If EPS is combined with other materials, these materials should not contribute to more than 50 % of the mechanical resistance of the block. If not, the block is covered by EN 15037-5, *Precast concrete products — Beam-and-block floor systems — Part 5: Lightweight blocks for simple formwork.*

Examples of typology of floor systems are given in Annex B of EN 15037-1:2008.

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 826, *Thermal insulating products for building applications — Determination of compression behaviour*

EN 1365-2, *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 12667, *Thermal performance of building materials and products — Determination of thermal resistance by means of guarded hot plate and heat flow meter methods — Products of high and medium thermal resistance*

EN 13163:2008, *Thermal insulation products for buildings — Factory made products of expanded polystyrene (EPS) — Specification*

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

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

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

EN ISO 10211, *Thermal bridges in building construction — Heat flows and surface temperatures — Detailed calculations (ISO 10211:2007)*

〚A1〉 EN ISO 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2)* 〈A1〛

3 Terms and definitions

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

3.1
EPS block type R1
block with no mechanical function in the final floor system

NOTE Its only mechanical function is that of formwork during the construction of the floor system.