

Betoonvalmistooted. Sillaelemendid

Precast concrete products - Bridge elements

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 15050:2007 sisaldab Euroopa standardi EN 15050:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.06.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 15050:2007 consists of the English text of the European standard EN 15050:2007.</p> <p>This document is endorsed on 21.06.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European Standard applies to elements produced in a factory and to precast concrete structural elements used in bridge construction, for example deck elements, abutments, elements for piers and precast arches. Normal weight concrete elements are considered, both reinforced and prestressed; their use can be on road bridges, railway bridges and footbridges. Deck elements include both single elements from which the deck may be composed (beams, slabs, ribbed or cellular elements) and elements consisting of a segment of the entire deck.</p>	<p>Scope:</p> <p>This European Standard applies to elements produced in a factory and to precast concrete structural elements used in bridge construction, for example deck elements, abutments, elements for piers and precast arches. Normal weight concrete elements are considered, both reinforced and prestressed; their use can be on road bridges, railway bridges and footbridges. Deck elements include both single elements from which the deck may be composed (beams, slabs, ribbed or cellular elements) and elements consisting of a segment of the entire deck.</p>
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ICS 91.100.30, 93.040

Võtmesõnad:

ICS 91.100.30; 93.040

English Version

Precast concrete products - Bridge elements

Produits préfabriqués en béton - Eléments de ponts

Betonfertigteile - Fertigteile für Brücken

This European Standard was approved by CEN on 28 February 2007.

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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 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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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 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

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Foreword

This document (EN 15050:2007) 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-CEN/TC250, 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 2007, and conflicting national standards shall be withdrawn at the latest by February 2009.

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.

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

For common aspects reference is made to EN 13369: *Common rules for precast products*, from which also the relevant requirements of the EN 206-1: *Concrete — Part 1: Specification, performances, production and conformity* 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: *Execution of concrete structures — Part 1: Common rules*, 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 shall not be treated as a European Standard.

The programme of standards for structural precast concrete products comprises the following standards, in some cases consisting of 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 15050, *Precast concrete products — Bridge elements*

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

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

This standard defines in Annex ZA the application methods of CE marking to products designed using the relevant EN Eurocodes (EN 1992-1-1 and EN 1992-1-2). 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.3.4.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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.

Introduction

The evaluation of conformity given in this European Standard refers to the completed precast concrete elements for bridges that are supplied to the market and covers all the production operations carried out in the factory.

For design rules and resistance to fire reference is made to EN 1992-1-1 and EN 1992-1-2. Additional complementary rules are provided where necessary.

In 4.3.3 and 4.3.4 this European Standard includes specific provisions resulting from the application of EN 1992-1-1, EN 1998-1, EN 1992-1-2 and EN 1992-2 rules made specific for the concerned product. The use of these provisions is consistent with a design of works made with EN 1992-1-1, EN 1992-1-2, and EN 1992-2.

1 Scope

This European Standard applies to precast concrete structural elements produced in a factory and used in bridge construction, for example deck elements, abutments, elements for piers and precast arches.

Normal weight concrete elements are considered, both reinforced and prestressed; their use can be on road bridges, railway bridges and footbridges.

Deck elements include both single elements from which the deck may be composed (beams, slabs, ribbed or cellular elements) and elements consisting of a segment of the entire deck.

The elements for abutments are precast elements able to support vertical and horizontal actions applied by the deck and the earth pressure due to the filling material.

The pier elements can consist of a segment of the pier or, for small heights, the entire pier.

Some examples of elements dealt with are shown in Annex A.

The durability aspects are also considered.

This European Standard makes reference to precast elements produced in a factory or near the construction site in a place protected from adverse weather conditions. It is assumed that if the elements are not manufactured in a factory, the production conditions assure the same level of quality control as in a factory. It is assumed that the production place is protected from rain, sunshine and wind.

Some of the elements are also treated in other European Standards (e.g. beams, slabs). This European Standard deals with the specific aspects related to the use of these elements in bridge construction.

Foundation piles, barriers, bumpers, guards and box culverts are out the scope of this European Standard.

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 206-1, *Concrete — Part 1: Specification, performance, production and conformity*

EN 1992-1-1:2004, *Eurocode 2: Design of concrete structures — Part 1-1: General rules and rules for buildings*

EN 1992-1-2, *Eurocode 2: Design of concrete structures — Part 1-2: General rules — Structural fire design*

EN 1992-2:2005, *Eurocode 2 — Design of concrete structures — Concrete bridges — Design and detailing rules*

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