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PRECAST CONCRETE PRODUCTS - FOUNDATION ELEMENTS

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EUROPEAN STANDARD

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EN 14991

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English Version

Precast concrete products - Foundation elements

Produits préfabriqués en béton - Éléments de fondation

Betonfertigteile - Gründungselemente

This European Standard was approved by CEN on 13 January 2007.

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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 14991:2007) 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-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of an identical text or by endorsement, at the latest by October 2007, and conflicting national standards shall be withdrawn at the latest by January 2009.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 Construction Products Directives (89/106/EEC).

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this document.

This standard 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 concrete products*, from which also the relevant requirements of the EN 206-1: *Concrete — Part 1: Specification, performance, 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 an 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 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 13747, *Precast concrete products — Floor plates for floor systems*

— EN 15037 (all parts), *Precast concrete products —– Beams for beam-and-block floor systems*

— EN 13224, *Precast concrete products — Ribbed floor elements*

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

— EN 14992, *Precast concrete products — Wall elements*

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

— EN 13693, *Precast concrete products — Special roof elements*

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— EN 14844, *Precast concrete products — Box culverts*

— EN 13978-1, *Precast concrete products — Precast concrete garages —- Part 1: Requirements for reinforced garages monolithic or consisting of single sections with room dimensions*

— EN 14991, *Precast concrete products — Foundation elements*

— EN 15050, *Precast concrete products — Bridge elements*

— EN 14843, *Precast concrete products — Stairs*

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 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, the conditions to affix CE marking to the product are described in ZA.3.5.

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.

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Introduction

The evaluation of conformity given in this European Standard 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.

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1 Scope

This European Standard deals with the requirements and the basic performance criteria and specifies where applicable minimum values for precast foundation elements (comprising columns with integrated foundation elements, pocket foundation elements, sockets) made of reinforced normal weight concrete for structure of buildings according to EN 1992-1-1.

This European Standard covers terminology, performance criteria, tolerances, relevant physical properties and special aspects of transport and erection.

This European Standard does not cover the bearing capacity determined by testing.

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

EN 1997-1:2004, *Eurocode 7: Geotechnical design — Part 1: General rules*

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

3 Terms and definitions

For the purpose of this document, the terms and definitions given in Clause 3 of EN 13369:2004 and the following apply.

3.1
pocket foundation element
precast reinforced concrete unit capable of transferring vertical actions, bending moments and horizontal shears from structural components of the structure (e.g. columns, foundation beams, walls) to the soil (see Figures B.2 to B.4)

3.2
column with integrated foundation element
precast foundation element forming part of a column and permanently fixed to it

3.3
socket
either vertical part of a pocket foundation element (see Figures B.3 and B.4) or separate precast unit corresponding to that part (see Figure B.1)

3.4
footing
horizontal part of the pocket foundation element

NOTE It can either be a part of a pocket unit or be cast on site.

3.5
pocket with keyed surfaces
pocket expressly wrought with indentations or keys at the vertical internal surfaces of the socket

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