

## **Betoonvalmistooted. Mastid ja postid**

Precast concrete products - Masts and poles

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12843:2004 sisaldab Euroopa standardi EN 12843:2004 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 23.11.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12843:2004 consists of the English text of the European standard EN 12843:2004.</p> <p>This document is endorsed on 23.11.2004 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><b>Käsitlusala:</b></p> <p>This Standard specifies requirements for precast concrete poles (also commonly called masts) (either all of a piece or composed of elements), reinforced and/or prestressed as structural elements; they may be hollow or solid and may receive or include additional components (e.g. cross-arms, platforms etc.), inserts and connectors. Additional elements may be connected to pole elements.</p>	<p><b>Scope:</b></p> <p>This Standard specifies requirements for precast concrete poles (also commonly called masts) (either all of a piece or composed of elements), reinforced and/or prestressed as structural elements; they may be hollow or solid and may receive or include additional components (e.g. cross-arms, platforms etc.), inserts and connectors. Additional elements may be connected to pole elements.</p>
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ICS 29.240.20, 91.100.30

Võtmesõnad:

ICS 91.100.30; 29.240.20

English version

## Precast concrete products - Masts and poles

Produits préfabriqués en béton - Mâts et poteaux

Betonfertigteile - Maste

This European Standard was approved by CEN on 24 June 2004.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

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The numbering of clauses is strictly related to EN 13369, *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 12843:2004) 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/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 March 2005, and conflicting national standards shall be withdrawn at the latest by June 2006.

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 Construction Products Directive(89/106/EEC) of European Union (EU)..

For relationship with EU Directive(s), 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 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 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 of several parts :

- EN 1168, *Precast concrete products - Hollow core slabs*
- prEN 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*
- prEN 13747, *Precast concrete products – Floor plates for floor systems*
- prEN 13978, *Precast concrete products – Precast concrete garages*
- prEN 14843, *Precast concrete products - Stairs*
- prEN 14844, *Precast concrete products – Box culverts*

- prEN 14991, *Precast concrete products – Foundation elements*
- prEN 14992, *Precast concrete products – Wall elements: Products properties and performances*
- prEN 15037, *Precast concrete products – Beams for beam-and-block floor systems*

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

## Introduction

Products covered by the present standard are structural units mainly designed to resist relevant actions resulting from their specific use.

It is in line with the relevant general requirements (EN 1992-1-1 and EN 1992-1-2, EN 13369, EN 206-1, prEN 50423:2004).

It gives, where applicable, requirements related to ambient condition and exposure classes for concrete covers.

In general EN 1991 1-1, Eurocode 1, Actions on structures is applicable for actions, but specific uses may require additional information (e.g. wind turbines, overhead electrical lines, overhead electrical lines for railways, trams and similar).

In Clauses 4.3.3 and 4.3.8 this standard includes specific provisions resulting from the application of EN 1992-1-1 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.



## 1 Scope

This document specifies requirements for precast concrete poles (also commonly called masts) (either all of a piece or composed of elements), reinforced and/or prestressed as structural elements; they may be hollow or solid and may receive or include additional components (e.g. cross-arms, platforms etc.), inserts and connectors. Additional elements may be connected to pole elements.

Structures made from such elements in mono- or multi-legged form may be used for :

- overhead electrical lines ;
- telecommunication lines ;
- overhead electrical lines for railways, trams and similar ;
- supports for lighting ;
- supports for loudspeaker installation ;
- antenna and telecommunication poles ;
- supports for wind turbines ;
- and similar installations.

This document does not cover lighting columns for use in traffic circulation areas.

## 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 12390-5, *Testing hardened concrete – Part 5 : Flexural strength of test specimens.*

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1992-1-1:2004, EN 13369:2004 and the following apply.

### 3.1

#### **pole (or mast)**

upright slender structure fixed rigidly at the foot

### 3.2

#### **foot**

lower end of a pole