

Lighting columns - Part 3-3: Design and verification - Verification by calculation

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 40-3-3:2003 sisaldab Euroopa standardi EN 40-3-3:2003 ingliskeelset teksti. Käesolev dokument on jõustatud 14.08.2003 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 40-3-3:2003 consists of the English text of the European standard EN 40-3-3:2003. This document is endorsed on 14.08.2003 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.
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Käsitlusala: This European Standard specifies the requirements for the verification of the design of lighting columns by calculation. It applies to post top columns not exceeding 20 m height for post top lanterns and to lighting columns with brackets not exceeding 18 m height for side entry lanterns	Scope: This European Standard specifies the requirements for the verification of the design of lighting columns by calculation. It applies to post top columns not exceeding 20 m height for post top lanterns and to lighting columns with brackets not exceeding 18 m height for side entry lanterns
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ICS 91.160.20

Võtmesõnad: concrete poles, dimensioning, lamp posts, lighting columns, loading, masts, mathematical calculations, specification (approval), specifications, steel towers

ICS 91.160.20

English version

Lighting columns - Part 3-3: Design and verification - Verification by calculation

Candélabres d'éclairage public - Conception et vérification -
Partie 3.3: Vérification par calcul

Lichtmaste - Teil 3-3: Bemessung und Nachweis -
Rechnerischer Nachweis

This European Standard was approved by CEN on 17 January 2003.

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 Management Centre 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 Management Centre has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 40-3-3:2003) has been prepared by Technical Committee CEN/TC 50 "*Lighting columns and spigots*", the secretariat of which is held by BSI.

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 December 2003, and conflicting national standards shall be withdrawn at the latest by December 2003.

There are seven parts to this standard as follows:

Part 1: Definitions and terms

Part 2: General requirements and dimensions

Part 3-1: Design and verification — Specification for characteristic loads

Part 3-2: Design and verification — Verification by testing

Part 3-3: Design and verification — Verification by calculation

Part 4: Requirements for reinforced and prestressed concrete lighting columns

Part 5: Requirements for steel lighting columns

Part 6: Requirements for aluminium lighting columns

Part 7: Requirements for fibre reinforced polymer composite lighting columns

Annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard specifies the requirements for the verification of the design of lighting columns by calculation. It applies to post top columns not exceeding 20 m height for post top lanterns and to lighting columns with brackets not exceeding 18 m height for side entry lanterns.

The calculations used in this standard are based on limit state principles, where the effects of factored loads are compared with the relevant resistance of the structure. Two limit states are considered:

- a) the ultimate limit state, which corresponds to the load-carrying capacity of the lighting column;
- b) the serviceability limit state, which relates to the deflection of the lighting column in service.

NOTE In following this approach, simplifications appropriate to lighting columns have been adopted. These are:

- 1) the calculations are applicable to circular and regular octagonal cross-sections;
- 2) the number of separate partial safety factors have been reduced to a minimum;
- 3) serviceability partial safety factors have a value equal to unity.

The requirements for lighting columns made from materials other than concrete, steel, aluminium or fibre reinforced polymer composite (for example wood, plastic and cast iron) are not specifically covered in this standard.

This standard includes performance requirements for horizontal loads due to wind. Passive safety and the behaviour of a lighting column under the impact of a vehicle are not included, this group of lighting columns will have additional requirements (see prEN 40-2).

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 40-1:1991, *Lightning columns;- Part 1: Definitions and terms.*

EN 40-3-1, *Lighting columns — Part 3-1: Design and verification — Specification for characteristic loads.*

ENV 1993-1-1, *Eurocode 3: Design of steel structures - Part 1-1: General rules and rules for buildings.*

ENV 1999-1-1, *Eurocode 9: Design of aluminium structures - Part 1-1: General rules - General rules and rules for buildings.*