



# SLOVENSKI STANDARD SIST EN 40-6:2001

01-april-2001

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## Drogovi za razsvetljavo - 6. del: Specifikacije za aluminijaste drogove za razsvetljavo

Lighting columns - Part 6: Specification for aluminium lighting columns

Lichtmaste - Teil 6: Regeln für Maste aus Aluminium

Candélabres d'éclairage public - Partie 6: Spécifications pour les candélabres d'éclairage public en aluminium

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Ta slovenski standard je istoveten z: **EN 40-6:2000**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 40-6**

April 2000

ICS 93.080.40

Supersedes EN 40-6:1982, EN 40-3:1982  
and EN 40-4:1982

English version

## Lighting columns - Part 6: Specification for aluminium lighting columns

Candélabres d'éclairage public - Partie 6: Spécifications pour les candélabres d'éclairage public en aluminium

Lichtmaste - Teil 6: Regeln für Maste aus Aluminium

This European Standard was approved by CEN on 16 July 1999.

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

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

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**Contents**

	Page
Foreword	3
1 Scope	4
2 Normative references	4
3 Definitions	5
4 Materials	5
5 Dimensions	6
6 Design and design verification	6
7 Welding	6
8 Joints	7
9 Impact resistance	7
10 Internal finish and sharp edges	8
11 Corrosion protection	8
12 Marking	8
13 Conformity control	9
14 Acceptance criteria	12
15 Re-testing	14
Annex A (informative) Corrosion protection for aluminium lighting columns	15
Annex B (informative) Recommendations for storage and installation	16

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AUTORISATION REPRODUCTION

## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 50 "Lighting columns and spigots", the secretariat of which is held by BSI.

This European Standard replaces EN 40-6:1982, EN 40-3:1982 and EN 40-4:1982.

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 2000, and conflicting national standards shall be withdrawn at the latest by October 2000.

This European Standard 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).

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, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## iTeh STANDARD PREVIEW

This European Standard is the sixth in a series relating to specifications for lighting columns. There will be six Parts to this standard as follows:

- Part 1: Definitions and terms [SIST EN 40-6:2001](https://standards.iteh.ai/catalog/standards/sist/0f33a000-d622-47bd-aaa8-680b5b0bda07/sist-en-40-6-2001)
- Part 2 : General requirements and dimensions
- Part 3 : Design and verification
- 3-1: Specification for characteristic loads
  - 3-2: Verification by testing
  - 3-3: Verification by calculation
- Part 4 : Specifications for reinforced and prestressed concrete lighting columns
- Part 5 : Specifications for steel columns
- Part 6 : Specifications for aluminium columns

## 1 Scope

This European Standard specifies requirements for aluminium lighting columns. It includes materials and conformity control. It applies to post top columns not exceeding 20 m height for post top lanterns and to columns with brackets not exceeding 18 m height for side entry lanterns.

This European Standard specifies performance related to the essential requirement of resistance to horizontal (wind) loads, measured according to prEN 40-3. Passive safety and the behaviour of a column under the impact of a vehicle are not included in this standard. 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.

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EN 40-1	Lighting columns - Part 1: Definitions and terms SIST EN 40-6:2001
prEN 40-2:1999	Lighting columns - Part 2: General requirements and dimensions <a href="https://standards.iteh.ai/catalog/standards/sist/0f33a009-d622-47bd-aaa8-680b5b0bd407/sist-en-40-6-2001">https://standards.iteh.ai/catalog/standards/sist/0f33a009-d622-47bd-aaa8-680b5b0bd407/sist-en-40-6-2001</a>
EN 40-3-1	Lighting columns - Design and verification - Part 3-1: Specification for characteristic loads.
EN 40-3-2	Lighting columns - Design and verification - Part 3-2: Verification by testing.
prEN 40-3-3	Lighting columns - Design and verification - Part 3-3: Verification by calculation.
EN 287-2	Approval testing of welders for fusion welding. Aluminium and aluminium alloys
EN 288-1	Specification and approval of welding procedures for metallic materials. General rules for fusion welding
EN 288-2	Welding procedures specification for arc welding
EN 288-4	Welding procedure tests for the arc welding of aluminium and its alloys
EN 288-8	Approval by a pre-production welding test

EN 485-3	Specification for aluminium and aluminium alloys. Sheet, strip and plates. Tolerances on shape and dimensions for hot rolled products.
EN 485-4	Tolerances on shape and dimensions for cold rolled products
EN 755-7	Aluminium and aluminium alloys. Extruded rod/bar, tube and profiles. Seamless tubes, tolerances on dimension and form.
EN 755-8	Porthole tubes, tolerances on dimensions and form.
EN 970	Non-destructive examination of fusion welds- Visual examination
EN 1011-1	Welding - Recommendations for welding of metallic materials – General guidance for arc welding
prEN 1011-4	Welding - Recommendations for welding of metallic materials - General guidance for arc welding of aluminium and aluminium alloys
EN 1706	Aluminium and aluminium alloys - Castings - chemical composition and mechanical properties
EN 10025	Specification for hot rolled products of non-alloy structural steels and their technical delivery conditions <b>ITIH STANDARD PREVIEW</b> <b>(standards.iteh.ai)</b>
EN 10204	Metallic products : Types of inspection documents SIST EN 40-6:2001
EN 50102	Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code) <a href="https://standards.iteh.ai/catalog/standards/sist/0f33a000-d622-47bd-aaa8-68063805baa0/sist-en-40-6-2001">https://standards.iteh.ai/catalog/standards/sist/0f33a000-d622-47bd-aaa8-68063805baa0/sist-en-40-6-2001</a>

### 3 Definitions

For the purposes of this standard, definitions given in EN 40-1 apply.

### 4 Materials

#### 4.1 Aluminium

Materials used shall comply with one of the following standards: EN 485-3, EN 485-4, EN 755-7, EN 755-8 and EN 1706

Electrolytic action between the foundation bolts and the flange plate shall be prevented by insulation or physical separation.

#### 4.2 Foundation bolts

The minimum mechanical properties of the steel used for foundation bolts shall comply with the requirements of EN 10025 grade S 235 JR.

## 5 Dimensions

Dimensions shall be in accordance with prEN 40-2.

## 6 Design and design verification

The column shall be designed to sustain safely the dead loads and the wind loads specified in EN 40-3-1.

The structural design of a lighting column shall be verified either by calculation in accordance with prEN 40-3-3 or by testing in accordance with EN 40-3-2.

## 7 Welding

### 7.1 Welding process

Arc welding of aluminium and its alloys shall be in accordance with EN 1011-1 and prEN 1011-4.

### 7.2 Welding procedures

Welding procedures shall comply with EN 288-1 and EN 288-2.

Written procedures shall be provided for the main structural joints which shall include where relevant the flange plate joint, the base compartment to shaft joint, the door reinforcement, any intermediate column joint, the column to bracket joint and the column seam weld when this is carried out at the time of column manufacture.

Welding procedures shall be approved in accordance with EN 288-8. Pre-production test pieces shall represent the main structural joints.

Welding procedures shall be verified by testing to the requirements of EN 288-4. The welding consumables and procedures used shall be such that the mechanical properties of the as-deposited weld metal will not be less than the respective minimum values required by the designer's specifications for the parent metal to be welded. Verification shall be by a welding co-ordinator.

Procedures shall be reviewed and reapproved where necessary after a period of seven years.

### 7.3 Welding personnel

Welders shall be tested for each approved procedure to which they shall be required to work (see 7.2). Test pieces shall be as used in the original procedure tests. The approval range shall be in accordance with that for the original procedure. In all other respects the requirements of EN 287-2 shall apply.



## 8 Joints

### 8.1 General

All joints shall be designed to the requirements specified in clause 6.

NOTE 1: Design of joint details should avoid moisture retention and corrosion.

### 8.2 Friction joints

When joints are made by drawing parts together to form a friction joint the additional stresses in the connection shall be included in the design.

### 8.3 Welded joints

Welded joints shall comply with the requirements of clause 7.

## 9 Impact resistance

A type test shall be carried out on each type of column base, or part, provided that each end of the part extends at least 0,3 m above and below the door opening. The test shall comply with an impact protection category of IK08 as specified in EN 50102 with the door fitted.

The test equipment shall be either impact pendulum hammer or vertical free fall hammer.

The number of impacts shall be five and shall be applied around the circumference at the mid height of the door. For circular columns these shall be equi-spaced around the remaining circumference excluding the door. For octagonal columns these shall be on each of the adjacent faces excluding the door.

After testing there shall be no indentation greater than 3 mm in depth when measured with a profile gauge. The test validates those products of which the outside diameter (or flat dimension) is equal to or less than the diameter being tested, with the same wall thickness and material strength.

NOTE 1 A type is defined by the shape, the dimensions and thickness and material of the section at mid door height.

NOTE 2 For sections other than circular or octagonal the provisions defined above apply.