



# SLOVENSKI STANDARD SIST EN ISO 80000-11:2013

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Nadomešča:

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**Veličine in enote - 11. del: Značilna števila (ISO 80000-11:2008)**

Quantities and units - Part 11: Characteristic numbers (ISO 80000-11:2008)

Größen und Einheiten - Teil 11: Kenngrößen der Dimension 1 (ISO 80000-11:2008)

Grandeurs et unités - Partie 11: Nombres caractéristiques (ISO 80000-11:2008)

**Ta slovenski standard je istoveten z: EN ISO 80000-11:2013**

**ICS:**

01.060

Veličine in enote

Quantities and units

**SIST EN ISO 80000-11:2013**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN ISO 80000-11**

April 2013

ICS 01.060

English Version

**Quantities and units - Part 11: Characteristic numbers (ISO  
80000-11:2008)**

Grandeurs et unités - Partie 11: Nombres caractéristiques  
(ISO 80000-11:2008)

Größen und Einheiten - Teil 11: Kenngrößen der Dimension  
1 (ISO 80000-11:2008)

This European Standard was approved by CEN on 14 March 2013.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

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## Foreword

The text of ISO 80000-11:2008 has been prepared by Technical Committee ISO/TC 12 “Quantities and units” of the International Organization for Standardization (ISO) and has been taken over as EN ISO 80000-11:2013.

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 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

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, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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The text of ISO 80000-11:2008 has been approved by CEN as EN ISO 80000-11:2013 without any modification.

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ISO  
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2008-12-15

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**Quantities and units —  
Part 11:  
Characteristic numbers**

*Grandeurs et unités —*

*Partie 11: Nombres caractéristiques*

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Reference number  
ISO 80000-11:2008(E)



## ISO 80000-11:2008(E)

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## ISO 80000-11:2008(E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 80000-11 was prepared by Technical Committee ISO/TC 12, *Quantities, units, symbols, conversion factors* in co-operation with IEC/TC 25, *Quantities and units*.

This first edition of ISO 80000-11 cancels and replaces the third edition of ISO 31-12:1992 and ISO 31-12:1992/Amd.1:1998. The major technical changes from the previous standard are the following:

— the *normative references* have been changed.

ISO 80000 consists of the following parts, under the general title *Quantities and units*:

- *Part 1: General*
- *Part 2: Mathematical signs and symbols to be used in the natural sciences and technology*
- *Part 3: Space and time*
- *Part 4: Mechanics*
- *Part 5: Thermodynamics*
- *Part 7: Light*
- *Part 8: Acoustics*
- *Part 9: Physical chemistry and molecular physics*
- *Part 10: Atomic and nuclear physics*
- *Part 11: Characteristic numbers*
- *Part 12: Solid state physics*

IEC 80000 consists of the following parts, under the general title *Quantities and units*:

- *Part 6: Electromagnetism*
- *Part 13: Information science and technology*
- *Part 14: Telebiometrics related to human physiology*

## Introduction

### 0.1 Arrangements of the tables

All characteristic numbers are quantities of *dimension one*. Hence the coherent unit of all characteristic numbers is the number one, symbol 1. This unit is not repeated in the following tables.

Where the numbering of an item has been changed in the revision of a part of ISO 31, the number in the preceding edition is shown in parenthesis under the new number for the quantity; a dash is used to indicate that the item in question did not appear in the preceding edition.

### 0.2 Tables of quantities

The names in English and in French of the most important quantities within the field of this document are given together with their symbols and, in most cases, their definitions. These names and symbols are recommendations. The definitions are given for identification of the quantities in the International System of Quantities (ISQ), listed in the tables; they are not intended to be complete.

The scalar, vectorial or tensorial character of quantities is pointed out, especially when this is needed for the definitions.

In most cases, only one name and only one symbol for the quantity are given; where two or more names or two or more symbols are given for one quantity and no special distinction is made, they are on an equal footing. When two types of italic letters exist (for example as with  $\vartheta$  and  $\theta$ ;  $\varphi$  and  $\phi$ ;  $a$  and  $\alpha$ ;  $g$  and  $g$ ), only one of these is given. This does not mean that the other is not equally acceptable. It is recommended that such variants should not be given different meanings. A symbol within parenthesis implies that it is a reserve symbol, to be used when, in a particular context, the main symbol is in use with a different meaning.

In this English edition, the quantity names in French are printed in an italic font, and are preceded by *fr.* The gender of the French name is indicated by (m) for masculine and (f) for feminine, immediately after the noun in the French name.

### 0.3 Remark on units for quantities of dimension one, or dimensionless quantities

The coherent unit for any quantity of dimension one, also called a dimensionless quantity, is the number one, symbol 1. When the value of such a quantity is expressed, the unit symbol 1 is generally not written out explicitly.

EXAMPLE 1 Refractive index  $n = 1,53 \times 1 = 1,53$

Prefixes shall not be used to form multiples or submultiples of this unit. Instead of prefixes, powers of 10 are recommended.

EXAMPLE 2 Reynolds number  $Re = 1,32 \times 10^3$

Considering that plane angle is generally expressed as the ratio of two lengths and solid angle as the ratio of two areas, in 1995 the CGPM specified that, in the SI, the radian, symbol rad, and steradian, symbol sr, are dimensionless derived units. This implies that the quantities plane angle and solid angle are considered as derived quantities of dimension one. The units radian and steradian are thus equal to one; they may either be omitted, or they may be used in expressions for derived units to facilitate distinction between quantities of different kind but having the same dimension.