SLOVENSKI STANDARD
SIST EN 60719:1998

01-februar-1998

Izračun spodnjih in zgornjih mej za povprečne zunanje mere kablov z okroglimi bakrenimi vodniki in naznačenimi napetostmi do vključno 450/750 V (IEC 60719:1992)

Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750 V (IEC 60719:1992)

Berechnung der unteren und oberen Grenzen der mittleren Außenmaße von Leitungen mit runden Kupferleitern und Nennspannungen bis 450/750 V (IEC 60719:1992)

Calcul des valeurs minimales et maximales des dimensions extérieures moyennes des conducteurs et câbles à âmes circulaires en cuivre et de tension nominale au plus égale à 450/750 V (CEI 60719:1992)

Ta slovenski standard je istoveten z: **EN 60719:1993**

ICS:

29.060.20 Kabli Cables

SIST EN 60719:1998 **en**

EUROPEAN STANDARD EN 60719

NORME EUROPEENNE

EUROPÄISCHE NORM August 1993

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Descriptors: Electric cable, low voltage equipment, flexible cable, flexible conductor, dimension measure, minimum value, maximum value, calcul

ENGLISH VERSION

Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750 V
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(IEC 719:1992)

This European Standard was approved by CENELEC on 1993-07-06.
CENELEC 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 CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B-1050 Brussels

Ref. No. EN 60719:1993 E

FOREWORD

At the request of the CENELEC Technical Committee TC 20, Electric cables, the International Standard IEC 719:1992 was submitted to the CENELEC Unique Acceptance Procedure (UAP) in September 1992 for acceptance as a European Standard.

The text of the International Standard was approved by CENELEC as EN 60719 on 6 July 1993.

The following dates were fixed:

- latest date of publication of an identical national standard	(dop)	1994-03-01
- latest date of withdrawal of conflicting national standards	(dow)	1994-03-01

Annexes designated "normative" are part of the body of the standard.
In this standard, annex ZA is normative.

ENDORSEMENT NOTICE

The text of the International Standard IEC 719:1992 was approved by CENELEC as a European Standard without any modification.

ANNEX ZA (normative)

OTHER INTERNATIONAL PUBLICATIONS QUOTED IN THIS STANDARD WITH THE REFERENCES OF THE RELEVANT EUROPEAN PUBLICATIONS

When the international publication has been modified by CENELEC common modifications, indicated by (mod), the relevant EN/HD applies.

IEC Publication	Date	Title	EN/HD	Date
502	1983	Extruded solid dielectric insulated power cables for rated voltages from 1 kV up to 30kV	-	-

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NORME INTERNATIONALE
INTERNATIONAL STANDARD

CEI
IEC
719

Deuxième édition
Second edition
1992-03

Calcul des valeurs minimales et maximales des dimensions extérieures moyennes des conducteurs et câbles à âmes circulaires en cuivre et de tension nominale au plus égale à 450/750 V

Calculation of the lower and upper limits for the average outer dimensions of cables with circular copper conductors and of rated voltages up to and including 450/750 V

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

CALCULATION OF THE LOWER AND UPPER LIMITS FOR THE AVERAGE OUTER DIMENSIONS OF CABLES WITH CIRCULAR COPPER CONDUCTORS AND OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V

FOREWORD

1) The formal decisions or agreements of the IEC on technical matters, prepared by Technical Committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.

2) They have the form of recommendations for international use and they are accepted by the National Committees in that sense.

3) In order to promote international unification, the IEC expresses the wish that all National Committees should adopt the text of the IEC recommendation for their national rules in so far as national conditions will permit. Any divergence between the IEC recommendation and the corresponding national rules should, as far as possible, be clearly indicated in the latter.

This International Standard has been prepared by Sub-Committee 20B: Low-voltage cables, of IEC Technical Committee No. 20: Electric cables.

This second edition of IEC 719 replaces the first edition issued in 1981.

The text of this standard is based on the following documents:

DIS	Report on Voting
20B(CO)113	20B(CO)123

Full information on the voting for the approval of this standard can be found in the Voting Report indicated in the above table.

CALCULATION OF THE LOWER AND UPPER LIMITS FOR THE AVERAGE OUTER DIMENSIONS OF CABLES WITH CIRCULAR COPPER CONDUCTORS AND OF RATED VOLTAGES UP TO AND INCLUDING 450/750 V

1 General

1.1 *Scope*

This International Standard specifies a method for calculation of the lower and upper limits for the average outer diameter of cables and the outer dimensions of flat cords with circular copper conductors and of rated voltages up to and including 450/750 V.

This standard is not applicable to mineral insulated cables. The method shall not be used to calculate the diameter over the core assembly for determining the sheath thickness; the method given in Appendix A of IEC 502 shall be used for this purpose.

NOTES

1 It is stressed that the conductor diameters given in the tables are intended only for use in this standard as a basis for calculation and are not intended for verification by measurement.

2 The factors given in 2.5 and 3.1 of this standard may be varied in preparing standards for cables in which the number of cores, the hardness of the insulation, precise positioning of the conductors or other factors may affect the dimensional tolerances permissible.

1.2 *Normative references*

The following normative document contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All normative documents are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the normative document listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 502: 1983, *Extruded solid dielectric insulated power cables for rated voltages from 1 kV up to 30 kV.*

2 Lower limit for the average outer diameter

2.1 Take as diameter *D* of the conductor the value given in table 1 or 2 respectively for cables for fixed wiring and for flexible cables and cords.

2.2 Calculate the nominal diameter over the core by adding to the appropriate value of the conductor diameter, obtained as in 2.1, twice the specified mean value of the thickness of the insulation and of any other mandatory coverings of the individual core.

2.3 Calculate the nominal diameter over the core assembly by multiplying the value obtained in 2.2 by the appropriate value of the assembly coefficient *k*, given in the following table:

Number of cores	Assembly coefficient *k*	Number of cores	Assembly coefficient *k*
2	2,00	24	6,00
3	2,16	25	6,00
4	2,42	26	6,00
5	2,70	27	6,15
6	3,00	28	6,41
7	3,00	29	6,41
7*	3,35	30	6,41
8	3,45	31	6,70
8*	3,66	32	6,70
9	3,80	33	6,70
9*	4,00	34	7,00
10	4,00	35	7,00
10*	4,40	36	7,00
11	4,00	37	7,00
12	4,16	38	7,33
12*	5,00	39	7,33
13	4,41	40	7,33
14	4,41	41	7,67
15	4,70	42	7,67
16	4,70	43	7,67
17	5,00	44	8,00
18	5,00	45	8,00
18*	7,00	46	8,00
19	5,00	47	8,00
20	5,33	48	8,15
21	5,33	52	8,41
22	5,67	61	9,00
23	5,67		

* Cores assembled in one layer.

2.4 Calculate the nominal outer diameter D_o of the finished cable by adding to the value obtained in 2.3 twice the specified mean value of the thickness of the sheath (or sheaths) and of the other mandatory coverings, if any, over the core assembly (see clause 4).

2.5 The lower limit D_{min} of the average outer diameter is obtained by multiplying D_o by the factor given:

- for circular multi-core cables with class 5 or class 6 conductors $D_{min} = 0{,}96\ D_o - 0{,}3$ mm
- for all other constructions $D_{min} = 0{,}96\ D_o$ mm

In each case, the value so obtained shall be rounded off:

- to the nearest first decimal for values less than 50 mm;
- to the nearest unit for values equal to or exceeding 50 mm.