INTERNATIONAL STANDARD

ISO 6722-3

Second edition
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Road vehicles — Unscreened low-tension cables —

Part 3:
Conductor sizes and dimensions for thick-wall insulated cables

Véhicules routiers — Câbles basse tension non blindés —
Partie 3: Sections et dimensions des conducteurs à enveloppe isolante d'épaisseur normale

Reference number
ISO 6722-3:1993(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.

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.

International Standard ISO 6722-3 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Sub-Committee SC 3, *Electrical and electronic equipment*.

This second edition cancels and replaces the first edition (ISO 6722-3:1984), of which it constitutes a technical revision.

ISO 6722 consists of the following parts, under the general title *Road vehicles — Unscreened low-tension cables*:

— *Part 1: General requirements and test methods*

— *Part 2: Cable classes, applicable tests and special requirements*

— *Part 3: Conductor sizes and dimensions for thick-wall insulated cables*

— *Part 4: Conductor sizes and dimensions for thin-wall insulated cables*

Annex A of this part of ISO 6722 is for information only.

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Road vehicles — Unscreened low-tension cables —

Part 3:
Conductor sizes and dimensions for thick-wall insulated cables

1 Scope

This part of ISO 6722 specifies the conductor sizes and dimensions of thick-wall insulated unscreened low-tension cables used in road vehicle applications.

NOTE 1 The French "épaisseur normale" is the equivalent to "thick".

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 6722. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 6722 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6722-1:1984, *Road vehicles — Unscreened low-tension cables — Part 1: General requirements and test methods.*

ISO 6722-2:1985, *Road vehicles — Unscreened low-tension cables — Part 2: Cable classes, applicable tests and special requirements.*

3 Cable colour identification

The preferred colours for road vehicle cable insulations are:

black, white, blue, orange, brown, green, violet, red, yellow and grey.

4 Dimensional requirements

Insulated cables covered by this part of ISO 6722 shall conform to the values specified in table 1. For other requirements, different conductor constructions may be used providing they meet the nominal cross-sectional area and the conductor resistance requirement. For special applications for classes A, B and C, and certain materials for class C (see ISO 6722-2 for the classes), the insulation thickness and maximum outside cable diameter may be increased as agreed with the user. Annex A indicates current cable sizes that differ from table 1.

5 Tests and performance requirements

The test methods and the performance requirements shall be as specified in ISO 6722-1 and ISO 6722-2.

Table 1

Conductor						Insulation thickness		Outside cable diameter
Nominal cross-sectional area	No. of wires	Diameter of wires	Diameter	Maximum resistance at 20 °C mΩ/m				
		max.	max.	Plain copper	Tinned copper	nom.	min.[1]	max.
mm²	approx.	mm	mm			mm	mm	mm
0,5	16	0,21	1,1	37,1	38,2	0,6	0,44	2,3
0,75	24		1,3	24,7	25,4			2,5
1	32		1,5	18,5	19,1			2,7
1,5	30	0,26	1,8	12,7	13			3
2,5	50		2,2	7,6	7,82	0,7	0,53	3,6
4	56	0,31	2,8	4,71	4,85	0,8	0,62	4,4
6	84		3,4	3,14	3,23			5
10	80	0,41	4,5	1,82	1,85	1	0,8	6,5
16	126		6,3	1,16	1,18			8,3
25	196		7,8	0,743	0,757	1,3	1,07	10,4
35	276		9	0,527	0,538			11,6
50	396		10,5	0,368	0,375	1,5	1,25	13,5
70	360	0,51	12,5	0,259	0,264			15,5
95	475		14,8	0,196	0,2	1,6	1,34	18
120	608		16,5	0,153	0,156			19,7

1) The minimum insulation thickness is calculated by using the formula:

Minimum insulation thickness = Nominal insulation thickness − 0,1 mm − 10 % of the nominal insulation thickness.

Annex A
(informative)

Cross-sectional areas and resistances for low-tension cables in current sizes

Table A.1 summarizes various national sizes for low-tension cables not shown in table 1. Only the nominal cross-sectional area and the maximum resistance of the conductor are shown because of the variety of constructions currently employed.

Table A.1

Nominal cross-sectional area of conductor mm²	Maximum conductor resistance at 20 °C mΩ/m	
	Plain copper	Tinned copper
0,6	33	33,7
0,65	29,3	30,2
0,8	23,3	23,8
0,85	20,8	21,2
1,25	14,7	15
1,4	13,9	14,2
2	9,42	9,69
3	6	6,17
4,5	4,06	4,18
5	3,94	4,02
7	2,72	2,8
8	2,32	2,45
13	1,5	1,53
15	1,25	1,28
19	1	1,02
20	0,99	1,02
30	0,61	0,68
32	0,57	0,58
40	0,46	0,47
60	0,3	0,31
62	0,29	0,3
75	0,25	0,26
81	0,22	0,224
85	0,21	0,214
100	0,18	0,184
103	0,17	0,173

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Descriptors: road vehicles, electrical installation, low voltage, electric cables, insulated cables, electric conductors, dimensions, diameters, sections, identification methods, colour marking.

Price based on 3 pages