
International Standard



6722/2

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Road vehicles — Unscreened low-tension cables — Part 2 : Cable classes, applicable tests and special requirements

Véhicules routiers — Câbles basse tension non blindés — Partie 2 : Classes de câbles, essais applicables et spécifications particulières

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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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 6722/2 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

ISO 6722/2 was first published in 1982. This second edition cancels and replaces the first edition, of which it constitutes a minor revision to align it with ISO 6722/1 and ISO 6722/3.

Road vehicles — Unscreened low-tension cables — Part 2 : Cable classes, applicable tests and special requirements

0 Introduction

ISO 6722 consists of three parts :

Part 1 : General requirements and test methods.

Part 2 : Cable classes, applicable tests and special requirements.

Part 3 : Conductor sizes and dimensions.

1 Scope and field of application

This part of ISO 6722 specifies cable classes and the applicable tests and lays down special requirements for unscreened low-tension cables used in road vehicle applications.

2 References

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

ISO 6722/3, *Road vehicles — Unscreened low-tension cables — Part 3 : Conductor sizes and dimensions.*

3 Applicable tests and special requirements

The conductors of all cable classes shall consist of bunched or stranded soft annealed copper wires. (For conductor sizes and dimensions, see ISO 6722/3.)

The wall thickness of the insulation of all cable classes shall not be smaller than the nominal value at any point by more than $0,1 \text{ mm} + 10 \%$ of the nominal value.

The average value, determined by six measurements distributed on the circumference, shall be at least equal to the nominal value.

If tested according to the test methods specified in ISO 6722/1, the cables shall comply with the requirements specified in the following table (the numbering of which follows ISO 6722/1).

Table

Test	Class	A	B	C	D	E	F
4.1 Test for insulation faults of the total delivery — For cables $< 0.5 \text{ mm}^2$ — For cables $\geq 0.5 \text{ mm}^2$	4.2 30 min test voltage and breakdown voltage 4.2.2 Test for single core cables — $< 0.5 \text{ mm}^2$ — $\geq 0.5 \text{ mm}^2$	3 kV(rms)	3 kV(rms)	3 kV(rms)			
		5 kV(rms)	5 kV(rms)	5 kV(rms)			
4.2.3 Test for multicore cables	4.3 Insulation resistance — Test temperature — Volume resistivity	Test: 1 kV(rms) Breakdown: 3 kV(rms)	Test: 1 kV(rms) Breakdown: 3 kV(rms)	Test: 1 kV(rms) Breakdown: 3 kV(rms)			
		Test: 1 kV(rms) Breakdown: 5 kV(rms)	Test: 1 kV(rms) Breakdown: 5 kV(rms)	Test: 1 kV(rms) Breakdown: 5 kV(rms)			
4.4 Pressure test at high temperature 4.4.1 Test for single core cables — Test temperature	4.4.2 Test for the sheath of multicore cables — Test temperature	Test: 3 kV(rms)	Test: 3 kV(rms)	Test: 3 kV(rms)			
		(70 \pm 2) °C	(70 \pm 2) °C	(70 \pm 2) °C			
4.5 Thermal overload test — Test temperature	4.6 Shrinkage by heat — Test temperature — Maximum length shrinkage for cables	10 ⁹ Ω -mm min.	10 ⁹ Ω -mm min.	10 ⁷ Ω -mm min.			
		(70 \pm 2) °C	(105 \pm 2) °C	(120 \pm 2) °C			
4.7 Resistance to flame propagation — Exposure time — Extinction time	4.8 Flexibility at low temperature 4.8.1 Winding test — Test temperature for single core cables $< 16 \text{ mm}^2$ and for multicore cables up to 13.5 mm outside diameter	(105 \pm 2) °C	(120 \pm 2) °C	(155 \pm 2) °C	(180 \pm 2) °C	(220 \pm 3) °C	(250 \pm 3) °C
		(150 \pm 2) °C	(150 \pm 2) °C(1)	—			
4.8.2 Impact test, test temperature (–15 \pm 3) °C — Hammer mass for single core cables — $> 16 \text{ mm}^2$ and $< 50 \text{ mm}^2$ — $\geq 50 \text{ mm}^2$	4.8.2 Impact test, test temperature (–15 \pm 3) °C — Hammer mass for single core cables — $> 16 \text{ mm}^2$ and $< 50 \text{ mm}^2$ — $\geq 50 \text{ mm}^2$	4 %	4 %	—			
		30 s	30 s	15 s			
4.8.2 Impact test, test temperature (–15 \pm 3) °C — Hammer mass for single core cables — $> 16 \text{ mm}^2$ and $< 50 \text{ mm}^2$ — $\geq 50 \text{ mm}^2$	4.8.2 Impact test, test temperature (–15 \pm 3) °C — Hammer mass for single core cables — $> 16 \text{ mm}^2$ and $< 50 \text{ mm}^2$ — $\geq 50 \text{ mm}^2$	30 s	30 s	70 s			
		(–25 \pm 3) °C	(–25 \pm 3) °C	(–25 \pm 3) °C			
4.8.2 Impact test, test temperature (–15 \pm 3) °C — Hammer mass for single core cables — $> 16 \text{ mm}^2$ and $< 50 \text{ mm}^2$ — $\geq 50 \text{ mm}^2$	4.8.2 Impact test, test temperature (–15 \pm 3) °C — Hammer mass for single core cables — $> 16 \text{ mm}^2$ and $< 50 \text{ mm}^2$ — $\geq 50 \text{ mm}^2$	300 g	300 g	300 g			
		400 g	400 g	400 g			

1) For special applications, a test temperature of (200 \pm 3) °C may be applied.

Table (concluded)

Test	Class	A	B	C	D	E	F
4.9 Retention of core (mass)							
— Mass for single core cables							
— > 0,5 mm ² and < 1,0 mm ²		0,5 kg	0,5 kg	0,5 kg			
— > 1,0 mm ² and < 2,5 mm ²		1,25 kg	1,25 kg	1,25 kg			
4.10 Stripping of insulation		To be applied	To be applied	To be applied			
4.11 Resistance to oil							
— Test temperature		(90 ± 2) °C	(90 ± 2) °C	(90 ± 2) °C			
— Maximum alteration		± 4 %	± 4 %	20 % ¹⁾			
4.12 Resistance to fuel							
— Maximum alteration		± 6 %	± 6 %	30 %			
4.13 Abrasion test		Weights and number of cycles shall be agreed between the manufacturer of the vehicle and the cable manufacturer.					

1) For class C cables with thicker insulation, a higher value is acceptable.

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