ISO 19642-7:2019 (E)

Road vehicles — Automotive cables — Part 7: Dimensions and requirements for 30 V a.c. or 60 V d.c. round, sheathed, screened or unscreened multi or single core copper conductor cables

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Specifications

- 4.1 General test conditions
- 4.2 Safety concerns
- 4.3 Voltage rating
- 4.4 Temperature classes
- 4.5 Conductor material
- 4.6 Conductors
- 4.7 Sheath thickness
- 4.8 Core cable outside diameter
- 4.9 Representative conductor sizes for testing
- 4.10 Reference and requirements for the tests according to ISO 19642-2

5 Requirements for single-core cables

6 Requirements for round, sheathed, screened or unscreened multi or single core cables

- 6.1 General
- 6.2 Dimensional tests
- 6.2.1 Cable outside and inner layer diameters
- 6.2.2 Ovality of sheath
- 6.2.3 Thickness of sheath
- 6.2.4 In-process cable outside diameter
- 6.3 Electrical tests
- 6.3.1 Electrical continuity
- 6.3.2 Withstand voltage at final inspection
- 6.3.3 Screening effectiveness
- 6.3.3.1 General
- 6.3.3.2 D.C. resistance of the screen
- 6.3.3.3 Surface transfer impedance — Tri-axial method
- 6.3.3.4 Screening attenuation — Absorbing clamp method
- 6.3.3.5 Screening attenuation — Tri-axial method
- 6.3.4 Sheath fault on screened cables
- 6.4 Mechanical tests
- 6.4.1 Strip force of sheath
- 6.4.2 Cyclic bending
- 6.4.3 Flexibility
- 6.5 Environmental tests
- 6.5.1 Test specimen preparation and winding tests
- 6.5.2 Long term heat ageing, 3 000 h at temperature class rating
- 6.5.3 Short term heat ageing, 240 h at temperature class rating +25 °C
- 6.5.4 Thermal overload, 6 h at temperature class rating +50 °C
- 6.5.5 Pressure test at high temperature
- 6.5.6 Shrinkage by heat of sheath

6.5.7 Low temperature winding
6.5.8 Cold impact
6.5.9 Temperature and humidity cycling
6.5.10 Resistance to liquid chemicals
6.5.11 Durability of sheath marking
6.5.12 Resistance to ozone
6.5.13 Artificial weathering
6.5.14 Resistance to flame propagation

Annex A (informative) Dimensions of preferred constructions

Page count: 15