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
 - Voltage rating 4.3
 - 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
 - **Dimensional tests** 6.2
 - Cable outside and inner layer diameters 6.2.1
 - 6.2.2 **Ovality of sheath**
 - Thickness of sheath 6.2.3
 - 6.2.4 In-process cable outside diameter
 - **Electrical tests** 6.3
 - 6.3.1 **Electrical continuity**
 - Withstand voltage at final inspection 6.3.2
 - Screening effectiveness 6.3.3
 - 6.3.3.1 General
 - 6.3.3.2 D.C. resistance of the screen
 - Surface transfer impedance Tri-axial method 6.3.3.3
 - Screening attenuation Absorbing clamp method Screening attenuation Tri-axial method 6.3.3.4
 - 6.3.3.5
 - Sheath fault on screened cables 6.3.4
 - **Mechanical tests** 6.4
 - 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
 - Thermal overload, 6 h at temperature class rating +50 °C 6.5.4
 - 6.5.5 Pressure test at high temperature
 - Shrinkage by heat of sheath 6.5.6

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

Annex A (informative) Dimensions of preferred constructions

Page count: 15