## ISO 19642-9:2019 (E)

Road vehicles — Automotive cables — Part 9: Dimensions and requirements for 600 V a.c. or 900 V d.c. and 1 000 V a.c. or 1 500 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
  - Conductor material 4.5
  - 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
- Requirements for round, sheathed, screened or unscreened multi or single core cables 6
  - 6.1 General
  - 6.2 **Dimensional tests**
  - 6.2.1 Cable outside and inner layer diameters
  - 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
- 6.5.14 Resistance to flame propagation
- Annex A (informative) Dimensions of preferred constructions
- Annex B (informative) Harness and cable colours

Page count: 16