

ISO 19642-10:2019 (E)

Road vehicles — Automotive cables — Part 10: 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 aluminium 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

Annex B (informative) Harness and cable colours

Page count: 17