
**Road vehicles — Automotive cables —
Part 4:
Dimensions and requirements for
30 V a.c. and 60 V d.c. single core
aluminium conductor cables**

*Véhicules routiers — Câbles automobiles —
Partie 4: Dimensions et exigences des câbles en aluminium mono
conducteurs de 30 V a.c. ou 60 V c.c.*

Document Preview

[ISO 19642-4:2019](https://standards.iteh.ai/catalog/standards/iso/61e7af5e-83de-4aa4-828b-f19bb528f8d4/iso-19642-4-2019)

<https://standards.iteh.ai/catalog/standards/iso/61e7af5e-83de-4aa4-828b-f19bb528f8d4/iso-19642-4-2019>



iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 19642-4:2019](https://standards.iteh.ai/catalog/standards/iso/61e7af5e-83de-4aa4-828b-f19bb528f8d4/iso-19642-4-2019)

<https://standards.iteh.ai/catalog/standards/iso/61e7af5e-83de-4aa4-828b-f19bb528f8d4/iso-19642-4-2019>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2019

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

Contents

	Page
Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Specifications	2
4.1 General test conditions.....	2
4.2 Safety concerns.....	2
4.3 Voltage rating.....	2
4.4 Temperature classes.....	2
4.5 Conductor material.....	2
4.6 Conductors.....	3
4.7 Insulation thickness.....	3
4.8 Cable outside diameter.....	4
4.9 Representative conductor sizes for testing.....	4
4.10 Reference and requirements for the tests according to ISO 19642-2.....	4
5 Requirements	5
5.1 General.....	5
5.2 Dimensional tests.....	6
5.2.1 Cable outside diameter.....	6
5.2.2 Insulation thickness.....	6
5.2.3 Conductor diameter.....	6
5.2.4 Cross sectional area (CSA).....	6
5.2.5 In-process cable outside diameter.....	6
5.3 Electrical tests.....	6
5.3.1 Conductor resistance.....	6
5.3.2 Determination of temperature coefficients.....	6
5.3.3 Withstand voltage.....	6
5.3.4 Withstand voltage after environmental testing.....	6
5.3.5 Insulation faults.....	6
5.3.6 Insulation volume resistivity.....	6
5.4 Mechanical tests.....	7
5.4.1 Strip force.....	7
5.4.2 Abrasion.....	7
5.4.3 Breaking force of the finished cable.....	8
5.4.4 Cyclic bending.....	8
5.4.5 Flexibility.....	8
5.5 Environmental tests.....	8
5.5.1 Test specimen preparation and winding tests.....	8
5.5.2 Long term heat ageing, 3 000 h at temperature class rating.....	8
5.5.3 Short term heat ageing, 240 h at temperature class rating +25 °C.....	8
5.5.4 Thermal overload, 6 h at temperature class rating +50 °C.....	8
5.5.5 Pressure test at high temperature.....	9
5.5.6 Shrinkage by heat.....	9
5.5.7 Low temperature winding.....	9
5.5.8 Cold impact.....	9
5.5.9 Temperature and humidity cycling.....	9
5.5.10 Resistance to hot water.....	9
5.5.11 Resistance to liquid chemicals.....	10
5.5.12 Durability of cable marking.....	10
5.5.13 Stress cracking resistance.....	10
5.5.14 Resistance to ozone.....	10

5.5.15 Resistance to flame propagation.....	10
Annex A (informative) ISO conductor sizes, number of strands and strand diameters	13
Bibliography	16

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ISO 19642-4:2019](https://standards.iteh.ai/catalog/standards/iso/61e7af5e-83de-4aa4-828b-f19bb528f8d4/iso-19642-4-2019)

<https://standards.iteh.ai/catalog/standards/iso/61e7af5e-83de-4aa4-828b-f19bb528f8d4/iso-19642-4-2019>