



BSI Standards Publication

**Electric cables – Specification
for 300/500 V fire resistant,
screened, fixed installation
cables having low emission
of smoke and corrosive
gases when affected by fire**

Part 1: Multicore cables

Publishing and copyright information

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Published by BSI Standards Limited 2015

ISBN 978 0 580 85384 5

ICS 13.220.99; 29.060.20

The following BSI references relate to the work on this document:

Committee reference GEL/20/17

Draft for comment 14/30295204 DC

Publication history

First published April 1997

Second edition November 2008

Third (current) edition August 2015

Amendments issued since publication

Date	Text affected
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Summary of pages

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Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 August 2015. It was prepared by Subcommittee GEL/20/17, *Low voltage cables*, under the authority of Technical Committee GEL/20, *Electric cables*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This British Standard supersedes BS 7629-1:2008, which will be withdrawn on 31 August 2016.

Relationship with other publications

This new edition of BS 7629-1 takes account of the publication of BS 5266-1:2011 and BS 5839-1:2013 and their increased fire testing requirements.

Information about this document

This is a full revision of the standard and introduces the following principal changes.

- a) The marking arrangements are updated and clarified.
- b) Test methods are updated to reflect the latest CENELEC harmonization.
- c) This new edition takes account of:
 - BS EN 50395 (replacing Annex 7 of BS 7629-1:2008) on electrical tests;
 - BS EN 50396 (replacing Annex 3 of BS 7629-1:2008) on thickness measurement;
 - BS EN 60332-1-2 (replacing BS EN 50265-2-1) on flame propagation of a single cable;
 - BS EN 62230 (replacing BS EN 50356 and BS 5099) on spark testing.

Product certification, inspection/testing. Users of this British Standard are advised to consider the desirability of third-party certification/inspection/testing of product conformity with this British Standard. Users seeking assistance in identifying appropriate conformity assessment bodies or schemes may ask BSI to forward their enquiries to the relevant association.

WARNING. This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its requirements are expressed in sentences in which the principal auxiliary verb is "shall".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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1 Scope

This British Standard specifies requirements and test methods for the construction and performance of cables which:

- have thermosetting insulation and a rated voltage of 300/500 V;
- provide resistance to fire (circuit integrity), including with mechanical shock and with water, as measured by performance in a standard test or tests;
- emit limited amounts of smoke and corrosive gases when burned as measured by a standard test; and
- are primarily intended for use in emergency lighting, fire detection and fire alarm system circuits.

The circuit integrity performance under fire conditions is assessed on the basis of tests which measure resistance to fire with mechanical impact and water spray (Categories: Standard 30, Standard 60 and Enhanced 120).

NOTE 1 BS 5266-1 and BS 5839-1 give recommendations and guidance on the factors to be taken into account in the planning, design, installation, commissioning and maintenance of emergency lighting, fire detection and fire alarm systems for buildings, respectively.

It is applicable to 2-core, 3-core and 4-core circular cables with an uninsulated full size circuit protective conductor, and 7-core, 12-core and 19-core circular multi-core auxiliary cables with an uninsulated drain wire of not less than 0.5 mm². All cables contain a metallic layer which provides electrostatic screening.

The cables are suitable for operation at a maximum sustained conductor temperature of 70 °C and for a maximum short-circuit conductor temperature of 250 °C (for a maximum period of 5 s).

NOTE 2 Annex A gives recommendations for the selection, installation and operation of cables, Annex B gives the method of test for continuity of tinned coating of wires, Annex C gives the method of test for voltage withstand, Annex D gives the method of test for bending characteristics, Annex E gives the method of test for resistance to impact, Annex F gives the method of test for shrinkage of sheath and Annex G gives notes on type tests.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 7655-1.2, *Specification for insulating and sheathing materials for cables – Part 1: Cross-linked elastomeric insulating compounds – Section 1.2: General 90 °C application*

BS 7655-6.1, *Specification for insulating and sheathing materials for cables – Part 6: Thermoplastic sheathing compounds having low emission of corrosive gases, and suitable for use in cables having low emission of smoke when affected by fire – Section 6.1: General application thermoplastic types*

BS 7671, *Requirements for electrical installations – IET Wiring Regulations – Seventeenth edition*

BS 8434-2, *Methods of test for assessment of the fire integrity of electric cables – Part 2: Test for unprotected small cable for use in emergency circuits – BS EN 50200 with a 930 °C flame and with water spray*