BS 7211:2012+A1:2020

BSI Standards Publication

Electric cables — Thermosetting insulated and thermoplastic sheathed cables for voltages up to and including 450/750 V for electric power and lighting and having low emission of smoke and corrosive gases when affected by fire

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Contents

Summary of pages
This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 26, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and comes into effect on 1 January 2013. 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 this committee can be obtained on request to the committee manager. .

Supersession

BS 7211:2012 superseded BS 7211:1998 (incorporating Amendments Nos. 1 and 2), which was withdrawn on 31 December 2012.

BS 7211:2012+A1:2020 supersedes BS 7211:2012, which is withdrawn.

Relationship with other publications

The new edition of BS 7211 takes account of:

- BS EN 60228 (replacing BS 6360) on conductors;
- BS EN 50363-5 (replacing BS 7655-5.1) on materials;
- BS EN 50395 (replacing Annex B of BS 7211:1998) on electrical tests;
- BS EN 50396 (replacing BS 6469-99.1) on thickness measurement of sheath;
- BS EN 60332-1-2 (replacing BS EN 50265-2-1), BS EN 60332-3-24 (replacing BS EN 50266-2-4) and BS EN 61034-2 (replacing BS EN 50268-2) on reaction to fire performance tests; and
- BS EN 62230 (replacing BS EN 50356) on spark testing.

Information about this document

Text introduced or altered by Amendment No. 1 is indicated in the text by tags A1 A1. Minor editorial changes are not flagged.

In the preparation of BS 7211, GEL/20/17 requested that references to other standards for which the committee is responsible are undated, even if referring to a specific clause. It is the committee's intention not to amend the fundamentals (e.g. clause numbers, material type designation) in any of these standards and so the latest edition applies.

BS 7211:2012 was a full revision of the standard, which was revised due to the conversion of CENELEC Harmonization Documents HD 21 and HD 22 to BS EN 50525 (all parts). The previous edition of BS 7211 included a number of cable types that were harmonized and marked with CENELEC harmonized code designations. The following cables were included in BS EN 50525 and withdrawn from BS 7211, which now only contains national types:

- thermosetting insulated, non-sheathed, single core, (H07Z-U, H07Z-R and H07Z-K) 450/750 V; and
- thermosetting insulated, non-sheathed, single core, (H05Z-U and H05Z-K) 300/500 V.

The content of BS 7211 was aligned with that found in BS EN 50525, where appropriate.

Annex A was included to provide further clarification on where information from BS 7211:1998 was moved to in BS 7211:2012 and BS EN 50525-3-41. Annex B was included to provide clarification on which cables were transferred to BS EN 50525 (all parts).

The importance of the relationship between the traditional United Kingdom Cable Code (formerly known as the CMA coding) and its equivalent harmonized CENELEC code designations is emphasized. This additional information helps the user to choose the appropriate cable.

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.

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at bsigroup.com/standards, or by contacting the Customer Services team.

Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

Hazard warnings

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.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

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.

1 Scope

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

a) have a thermosetting insulation of rated voltage up to and including 450/750 V;

b) emit limited amounts of smoke (see **16.6**) and corrosive gases when subjected to relevant tests compared with corresponding PVC cables conforming to BS 6004;

c) are intended for electric power and lighting.

The types of cable included in this British Standard are:

- thermosetting insulated and thermoplastic low smoke halogen free sheathed cable 450/750 V single core 6181B (see Table 3);
- thermosetting insulated and thermoplastic low smoke halogen free sheathed circular cables 450/750 V, 2-core 6182B, 3-core 6183B, 4-core 6184B and 5-core 6185B (see Table 4);
- thermosetting insulated and thermoplastic low smoke halogen free sheathed cables 300/500 V single-core 6241B, flat twin 6242B, flat 3-core 6243B with circuit protective conductor (see Table 5).

The insulation and other components are suitable to permit operation of the cables at a maximum sustained conductor temperature of 90 °C and for a maximum short-circuit conductor temperature of 250 °C (for a maximum period of 5 s).

NOTE 1 Limitation on the temperature of the cables may be imposed in situations where they could be touched, or where they could touch other materials.

NOTE 2 In installations that include wiring accessories, junction boxes and consumer units etc., the performance of these accessories should be taken into account in deciding the maximum operating temperature of the cable.

NOTE 3 Annex A provides a guide to the cross-referencing of the traditional United Kingdom Cable Codes (formerly known as the CMA codes) and harmonized CENELEC codes. Furthermore, Annex B gives information on the traditional UK cables transferred to BS EN 50525.

NOTE 4 Annex C gives guidance on the use of the cables specified in this British Standard.

NOTE 5 Annex D gives the compatibility test method.

NOTE 6 Annex E gives the voltage withstand test.

NOTE 7 Annex F gives notes on type tests.

NOTE 8 In this British Standard, corrosive (and acid) gases are defined as those that are determined as HCl.

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.

〈A1〉 *Text deleted* 〈A1〉

BS 7655-1.3, *Specification for insulating and sheathing materials for cables – Part 1: Cross-linked elastomeric insulating compounds – Section 1.3: XLPE*

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*

