BS 7912:2012

Incorporating Corrigenda Nos. 1 and 2

BSI Standards Publication

Power cables with XLPE insulation and metal sheath, and their accessories, for rated voltages from 66 kV (U_m = 72.5 kV) to 132 kV (U_m = 145 kV)

(Implementation of HD 632)

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 56, 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 came into effect on 31 December 2012. It was prepared by Subcommittee GEL/20/16, *Medium/high 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 its secretary.

Supersession

This British Standard supersedes BS 7912:2001, which is withdrawn.

Relationship with other publications

This revision of BS 7912 implements the nationally applicable parts of Harmonization Document HD 632 S2:2008 published by the European Committee for Electrotechnical Standardization (CENELEC), in accordance with the decision of the CENELEC Technical Board.

Information about this document

Text introduced or altered by Corrigenda Nos. 1 and 2 are indicated in the text by tags [C1] ⟨C1⟩ and [C2] ⟨C2⟩. Minor editorial corrections are not tagged.

This is a full revision of the standard, and it introduces the following principal changes:

- alignment with the latest version of HD 632 part 1, being itself identical to Edition 4 of IEC 60840;
- inclusion of matter relating to BS 7970, which is also revised in parallel.

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.

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.

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.

1 Scope

This British Standard specifies tests and requirements for power cables with XLPE insulation and metal sheath and their accessories for rated voltages from 66 kV (U_m = 72.5 kV) to 132 kV (U_m = 145 kV) for fixed installations.

*NOTE 1 Cable systems to this standard do not normally have high electrical stresses at the conductor or insulation screen. If the calculated nominal electrical stresses at the conductor screen will be higher than 8.0 kV/mm and/or at the insulation screen higher than 4.0 kV/mm, then attention is drawn to the need to conduct a prequalification test in accordance with IEC 60840:2011, Clause **13**.*

This British Standard is applicable to single-core cables and three-core cables with separate cores and to their accessories for usual conditions of installation and operation. It is not applicable to special cables and their accessories, such as those designed for submarine cables, for which modification to the standard tests might be necessary or special test conditions might need to be devised.

NOTE 2 Annex A gives tests and requirements for cable bonding leads, Annex B gives tests and requirements for sheath voltage limiters (SVLs), while Annex C gives tests and requirements for link housings. Annex D gives an additional water blocking test for phase conductors.

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 7870-2:2011, *LV and MV polymeric insulated cables for use by distribution and generation utilities – Part 2: Methods of test*

BS 7970, *Electric cables – Metal foil and longitudinally welded aluminium sheath constructions of power cables having XLPE insulation for rated voltages from 66 kV (U_m = 72.5 kV) to 132 kV (U_m = 145 kV)*

BS EN 60060-1, *High-voltage test techniques – Part 1: General definitions and test requirements*

BS EN 60228, *Conductors of insulated cables*

BS EN 60229, *Electric cables – Tests on extruded oversheaths with a special protective function*

BS EN 60230, *Impulse tests on cables and their accessories*

BS EN 60287-1-1, *Electric cables – Calculation of the current rating – Part 1-1: Current rating equations (100% load factor) and calculation of losses – General*

BS EN 60332-1-2:2004, *Tests on electric and optical fibre cables under fire conditions – Part 1-2: Test for vertical flame propagation for a single insulated wire or cable – Procedure for 1 kW pre-mixed flame*

BS EN 60811-201, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 201: General test – Measurement of insulation thickness*

BS EN 60811-202, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 202: General test – Measurement of thickness of non-metallic sheath*

BS EN 60811-401, *Electric and optical fibre cables – Test methods for non-metallic materials – Part 401: Miscellaneous tests – Thermal ageing methods – Ageing in an air oven*