

Specification for

Rubber insulation and sheath of electric cables

Enveloppes isolantes et gaines en caoutchouc
des câbles électriques — Spécifications

Isolierung und Mantel aus Gummi von
Elektrokabeln

Committees responsible for this British Standard

The preparation of this British Standard was entrusted by the Cables and Insulation Standards Policy Committee (CIL/-) to Technical Committee CIL/20, upon which the following bodies were represented:

Aluminium Federation
Association of Consulting Engineers
Association of Manufacturers of Domestic Electrical Appliances
British Approvals Service for Cables
British Cable Makers Confederation
British Plastics Federation
British Railways Board
British Steel Industry
British Telecommunications plc
Department of the Environment (Property Services Agency)
Department of Trade and Industry (Consumer Safety Unit, CA Division)
ERA Technology Ltd
Electricity Supply Industry in England and Wales
Engineering Equipment and Materials Users' Association
Institution of Electrical Engineers
London Regional Transport

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

Association of Supervisory and Executive Engineers
British Rubber Manufacturers' Association
GAMBICA (BEAMA Ltd)
Queen Mary College
Telecommunications Cables Group of Bcme

This British Standard, having been prepared under the direction of the Cables and Insulation Standards Policy Committee, was published under the authority of the Board of BSI and comes into effect on 28 February 1991

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The following BSI references relate to the work on this standard:
Committee reference CIL 20
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Amendments issued since publication

Amd. No.	Date	Text affected

Amendment No. 1
published and effective from 1 April 1992
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Specification for rubber insulation and sheath of
electric cables

Revised text

AMD 6937
April 1992

Contents

Under 'Specification', after the entry for clause 9, insert the following.

'10 Covering material for welding cables'

Under 'Tables', after the entry for table 8, insert the following.

'9 Test requirements of covering material for welding cables'

AMD 6937
April 1992

Foreword

After paragraph 5, insert the following.

'This standard was amended to incorporate technical changes to include covering material for welding cables as detailed in Amendment 6 of HD 22.1 S2.'

AMD 6937
April 1992

Table 1. Types of compound, designation, maximum operating temperature and general application

After the entry for 'EI 2', at the bottom of table 1, insert the following.

EM 5 ⁵⁾	–	–	–	10	9
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At the end of the table insert the following footnote.

⁵⁾ Covering material for welding cables in accordance with BS 638 : Part 4'.

AMD 6937
April 1992

New clause 10.

'10 Covering material for welding cables'

10.1 Type of covering material

The covering material, as specified in BS 638 : Part 4, shall be type EM 5 and shall be a rubber compound in which the characteristic constituent is a synthetic chlorinated rubber, e.g. polychloroprene (PCP), chlorosulphonated polyethylene (CSP) or chlorinated polyethylene (CPE). When vulcanized it shall comply with the performance requirements of this standard.

10.2 Test requirements for physical properties

When tested as described in the methods given in appendix B the properties of the covering material shall be in accordance with the requirements given in table 9.'

New table 9.

Insert the following new table 9.

Table 9. Test requirements of covering material for welding cables ¹⁾	
Test	Requirements for covering type EM 5
<i>Tensile properties of unaged test pieces</i>	
Minimum tensile strength, N/mm ²	10.0
Minimum elongation at break, %	300
<i>Tensile properties after accelerated ageing in air oven for 14 days at 100 ± 2 °C</i>	
Maximum variation in tensile strength from unaged value, %	–30 ²⁾
Maximum variation in elongation at break from unaged value, %	–40 ²⁾
<i>Tensile properties after ageing in oil, 24 h at 100 ± 2 °C</i>	
Tensile strength, minimum percentage of value for unaged sample	60
Elongation at break, minimum percentage of value for unaged sample	60
<i>Hot set test at 200 ± 2 °C, stress on test piece 0.2 N/mm²</i>	
Maximum elongation, %	100
Maximum permanent elongation, %	25
¹⁾ As specified in BS 638 : Part 4.	
²⁾ An increase in value after ageing is permitted without limit.	

Publication(s) referred to

Above the entry for 'BS 903', insert the following.

'BS 638 Arc welding power sources, equipment and accessories
Part 4 Specification for welding cables'

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Foreword

This new edition of BS 6899 has been prepared under the direction of the Cables and Insulation Standards Policy Committee and it supersedes BS 6899 : 1984, which is withdrawn.

This edition incorporates technical changes to bring the standard up-to-date but it does not reflect a full review of the standard, which will be undertaken in due course. Differences in the text between this edition and BS 6899 : 1984 are indicated by a line in the margin.

The previous edition introduced a range of 90 °C rubber insulations that included requirements for cross-linked polyethylene (XLPE) insulation and hard ethylene propylene (HEPR) insulation (designated as type GP6) formerly specified in BS 5468 and BS 5469 respectively. Alignment of the standard with the test methods described in BS 6469 meant that it had not been necessary to include some of the methods contained in the previous edition of this standard.

The following designations were introduced for the compounds not previously codified:

Compound	New designation
Heavy duty sheath	RS1
Heavy duty O and FR	RS2
HOFR sheath	RS3
Heavy duty HOFR	RS4
GP3	RS5 rated at 90 °C

This edition incorporates technical changes to align with Amendments 2, 4 and 5 of CENELEC¹⁾ Harmonization Document HD 22.1 S2.

The requirements for the various types of compound have been drafted such that compliance with them can be checked by testing samples taken from finished cables.

Attention is drawn to the certification services of the British Approvals Service for Cables (BASEC)²⁾. These services include licensing manufacturers to use BASEC certification trade marks as independent assurance that cables or cords have been designed and manufactured to appropriate British Standards. BASEC is a subscriber to an agreement in CENELEC whereby cables or cords coming within Harmonized Code Designations and manufactured under a BASEC licence can carry marks acceptable to other signatory countries (CENELEC 'Common marking').

Compliance with a British Standard does not of itself confer immunity from legal obligations.

¹⁾ European Committee for Electrotechnical Standardization.

²⁾ British Approvals Service for Cables, Silbury Court, 360 Silbury Boulevard, Milton Keynes, Buckinghamshire, MK9 2AF.