

Specification for

**Low-frequency
miniature equipment
wires with solid or
stranded conductor,
fluorinated
polyhydrocarbon type
insulation, single**

UDC 621.315.33.029.4 – 181.4:621.315.616.95

Cooperating organizations

The Electronic Components Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following:

- British Electrical and Allied Manufacturers' Association (BEAMA)
- Department of Industry Computers Systems and Electronics
- Electricity Supply Industry in England and Wales
- Electronic Components Industry Federation*
- Electronic Engineering Association*
- Institution of Electronic and Radio Engineers
- Ministry of Defence*
- National Supervising Inspectorate*
- Post Office*
- Society of British Aerospace Companies Limited*
- Telecommunication Engineering and Manufacturing Association (TEMA)

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

- Association of Manufacturers Allied to the Electrical and Electronic Industry (BEAMA)
- British Non-ferrous Metals Federation
- British Plastics Federation
- British Telecom
- Crown Agents for Oversea Governments and Administrations
- Electric Cable Makers' Confederation
- Electronic Components Industry Federation
- Home Telephone Cable Makers' Association
- United Kingdom Atomic Energy Authority

This British Standard, having been prepared under the direction of the Electronic Components Standards Committee, was published under the authority of the Executive Board and comes into effect on 30 October 1981

© BSI 12-1999

The following BSI references relate to the work on this standard:
Committee reference ECL/6
Draft for comment 77/22471 DC

ISBN 0 580 12297 2

Amendments issued since publication

Amd. No.	Date of issue	Comments
5412	September 1987	Indicated by a sideline in the margin

Contents

	Page
Cooperating organizations	Inside front cover
National foreword	ii
1 General	1
2 Wire construction and dimensions	1
2.1 Conductor	1
2.2 Insulation	1
3 Mechanical requirements	2
3.1 Conductor	2
3.2 Insulation	3
3.3 Cut-through test	3
3.4 Melting point test	4
3.5 Density	4
3.6 Heat shock test	4
4 Thermal stability and climatic requirements	4
4.1 Measurement of insulation shrinkage after over-heating of conductor	4
5 Electrical requirements	5
5.1 Electrical resistance of conductor	5
5.2 Dielectric strength	5
5.3 Insulation resistance	5
6 Engineering data	5
6.1 Permittivity and tangent δ	5
6.2 Current-carrying capacity (for information)	6
Appendix A Testing the coating for pinholes	7
Appendix B Cut-through test	7
Appendix C Melting point test	8
Appendix D Preferred colours	9
Appendix E Calculation of the maximum diameter of insulated conductors	9
Figure 1 — Correction factor K for groups of equipment wires under continuous conditions of loading	6
Table I — Deleted	6
Table II — Deleted	6
Publications referred to	Inside back cover

National foreword

This British Standard is identical with IEC Publication 673 “*Low-frequency miniature equipment wires with solid or stranded conductor, fluorinated polyhydrocarbon type insulation, single*” published in 1980 by the International Electrotechnical Commission (IEC), including Amendment No. 1 published in 1984. It has been prepared under the direction of the Electronic Components Standards Committee.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

In Figure 1, the comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Cross-references

International Standard	Corresponding British Standard
ISO/R 105 (1978)	BS 1006:1978 <i>Methods of test for colour fastness of textiles and leather</i> (Technically equivalent)

The Technical Committee has reviewed the provisions of IEC 28:1925¹⁾, to which reference is made in 2.1.1, IEC 189-1:1965¹⁾, to which reference is made in 1.2, 2.2.2, 2.2.3, 3.1.1, 3.1.2, 3.6, 4.1, 5.1 and 5.3, IEC 189-3:1967¹⁾, to which reference is made in 2.2.4, IEC 304:1978¹⁾, to which reference is made in 2.2.4, IEC 344:1971, to which reference is made in 5.1, IEC 538:1976¹⁾, to which reference is made in 3.5 and IEC 649:1979¹⁾, to which reference is made in Appendix E, and has decided that they are acceptable for use in conjunction with this standard. Related British Standards for IEC 189-1, IEC 189-3 and IEC 304 are BS 4808 “*L.F. cables and wires with PVC insulation and PVC sheath for telecommunication*” Part 1:1972 “*General requirements and tests*”, Part 2:1972 “*Equipment wires with solid or stranded conductors, unscreened, single*” and BS 6746C:1969 (1979) “*Colour chart for PVC insulation and sheath of electric cables*”, respectively.

The reference in note 1 of Appendix C to VDE 0472¹⁾, “*Recommendation for Testing Insulated Cables and Wires*”, Section 601, for which there is no corresponding British Standard constitutes informative matter only and since no mandatory requirements are involved, the validity of this British Standard is not affected. A copy of this German VDE publication is available in English for consultation at the British Standards Institution Library.

Additional information. For the purposes of this British Standard the scope of the standard is as follows:

“This British Standard specifies the requirements of low-frequency miniature equipment wires for use inside transmission, telephone and telegraph equipment, data processing and other similar electronic apparatus.”

¹⁾ Undated in the text.

NOTE *Textual error.* When adopting the text of the International Standard the textual error given below was noticed. It has been marked in this British Standard and has been reported to IEC in a proposal to amend the text of the International Standard.

In 3.1.1 the heading of columns 1 and 2 of the table, given as “Nominal diameter of wire” should be read as “Nominal diameter of conductor”.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 10, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

