

Specification for

Wrought aluminium for electrical purposes — Solid conductors for insulated cables

Confirmed
November 2008

Co-operating organizations

The Non-ferrous Metals Industry Standards Committee, under whose supervision this British Standard was prepared, consists of representatives from the following Government departments and scientific and industrial organizations:

- Aluminium Federation*
- Association of Bronze and Brass Founders
- Association of Consulting Engineers
- Board of Trade
- British Bronze and Brass Ingot Manufacturers' Association
- British Electrical and Allied Manufacturers' Association*
- British Lead Manufacturers' Association
- British Non-ferrous Metals Federation
- British Non-ferrous Metals Federation — High Conductivity Copper Group
- British Non-ferrous Metals Research Association
- Copper Development Association
- Crown Agents for Overseas Governments and Administrations
- Electric Cable Makers Confederation*
- Institute of British Foundrymen
- Institute of Metals
- Institution of Mechanical Engineers (Automobile Division)
- Institution of Mining and Metallurgy
- Institution of Production Engineers
- Institution of Structural Engineers
- Lead Development Association
- Light Metal Founders' Association
- London Metal Exchange
- Magnesium Industry Council
- Ministry of Defence, Army Department
- Ministry of Defence, Navy Department
- National Brassfoundry Association
- Non-ferrous Metal Stockists*
- Post Office*
- Royal Institute of British Architects
- Society of Motor Manufacturers and Traders Ltd.
- Tin Research Institute
- Zinc Development Association
- Individual manufacturer

The Government department and scientific and industrial organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- British Railways Board
- Electricity Supply Industry in England and Wales
- Institute of Iron and Steel Wire Manufacturers
- Institute of Sheet Metal Engineering

This British Standard, having been approved by the Non-Ferrous Metals Industry Standards Committee, was published under the authority of the Executive Board on 28 January 1970

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Foreword

This standard makes reference to the following publications:

BS 18, *Method for tensile testing of metals (including aerospace materials)*.

BS 2627, *Specification for wrought aluminium for electrical purposes. Wire*.

BS 2897, *Specification for wrought aluminium for electrical purposes. Strip with drawn or rolled edges*.

BS 2898, *Specification for wrought aluminium and aluminium alloys for electrical purposes. Bars, extruded round tube and sections*.

BS 5714, *Method of measurement of resistivity of metallic materials*.

BS 6360, *Specification for conductors in insulated cables and cords*.

IEC Publication 121 Recommendation for commercial annealed aluminium electrical conductor wire

“Registration record of international alloy designations and chemical composition limits for wrought aluminium and wrought aluminium alloys” (available from the Aluminium Association Inc., 900 19th Street, N.W., Suite 300, Washington DC 20006, USA)”.

This British Standard was first published in 1966 under the authority of the Non-ferrous Metals Industry Standards Committee and at the request of the Aluminium Industry in view of the increasing use of aluminium for electrical conductors of many types.

Materials complying with this standard are suitable for insulated cables made to the appropriate British Standards and for which the conductors must comply with the requirements of BS 6360, “*Specification for conductors in insulated cables and cords*”.

It is important to note that this standard lays down requirements only for the material supplied for cable manufacture, whereas BS 6360 lays down requirements for the conductors in the finished cable. This is in accordance with the method now uniformly adopted by the Institution for specifying the materials used in cable manufacture.

The resistance values and other associated physical properties take into account the relevant IEC Recommendations, namely IEC Publication No. 121:1960, “Recommendations for commercial annealed aluminium electrical conductor wire”.

In this edition all dimensions are shown in metric units which are not exact equivalents of the original inch values.

All stresses are quoted in terms of the hectobar (hbar)¹.

This standard is one of a series of standards for wrought aluminium and aluminium alloys for electrical purposes.

Other standards in this series are:

BS 2627, *Wrought aluminium for electrical purposes. Wire*.

BS 2897, *Wrought aluminium for electrical purposes. Strip with drawn or rolled edges*.

BS 2898, *Wrought aluminium and aluminium alloys for electrical purposes. Bars, extruded round tube and sections*.

As a major step towards alignment of aluminium and aluminium alloy compositions on an international basis, a substantial number of countries have agreed to adopt a 4-digit classification for alloy composition designation. This system is administered by the Aluminium Association Inc., who issue the “Registration Record of International Alloy Designations and Chemical Composition Limits for Wrought Aluminium Alloys.”

¹) 1 hbar = 10 MN/m² = 10 N/mm².

By amendment, it has been decided to introduce this system into the British Standards concerned with these types of material in place of the material designations formerly used. The details of the system are given in Appendix B. The temper designations and associated mechanical property requirements remain unaltered for the present and therefore may not necessarily align precisely with those in the standards of other countries.

Material 1350 therefore replaces material C1E. Minor compositional changes have been made.”

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 8 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.