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Copper-nickel alloy wires, rolled wires, ribbons and sheets for electrical resistance

ICS 29.060.10

Descriptors : resistors, electric wires, sheet materials, non-ferrous alloys, copper alloys, nickel alloys, filaments, strips, electrical resistance materials

Reference number : **JIS C 2521 : 1999 (E)**

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS C 2521** : 1986 is replaced with **JIS C 2521** : 1999.

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4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents, the original JIS is to be the final authority.

Copper-nickel alloy wires, rolled wires, ribbons and sheets for electrical resistance

Introduction This Japanese Industrial Standard has been prepared based on the first edition of **IEC 60182-4** *Basic dimensions of winding wires—Part 4 : Diameters of conductors for round resistance wires* issued in 1971 without modifying its technical contents. The items not specified in the relevant **IEC** Standard are added as Japanese Industrial Standard (in the clauses **3** to **5** and **7** to **12**). The portions underlined with dots in this Standard (Attached Table 2) are not specified in the corresponding International Standard.

In addition, **IEC 60182-4** was withdrawn in 1990 and replaced by **IEC 60317-0-1** *Specifications for particular types of winding wires—Part 0 : General requirements—Section 1 : Enamelled round copper wire*. This Standard has no corresponding relations with the said International Standard, since its scope is different from the scope of this Standard.

1 Scope This Standard specifies copper-nickel alloy wires, rolled wires, ribbons and sheets for electrical resistance (hereafter referred to as "wires, rolled wires, ribbons and sheets") of alloys mainly composed of copper and nickel, and have small temperature coefficient of electrical resistance (hereafter referred to as "temperature coefficient").

Remarks : The corresponding International Standard is as follows.

IEC 60182-4 : 1971 *Basic dimensions of winding wires—Part 4 : Diameters of conductors for round resistance wires*

2 Normative references The standards given in Attached Table 1 contain provisions which, through reference in this Standard, constitute provisions of this Standard. The most recent editions of the standards shall be applied.

3 Definitions The definitions of the major terms in this Standard shall be as follows:

a) **rolled wire** The resistance materials made in such a process that raw rod materials are rolled or drawn after rolling, and then wound.

b) **ribbon** The resistance materials made in such a process that raw sheet materials are cut in its longitudinal direction and then wound.

c) **volume resistivity** Electrical resistance per unit cross section and unit length (Ωm).

d) **linear temperature coefficient and quadric temperature coefficient** If the relative variation of electrical resistance of an electrical conductor is expressed in the form of a quadric function of temperature, the linear temperature coefficient is denoted coefficient on the linear term of the function and the quadric temperature coefficient is denoted coefficient on the quadric term of the function.