

JIS

JAPANESE INDUSTRIAL STANDARD

Silk and polyester fiber
covered wires for
electrical resistance use

Ⓢ JIS C 2528—1991

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1. Scope

This Japanese Industrial Standard specifies the copper-nickel wires for electrical resistance, copper-manganese wires for electric resistance, general copper-nickel resistance wire class 49, general copper-nickel resistance wire class 30, and general copper-manganese resistance wire class 44 specified in JIS C 2521, JIS C 2522 and JIS C 2532, covered with silk, silk and polyester fiber or polyester fiber (hereafter referred to as the "wires").

Remarks: The Standards cited in this Standard are shown in Attached Table 1.

2. Definitions

For the purpose of this Standard, the following principal definitions shall apply.

- (1) volume resistivity The electric resistance per unit sectional area and unit length ($\mu\Omega\text{m}$). This is sometimes called "resistivity".
- (2) conductor resistance The electric resistance (Ω) per prescribed length of a conductor with uniform sectional area.
In general, it is expressed by the electric resistance per one meter (Ω/m), or the electric resistance per one kilometer (Ω/km).
- (3) linear temperature coefficient and quadric temperature coefficient When the rate of change in electric resistance of a conductor due to temperature is obtained from the quadric function of temperature, they mean the coefficient of the linear term of temperature and the coefficient of the quadric term of temperature, respectively.

The symbols generally used for temperature coefficients are given below.

- (a) Linear temperature coefficient: α
- (b) Quadric temperature coefficient: β
- (c) Linear temperature coefficient at $t^\circ\text{C}$: α_t
- (4) mean temperature coefficient The value of the rate of change in electric resistance of a conductor due to temperature divided by the temperature difference in a prescribed temperature division.

The symbols generally used for temperature coefficients are given below.

- (a) Mean temperature coefficient: $\bar{\alpha}$
- (b) Mean temperature coefficient between $t_a^\circ\text{C}$ and $t_b^\circ\text{C}$ ($t_a < t_b$): $\bar{\alpha}_{a,b}$

- (5) mean thermoelectromotive force to copper The $\frac{1}{t}$ of the thermoelectromotive force ($\mu\text{V/K}$) when a thermocouple is made of the wire and the standard copper wire specified in 4.2 (standard platinum wire or copper wire) of JIS C 2527, the reference temperature is made to 0°C and the temperature of measuring junction is made to $t^\circ\text{C}$.
- (6) resistance stability The rate of change in the resistances before and after the prescribed thermal treatment to detect whether the material is annealed enough or not.

3. Classification and symbols

Wires are classified and symbolized as given in Table 1 according to the kind of covering and the kind of conductor.

Table 1. Class and symbol

Class		Symbol ⁽¹⁾
Covering	Conductor	
Double silk cover	Copper-nickel resistance wire grade AA	DSCNWAA
	Copper-nickel resistance wire grade A	DSCNWA
	Copper-nickel resistance wire grade B	DSCNWB
	Copper-manganese resistance wire grade AA	DSCMWAA
	Copper-manganese resistance wire grade A	DSCMWA
	Copper-manganese resistance wire grade B	DSCMWB
	General copper-nickel resistance wire class 49	DSGCN49W
	General copper-nickel resistance wire class 30	DSGCN30W
	General copper-manganese resistance wire class 44	DSGCM44W
Silk and polyester fiber cover	Copper-nickel resistance wire grade AA	DSTCNWAA
	Copper-nickel resistance wire grade A	DSTCNWA
	Copper-nickel resistance wire grade B	DSTCNWB
	Copper-manganese resistance wire grade AA	DSTCMWAA
	Copper-manganese resistance wire grade A	DSTCMWA
	Copper-manganese resistance wire grade B	DSTCMWB
	General copper-nickel resistance wire class 49	DSTGCN49W
	General copper-nickel resistance wire class 30	DSTGCN30W
	General copper-manganese resistance wire class 44	DSTGCM44W