

JIS

JAPANESE INDUSTRIAL STANDARD

**Fiber or Paper Covered
Copper Winding Wires**

JIS C 3204—1988

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Fiber or Paper Covered
Copper Winding Wires

C 3204-1988

1. Scope

This Japanese Industrial Standard specifies fiber or paper covered winding wires to be used for windings and wiring of electrical machinery and apparatus, hereinafter referred to as the "wires".

Matters not specified in this Standard shall be as specified in JIS C 3503.

Remark: The "fiber or paper covered" means such a state that fiber, tape, or the like is wound helically around a conductor in the longitudinal direction.

2. Classification and Symbolization

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

Applicable Standards:

JIS C 3006-Methods of Test for Fiber or Paper Insulated Copper
and Aluminium

JIS C 3053-General Rules for Enameled Copper Wires

JIS C 3102-Annealed Copper Wires for Electrical Purposes

JIS C 3104-Rectangular Copper Wires for Electrical Purposes

JIS R 3413-Textile Glass Yarns

Table 1

Class	Symbol	Shape of conductor		Appendix number
		Round wire	Rectangular wire	
Single cotton-covered copper wire	SCC	○	-	1
Double cotton-covered copper wire	DCC	○	-	
Single silk-covered copper wire	SSC	○	-	
Double silk-covered copper wire	DSC	○	-	
Double cotton-covered rectangular copper wire	DCC	-	○	2
Single glass-fibre-covered copper wire (130°C)	BSGC	○	-	3
Double glass-fibre-covered copper wire (130°C)	BDGC	○	-	
Single glass-fibre-covered copper wire (155°C)	FSGC	○	-	
Double glass-fibre-covered copper wire (155°C)	FDGC	○	-	
Single glass-fibre-covered copper wire (180°C)	HSGC	○	-	
Double glass-fibre-covered copper wire (180°C)	HDGC	○	-	
Double glass-fibre covered rectangular copper wire (130°C)	BDGC	-	○	4
Double glass-fibre-covered rectangular copper wire (155°C)	FDGC	-	○	
Double glass-fibre-covered rectangular copper wire (180°C)	HDGC	-	○	

3. Conductor

3.1 Copper Wire The conductors shall be the annealed copper wires specified in JIS C 3102 or equivalent annealed copper wires.

3.2 Rectangular Copper Wire The conductors shall be the rectangular copper wires of No. 3 or No. 4 specified in JIS C 3104.

4. Maximum Permissible Temperature, Insulating Covering and Characteristics

The maximum permissible temperature, insulating covering and characteristics shall be as specified in Appendixes 1 to 4.

5. Test Method

The test method shall be as specified in JIS C 3006, and the test conditions specified in Appendixes shall be complied with.

6. Inspection

The inspection shall be classified into type inspection and acceptance inspection, shall be carried out in accordance with the test method of 5. for the items specified in Appendixes and the results shall comply with the provisions of 3. and 4. However, in the acceptance inspection some parts of the items may be omitted subject to agreement between the parties concerned with acceptance.

7. Packaging and Net Mass of One Coil

7.1 Packaging The wire shall be coiled on a spool of size adequate for conductor diameter or size without loosening and entanglement, and packaged to prevent scratch and entanglement during transportation.

7.2 Net Mass of One Coil The net mass of one coil shall be as given in Tables 2 and 3. However, if agreed between the parties concerned with acceptance, such a case is an exception.

The tolerances on net mass (including the mass other than that of Tables 2 and 3 but specified in the agreement between the parties concerned with acceptance) are $\pm 30\%$.

7.3 Coiling in Sections When wires are coiled in sections, two lengths are the limit and the mass of one section shall be not less than 20 % of the net mass of one coil (mass specified in Tables 2 and 3 or by the agreement between the parties concerned with acceptance).

In this case a piece of white paper shall be placed at the joint of sections as the mark for joint.

Table 2. Round Wire

Diameter of conductor (mm)	Net mass (kg)
0.3 to 1.5	20
1.6 to 6.0	30

Table 3. Rectangular Wire

Sectional area of conductor (mm ²)	Net mass (kg)
Under 10	10
10 and over	45

8. Designation of Product

The product shall be designated by the class and conductor diameter or by the symbol and conductor diameter for a round wire, and by the class and conductor size (thickness x width) or by the symbol and conductor size (thickness x width) for a rectangular wire.

Examples 1. Single cotton-covered copper wire 1.6 mm, or SCC 1.6 mm

2. Double glass-covered rectangular copper wire
(130°C) 2.0 x 4.0 mm,
BDGC 2.0 x 4.0 mm

9. Marking

The following items shall be marked in a suitable place of each spool:

- (1) Class or symbol
- (2) Conductor diameter or size (thickness x width)
- (3) Serial number
- (4) Net mass
- (5) Number of wires coiled in sections (if coiled in sections)
- (6) Manufacturer's name or abbreviation
- (7) Year and month of manufacture or their abbreviation