

JIS

JAPANESE INDUSTRIAL STANDARD

**Hot-dip aluminium-coated
steel wires**

Ⓒ JIS G 3544—1993

Translated and Published

by

Japanese Standards Association

Printed in Japan

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



1. Scope This Japanese Industrial Standard specifies the aluminium-coated low carbon steel wire and the aluminium-coated high carbon steel wires processed by hot-dip coating (hereafter respectively referred to as iron wires and steel wires).

Remarks: The following standards are cited in this Standard.

JIS G 3505 Low carbon steel wire rods

JIS G 3506 High carbon steel wire rods

JIS H 8672 Methods of test for aluminium coating (hot-dipped) on iron or steel

JIS Z 2201 Test pieces for tensile test for metallic materials

JIS Z 2241 Method of tensile test for metallic materials

2. Definitions For the main terms used in this Standard, the following definitions apply.

- (1) hot-dip aluminium-coated iron wires These are uniformly hot-dip aluminium-coated iron wires which have been produced from wire rods conformed to JIS G 3505 by cold working or heat-treatment (annealed).
- (2) hot-dip aluminium-coated steel wires These are uniformly hot-dip aluminium-coated steel wires which have been produced from wire rods conformed to JIS G 3506 by cold working after heat-treatment (patenting).

3. Wire type, symbol, and applicable wire diameter

3.1 Type, symbol, and applicable wire diameter of iron wires Iron wires shall be classified into two grades of grade A and grade B according to the aluminium coating mass, and their symbols and applicable wire diameters shall be as given in Table 1.

Table 1. Type, symbol, and applicable wire diameter of iron wires

Wire type		Symbol	Applicable wire diameter
Hot-dip aluminium coated iron wires	Grade A	SWMA-A	3.20 mm or over up to and incl. 6.00 mm
	Grade B	SWMA-B	1.60 mm or over up to and incl. 6.00 mm

3.2 Type, symbol, and applicable steel wire of steel wires Steel wires shall be classified into three classes of class 1, class 2, and class 3 according to the tensile strength, and their symbols and applicable wire diameters shall be as given in Table 2.

Table 2. Type, symbol, and applicable wire diameter of steel wires

Wire type		Symbol	Applicable wire diameter
Hot-dip aluminium coated steel wires	Class 1	SWHA-1	1.60 mm or over up to and incl. 5.00 mm
	Class 2	SWHA-2	
	Class 3	SWHA-3	1.60 mm or over up to and incl. 8.00 mm

4. Mechanical properties

4.1 Tensile strength The tensile strength of iron wires and steel wires shall be as follows.

- (1) The tensile strength of iron wires shall be subjected to the test of 10.2, and its tensile strength shall be as given in Attached Table 1.
- (2) The tensile strength of steel wires shall be subjected to the test of 10.2, and its tensile strength shall be as given in Attached Table 2.

4.2 Elongation of steel wires The elongation of steel wires shall be subjected to the test of 10.2, and its value shall be as given in Attached Table 2.

4.3 Torsion characteristic The torsion characteristic of iron wires and steel wires shall be as follows.

- (1) When the torsion characteristic of iron wires is subjected to the test of 10.3 and rotated to the torsion number as given in Attached Table 1, it shall not be ruptured.
- (2) When the torsion characteristic of steel wires is subjected to the test of 10.3 and rotated to the torsion number as given in Attached Table 2, it shall not be ruptured. However, the torsion characteristic is not specified for SWHA-3.

5. Aluminium coating characteristics

5.1 Aluminium coating mass The aluminium coating mass of iron wires and steel wires shall be as follows.

- (1) The aluminium coating mass of iron wires shall be subjected to the test of 10.4, and the obtained value shall be as given in Attached Table 1.