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JIS G 3532
(1962)

Iron Wires*

1. Scope This standard covers ordinary iron wire, annealed iron wire, galvanized iron wire and iron wire for nail manufacturing (hereinafter referred to as the "iron wires")

2. Classification and Description of Iron Wires

2.1 The iron wires shall be classified into the following 7 classes:

Type		Symbol	Remarks
Ordinary iron wire		SWM-B	Made by cold drawing of wire rod conforming to Class 3 or 4 of JIS G 3505-Mild Steel Wire Rod.
Annealed iron wire		SWM-A	Finished by heat treating (annealing or normalizing) ordinary iron wire.
Galvanized iron wire	Class 1	SWM-G1	Finished by uniform bright galvanizing on ordinary iron wire or annealed iron wire.
	Class 2	SWM-G2	Finished by uniform galvanizing on ordinary iron wire or annealed iron wire.
	Class 3	SWM-G3	
	Class 4	SWM-G4	
Iron wire for nail manufacturing		SWM-N	Made by cold drawing of wire rod conforming to Class 3 or 4 of JIS G 3505-Mild Steel Wire Rods.

3. Tolerance on Dimension

Tolerances on diameters of the iron wires shall conform to Table 1.

Table 1

Unit : mm

Diameter of wire	Tolerance	Diameter of wire	Tolerance
Over 12.00	± 0.18	Over 1.60 to 2.00 incl.	± 0.06
Over 8.00 to 12.00 incl.	± 0.16	Over 0.80 to 1.60 incl.	± 0.05
Over 6.00 to 8.00 incl.	± 0.15	Over 0.55 to 0.80 incl.	± 0.03
Over 5.00 to 6.00 incl.	± 0.13	Over 0.35 to 0.55 incl.	± 0.02
Over 3.20 to 5.00 incl.	± 0.10	Over 0.25 to 0.35 incl.	+ 0.02
Over 2.00 to 3.20 incl.	± 0.08	0.25 and smaller	- 0.01
			± 0.01

4. Weight

Minimum weight of one length of the iron wires shall conform to Table 2.

Table 2

Diameter of wire mm	Minimum weight per length kg
Over 3.50	15
Over 2.00 to 3.50 incl.	10
Over 1.20 to 2.00 incl.	6
Over 0.70 to 1.20 incl.	3
Over 0.55 to 0.70 incl.	1.5
Over 0.35 to 0.55 incl.	0.7
Over 0.25 to 0.35 incl.	0.3
0.25 and smaller	0.15

5. Quality

5.1 The surface of the iron wires shall be free from rust, flaws, cracks and other injurious defects.

5.2 Tensile strength of the iron wires and number of twists of annealed iron wire and galvanized iron wire Class 3 and 4 shall conform to Table 3. However as to the tensile strength of the ordinary iron wire, annealed wire and galvanized iron wires and number of twists of annealed wire and galvanized iron wires, other values than those mentioned in Table 3 may be applied when mutually agreed upon by supplier and purchaser.

5.3 The weight of zinc coating and number of dippings in the copper-sulfate test for galvanized iron wire, shall be as given in the attached Table. However, the number of dippings in the copper-sulfate test in case of electrogalvanizing shall be subtracted one dip of 30 sec. from the value indicated on the attached Table, moreover as to wire of 1.20 mm and smaller in Class 1 and Class 2, and wire of 0.8 mm and smaller in Class 3 and Class 4, this shall be determined upon the mutual agreement between supplier and purchaser.

5.4 Wrapping test shall be made by over 6 turns in accordance with the attached Table for galvanized iron wire Classes 3 and 4, and no appreciable cracks or flaking shall occur on the wrapped wire.

Table 3

Diameter of wire mm	Tension Test				Torsion test		
	Tensile strength kg/mm ²				Number of twist		
	Ordinary iron wire	Annealed iron wire	Galvanized iron wire	Nail wire	Annealed iron wire	Galvanized iron wire	
						Class 3	Class 4
Over 7.00	40~85	30~50	30~55	55~95	11 Min	9 Min	8 Min
Over 6.00 to 7.00 incl.	40~85	30~50	30~55	55~95	14 Min	12 Min	11 Min
Over 5.50 to 6.00 incl.	40~85	30~50	30~55	55~95	17 Min	15 Min	13 Min
Over 5.00 to 5.50 incl.	40~85	30~50	30~55	55~95	20 Min	18 Min	15 Min
Over 4.50 to 5.00 incl.	40~85	30~50	30~55	55~95	22 Min	21 Min	17 Min
Over 4.00 to 4.50 incl.	45~95	30~50	30~55	60~105	24 Min	23 Min	19 Min
Over 3.50 to 4.00 incl.	45~95	30~50	30~55	60~105	27 Min	25 Min	21 Min
Over 3.20 to 3.50 incl.	45~95	30~50	30~55	60~105	30 Min	28 Min	24 Min
Over 2.90 to 3.20 incl.	55~110	30~50	30~55	70~115	33 Min	30 Min	26 Min
Over 2.60 to 2.90 incl.	55~110	30~50	30~55	70~115	36 Min	34 Min	28 Min
Over 2.30 to 2.60 incl.	55~110	30~50	30~55	70~115	42 Min	39 Min	33 Min
Over 2.00 to 2.30 incl.	60~120	30~50	30~55	75~130	48 Min	44 Min	38 Min
Over 1.80 to 2.00 incl.	60~120	30~50	30~55	75~130	55 Min	52 Min	44 Min
Over 1.60 to 1.80 incl.	60~120	30~50	30~55	75~130	61 Min	57 Min	49 Min

Attached Table

Diameter of wire mm	Galvanized iron wires													
	Class 1			Class 2			Class 3				Class 4			
	Zinc coating test	Copper sulfate test		Zinc coating test	Copper sulfate test		Zinc coating test	Copper sulfate test	Wrapping test	Zinc coating test	Copper sulfate test	Wrapping test		
	Weight of zinc coating	No. of dips		Weight of zinc coating	No. of dips		Weight of zinc coating	No. of dips		Weight of zinc coating	No. of dips			
	g/m ² (oz/ft ²) ⁽¹⁾	1 min 30 sec		g/m ² (oz/ft ²) ⁽¹⁾	1 min 30 sec		g/m ² (oz/ft ²) ⁽¹⁾	1 min 30 sec	Multiple of stand- ard dia.	g/m ² (oz/ft ²) ⁽¹⁾	1 min 30 sec	Multiple of stand- ard dia.		
Over 5.50	53 Min (about 0.175)	—	1 Min	83 Min (about 0.272)	1 Min	—	153 Min (about 0.50)	3 Min	—	14	244 Min (about 0.80)	4 Min	—	20
Over 5.00 to 5.50 incl.	49 Min (about 0.162)	—	1 Min	76 Min (about 0.251)	1 Min	—	153 Min (about 0.50)	3 Min	—	14	244 Min (about 0.80)	4 Min	—	20
Over 4.50 to 5.00 incl.	45 Min (about 0.149)	—	1 Min	70 Min (about 0.230)	1 Min	—	153 Min (about 0.50)	3 Min	—	12	244 Min (about 0.80)	4 Min	—	18
Over 4.00 to 4.50 incl.	41 Min (about 0.135)	—	1 Min	64 Min (about 0.210)	—	1 Min	153 Min (about 0.50)	3 Min	—	12	244 Min (about 0.80)	4 Min	—	18
Over 3.50 to 4.00 incl.	37 Min (about 0.122)	—	1 Min	57 Min (about 0.188)	—	1 Min	153 Min (about 0.50)	3 Min	—	12	244 Min (about 0.80)	4 Min	—	18
Over 3.20 to 3.50 incl.	35 Min (about 0.114)	—	1 Min	53 Min (about 0.176)	—	1 Min	137 Min (about 0.45)	2	1 Min	10	229 Min (about 0.75)	3	1 Min	16
Over 2.90 to 3.20 incl.	32 Min (about 0.103)	—	—	50 Min (about 0.163)	—	1 Min	137 Min (about 0.45)	2	1 Min	10	229 Min (about 0.75)	3	1 Min	16
Over 2.60 to 2.90 incl.	30 Min (about 0.097)	—	—	46 Min (about 0.151)	—	1 Min	137 Min (about 0.45)	2	1 Min	10	229 Min (about 0.75)	3	1 Min	16

Diameter of wire mm	Galvanized iron wires													
	Class 1			Class 2			Class 3				Class 4			
	Zinc coating test	Copper sulfate test		Zinc coating test	Copper sulfate test		Zinc coating test	Copper sulfate test		Wrapp- ing test	Zinc coating test	Copper sulfate test		Wrapp- ing test
	Weight of zinc coating	No. of dips		Weight of zinc coating	No. of dips		Weight of zinc coating	No. of dips			Weight of zinc coating	No. of dips		
	g/m ² (oz/ft ²) ⁽¹⁾	1 min	30 sec	g/m ² (oz/ft ²) ⁽¹⁾	1 min	30 sec	g/m ² (oz/ft ²) ⁽¹⁾	1 min	30 sec	Multiple of stand- ard dia.	g/m ² (oz/ft ²) ⁽¹⁾	1 min	30 sec	Multiple of stand- ard dia.
Over 2.30 to 2.60 incl.	27 Min (about 0.089)	—	—	42 Min (about 0.139)	—	1 Min	122 Min (about 0.40)	2 Min	—	8	183 Min (about 0.60)	2	1 Min	14
Over 2.00 to 2.30 incl.	25 Min (about 0.081)	—	—	38 Min (about 0.126)	—	1 Min	122 Min (about 0.40)	2 Min	—	8	183 Min (about 0.60)	2	1 Min	14
Over 1.80 to 2.00 incl.	23 Min (about 0.075)	—	—	36 Min (about 0.117)	—	1 Min	92 Min (about 0.30)	1	1 Min	8	153 Min (about 0.50)	2 Min	—	14
Over 1.60 to 1.80 incl.	21 Min (about 0.069)	—	—	33 Min (about 0.109)	—	—	92 Min (about 0.30)	1 Min	—	8	153 Min (about 0.50)	2 Min	—	14
Over 1.40 to 1.60 incl.	20 Min (about 0.064)	—	—	31 Min (about 0.101)	—	—	76 Min (about 0.25)	1 Min	—	6	122 Min (about 0.40)	2 Min	—	12
Over 1.20 to 1.40 incl.	18 Min (about 0.059)	—	—	28 Min (about 0.092)	—	—	76 Min (about 0.25)	1 Min	—	6	122 Min (about 0.40)	2 Min	—	12
Over 1.00 to 1.20 incl.	—	—	—	—	—	—	76 Min (about 0.25)	1 Min	—	6	107 Min (about 0.35)	1	1 Min	12
Over 0.80 to 1.00 incl.	—	—	—	—	—	—	76 Min (about 0.25)	1 Min	—	6	107 Min (about 0.35)	1	1 Min	12

Note ⁽¹⁾ Figures in parentheses are given as reference for exports.