



NUM.

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# SPECIFICATION APPROVAL SHEET

**Polyester-imide Overcoat Polyamide-imide Enamelled Copper Wire**

EI/AIW(200 °C) Grade 2  
Size Range : (0. 10-3. 15)

NOTE : Approval content

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Test Report

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APPROVED	CHECKED	PREPARED

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1. Materials name:

1.1. Conductor materials : The conductor shall be the enameled copper wire specified in IEC 60317.

1.2. Insulation covering : The insulating film of the wire shall be made by baking insulating varnish mainly basecoat of Polyester-imide and overcoat polyimide-imide on the conductor uniformly and perfectly.

1.3 Thermal class: IEC60317-13 class200°C(MW35-C).

1.4 Environment request : Conforms to "ROHS" and "does not have the halogen" the request.

2. Examination item and characteristic :

Item	Characteristic
Appearance	(1)Surface no injuries and adhesion (2)Smooth surface and color uniform (3)Insulation film is not nail scrape
Dimension	The size shall be as given in table
Pinhole	DC 12V 11min, Maximum 3 take a test piece of about 5M
Flexibility	Elongation method, no crack on the film
Adherence	No crack on the film
Resistance to abrasion	The size shall be as given in table 1
Continuity of insulation	The number of faults per 30m of wire shall not exceed the values give in table and test voltages.
Dielectric breakdown voltage	Shall meet the values specified in attached table 1
Resistance to cut through	No failure shall occur within 2min at 300°C
Resistance to heat shock	C 1) Film shall show no crack though which conductor is visible; C 2) The specimen shall be heat to 220±5°C , 112hr ;
Resistance to solvent	Nail method or Pencil method, the film peels no expose the conductor.
Conductor resistance	Shall meet the values specified in attached table 1
Elongation	Shall meet the values specified in attached table 1
Springiness	Shall meet the values specified in attached table 1

3. Test methods:

3.1 Appearance: Shall then be examined with eyes.

3.2 Dimension: Comply with No. test 4 of IEC 60851-2

3.3 Pinhole : Comply with NO. 23 of IEC60851-5.

3.4 Flexibility: Comply with No. test 8 of IEC 60851-3

3.5 Adherence: Comply with No. test 8 of IEC 60851-3

3.6 Resistance to abrasion: Comply with No. test 11 of IEC 60851-3.

3.7 Continuity of insulation : Comply with No. test 14 of IEC 60851-5

Nominal conductor diameter(mm)		Voltage(d.c)V	Nominal conductor diameter(mm)		Maximum number of faults per 30m
>	小		>	小	
0.05	0.125	500	-	0.05	10
0.125	0.25	750	0.05	0.08	5
0.25	0.50	1000	0.08	0.125	5
0.50	1.60	1500	0.125	1.60	5

3.8 Dielectric breakdown voltage: Comply with No. test 13 of IEC 60851-5. next table of hook no and twist number.

Conductor diameter(mm)		Hook no(g)	Length (cm) of twist number
>	≤		
-	0.04	6	--
0.04	0.045	8	--
0.045	0.05	10	--
0.05	0.056	12	--
0.056	0.063	15	--
0.063	0.071	20	--
0.071	0.08	25	--
0.08	0.09	30	--
0.09	0.10	40	--
0.10	0.25	85	33
0.25	0.355	170	23
0.355	0.50	340	16
0.50	0.710	700	12
0.710	1.06	1350	8
1.06	1.40	2700	6
1.40	2.00	5400	4

3.9. Resistance to Cut through test : Comply with NO.3.50 of MW 1000 test. So next table of exert weight:

Conductor diameter(mm)	Exert weigh(g)
0.04-0.071	100
0.079-0.114	150
0.127-0.254	250
0.287-0.361	300
0.404-0.455	600
0.511-0.912	1000
1.024-1.628	2000

3.10 Resistance to heat shock test : Comply with No. 3.5 of MW 1000 test;:

Conductor diameter(mm)	Elongation or diameter of winding mandrel
0.051~0.226	20%j 3d
0.254~1.628	20% 3d
1.829~2.588	25% 5d
2.906-3.264	30%

3.11. Resistance to solvent test : Comply with No. test 12 of IEC 60851-4.

3.12. Conductor resistance test: Comply with No. test 5 of IEC 60851-5.

3.13. Elongation: Comply with No. test 6 of IEC 60851-3. The size shall be as given in table 1.

Elongation (%) = ((length between gauge lines with parts in contact) - (gauge length)) / (gauge length) x 100

3.14. Springiness: Comply with No. test 7 of IEC 60851-3

4. Packing of axle specification: So next table

Conductor diameter (mm)	Gluey of axle		Min.weight (kg)
	JIS	PEWSC	
0.10-0.15	PT-4	ER-5L	1.0
0.16-0.29	PT-10	ER-6L	3.5
0.30~0.69	PT-15	ER-7L	5.0
0.70~2.59	PT-25	ER-9L	9.0
2.60 ~ 3.15		ER-12	10.0

5. Packing:

Mark in the reel

- 5.1 Wire name and kind
- 5.2 Conductor diameter
- 5.3 Operating number
- 5.4 Manufacturing date
- 5.5 Net weight of one reel of winding

6. Storage conditions and shelf life.

- 6.1 There are no specific requirements in any of International Standards (JIS3202、 3003、 NEMA1000).
- 6.2 Recommend to store in room temperature, dry and ventilated environment.
- 6.3 If the product is stored more than 3years, tests should be performed in accordance with International Standards to check its validity before use.

Attached table 1

Diameter (mm)	Tolerance (mm)	Min. Increase in diameter (mm)	Max. Overall Diameter (mm)	Min. Dielectric breakdown voltage (V)	Max. Conductor resistance 20°C (Q/KM)	Min. Elongation (%)	Max Springiness	Resistance to Abrasion(g)	
								Average	Minimum
0.100	±0.003	0.016	0.125	950	2333	16	73	---	---
0.112	±0.003	0.017	0.139	2700	1848	17	73	---	---
0.125	±0.003	0.019	0.154	2800	1475	17	70	---	---
0.140	±0.003	0.021	0.171	3000	1170	18	67	---	---
0.160	±0.003	0.023	0.194	3200	890.6	19	67	---	---
0.180	±0.003	0.025	0.217	3300	700.7	20	65	---	---
0.200	±0.003	0.027	0.239	3500	565.7	21	62	---	---
0.224	±0.003	0.029	0.266	3700	449.5	21	59	---	---
0.250	±0.004	0.032	0.297	3900	362.8	22	56	490	415
0.280	±0.004	0.033	0.329	4000	288.2	22	53	525	445
0.315	±0.004	0.035	0.367	4100	227	23	55	565	480
0.355	±0.004	0.038	0.411	4300	178.2	23	53	605	515
0.400	±0.005	0.040	0.459	4400	140.7	24	50	650	550
0.450	±0.005	0.042	0.513	4400	110.9	25	48	700	590
0.500	±0.005	0.045	0.566	4600	89.59	25	47	750	635
0.560	±0.006	0.047	0.630	4600	71.53	26	44	800	680
0.630	±0.006	0.050	0.704	4800	56.38	27	50	860	760

Attached table 1

Diameter I (mm)	Tolerance (mm)	Min. Increase in diameter (mm)	Max. Overall Diameter Grade 2 (mm)	Min. Dielectric breakdown voltage (V)	Max. Conductor resistance 20°C (Q/KM)	Min Elongation (%)	Max Springiness	Resistance to Abrasion(g)	
								Average	Minimum
0.710	±0.007	0.053	0.789	4800	44.42	28	47	920	780
0.800	±0.008	0.056	0.884	4900	35	28	43	990	840
0.900	±0.009	0.060	0.989	5000	27.65	29	48	1060	900
1.000	±0.010	0.063	1.094	5000	22.40	30	45	1130	960
1.120	±0.011	0.065	1.217	5000	17.35	30	41	1210	1020
1.250	±0.012	0.067	1.349	5000	13.93	31	37	1290	1100
1.400	±0.014	0.069	1.502	5000	11.10	32	34	1390	1180
1.600	±0.016	0.071	1.706	5000	8.50	32	30	1490	1260
1.800	±0.018	0.073	1.909	5000	6.72	32	—	1600	1350
2.000	±0.020	0.075	2.112	5000	5.44	33	—	1710	1440
2.240	±0.022	0.077	2.355	5000	4.34	33	—	1820	1540
2.500	±0.025	0.079	2.618	5000	3.48	33	—	1940	1640
2.800	±0.028	0.081	2.922	2500	2.78	34	—	—	—
3.150	±0.032	0.084	3.276	2500	2.19	34	—	—	—

Note: This product specification acknowledgement will come into effect one month after it is delivered to your company with or without your acknowledgement.