

SUBMERSIBLE WINDING WIRES

We offer poly wrapped winding wire commonly known as “**Submersible winding wire**”. The copper conductor is wrapped with thin polyester film and **Biaxial Oriented Poly Propylene (BOPP)** films. The most modern plant with sophisticated wrapping heads and in line continuous heat shrinkage furnace is installed to get uniform covering. A complete quality assurance testing by instruments covering all governing standards is available. The test standards followed are IS 8783:1995.

APPLICATION

Used in submersible pumps motors of all sizes for domestic and industrial applications.

PACKAGING

Available in coil form with suitable length as per size, in polythene bag and packed in inner and outer corrugated boxes.

SPECIAL SALIENT FEATURES

- Saves energy - ETP grade high conductivity annealed copper used
- Less current leakage - No air gap between the films
- Tear resistant - High mechanical strength - High tensile strength
- Each coil tested at 3500 V
- Heat shock test - at 150°C
- Easy winding - Resistance annealed copper and controlled OD
- Manufactured by ultra modern automatic plant as per IS 8783 (Part 4 / Sec.3)

TESTING FACILITIES FOR SUBMERSIBLE WINDING WIRES

The quality assurance having all the testing facilities with ultra modern, high precision instruments and rigorous testing plans. Details of test which conforms to IS 8783 (Part 4 / Sec.3) is as follows:

Sr. No.	Name of the Tests	Units	Instruments Used
1	Size (Diameters)	mm	Micrometer
2	Elongation	Percentage	Tensile tester
3	Conductor resistance	Ohm / km	Resistance meter
4	Volume resistivity	Ohm-cm	Million mega meter
5	High voltage test	kV	High voltage tester
6	Thermal ageing	Change in elongation and tensile	Ageing oven and tensile tester
7	Shrinkage test	Percent	Circulating hot air oven
8	Water absorption	mg / cm ²	Vacuum oven and pump desiccator
9	Hot deformation	Percent	Circulating hot air oven
10	Heat shock test	No sign of cracks / scales / separation of layers	Circulating hot air oven and mandrels

GENERAL PROPERTIES

Sr. No.	Nominal conductor diameter (mm)	Tolerance \pm (mm)	Nominal resistance Ohms / km at 20°C	Over all diameter	Weight of poly wrapped (kg/km)	Elongation minimum (%)
1	0.40	0.004	137.15	0.80	1.467	24
2	0.50	0.005	87.78	0.90	2.154	25
3	0.60	0.006	60.96	1.00	2.980	26
4	0.70	0.007	44.78	1.10	3.946	28
5	0.80	0.008	34.29	1.20	5.052	28
6	0.90	0.009	27.09	1.30	6.298	29
7	1.00	0.010	21.94	1.40	7.683	30
8	1.10	0.011	18.14	1.50	9.208	30
9	1.20	0.012	15.24	1.60	10.873	31
10	1.30	0.013	12.98	1.70	12.678	32
11	1.40	0.014	11.20	1.90	14.891	32
12	1.50	0.015	9.75	2.00	16.989	32
13	1.60	0.016	8.57	2.10	19.227	32
14	1.70	0.017	7.59	2.20	21.605	32
15	1.80	0.018	6.77	2.30	24.122	32
16	1.90	0.019	6.08	2.40	26.780	32
17	2.00	0.020	5.49	2.50	29.576	33
18	2.10	0.021	4.98	2.60	32.513	33
19	2.20	0.022	4.53	2.70	35.589	33
20	2.30	0.023	4.15	2.80	38.805	33
21	2.40	0.024	3.81	2.90	42.161	33
22	2.50	0.025	3.51	3.00	45.656	33
23	2.60	0.026	3.25	3.10	49.291	34
24	2.70	0.027	3.01	3.20	53.066	34
25	2.80	0.028	2.80	3.30	56.980	34
26	2.90	0.029	2.61	3.40	61.035	34
27	3.00	0.030	2.44	3.50	65.228	34

* These are only indicative values. Improvement is an ongoing process at RRWL and efforts exceed average values.





FLAT CABLE

(Three Core) Voltage grade 1100 V, conforming to IS 694-1990

- Fits perfect required grommet
- As per IS dimension
- Perfect sheathing for underwater application

TECHNICAL SPECIFICATION

Conductor: Compactly bunched high purity bright, electrolytic grade, plain annealed copper with superb flexibility according to BS 8130 Class 2 & 5 available in various sizes. 'Unilay' conductor in the core will be provided on special order from 1 to 4 sq. mm.

Insulation and Sheathing: Generally available with 70°C insulation and normal PVC sheathing, Choice of insulation and sheathing is available on special order.

Nom. Cross Section Area of conductor (mm ²)	Number of Nominal dia. of Strands mm	Nom. Insulation Thickness (mm)	Nom. Sheath Thickness (mm)	Max resistance per km at 20°C Ω/km	Approx overall dimension (W X H) (mm)	Current carrying capacity at 40°C amps
1.5	22 / 0.3	0.6	0.9	12.1	12.0 x 5.6	18
2.5	36 / 0.3	0.7	1.0	7.41	13.0 x 6.2	24
4	56 / 0.3	0.8	1.0	4.95	15.3 x 7.1	28
6	84 / 0.3	0.8	1.1	3.30	19.2 x 8.4	36
10	140 / 0.3	1.0	1.4	1.91	24.2 x 10.4	48
16	126 / 0.4	1.0	1.4	1.21	29.0 x 12.4	64
25	196 / 0.4	1.2	2.0	0.78	36.5 x 15.7	80

SELECTION GUIDE

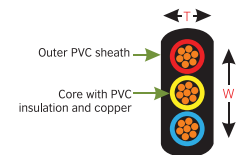
HP Vs Current : The full load current for submersible pump motors, 3 phase, 50 Hz, 415 - 440 V

HP	5.0	7.5	10.0	12.5	15.5	17.5	20.0	25.0	30.0
Amps.	7.5	11.0	15.0	19.0	22.8	25.0	28.0	35.8	43.0

NOTE:

- Current derating factors as per IS 3961 part 5 shall be applicable for different usage conditions.
- Standard sheath colours : Black
- Standard packing: 100 mtr. coils. Longer lengths supplied on order.

Although every effort has been made to ensure accuracy in the compilation of the technical detail within this publication, specifications and performance data are constantly changing. Current details should therefore be checked with RR Global.



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