

SONA™

The Complete Solution

55 Years of
Engineering
Excellence
Since 1960



SUBMERSIBLE
COPPER WIRE



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Universal Metals Pvt Ltd has introduced **SONA** Submersible Copper Wires with technical collaboration of Japan.

Our company specializes in the **manufacturing** of winding wires **which are** used in electric water submersible motor (EWSM) and the electric oil submersible pump (EOSP). Our history is based on solid technical strength, advance technology as well as reliable product quality.

SONA Submersible Copper Wires are used in conjunction with submersible pumps used in deep wells. These wires must be waterproof as much as possible since they are primarily submerged when in use, hence **SONA** Submersible Copper Wires are Insulated with High Quality resins from Altana Chemie Germany.

SONA Submersible Copper Wires have series of products such as 'Standard' 'German Thin' 'Cross Linked 90C' covering copper wires used in electric oil submersible pump which is highly praised in the assembly plant and large oil fields throughout Pakistan.

SONA Submersible Copper Wires are highly reliable. The practice has proved that SONA submersible copper wires have good mechanical and electrical strength. The Insulating Strength of **SONA** wires are sufficient enough. So Insulation is quite reliable.

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Experience and extensive research have enabled Universal Metals Pvt Ltd. to select only premium brands of high grade **Copper Rod** ensuring superior quality product throughout our **production**.

To meet the exact quality standards, demanded by Universal Metals Pvt Ltd., It is essential that only copper with the lowest levels of impurities is used. This, together with strict control of the operating parameters during **SONA** Submersible Copper Wires **production** ensures that the conductor achieves optimum annealing and attains the preferred texture in the copper conductor to obtain optimum values of electrical conductivity, tensile strength, elongation and springiness.

Continuous testing during manufacture ensures the integrity of both surface finish, ductility, purity and gauge.

Universal Metals Pvt Ltd. maintain a fully equipped technical department which carries out all specialist testing and inspection both at the point of manufacture and in the laboratory.

Typical tests are performed, including tangent delta – key, in order to attain optimum degree of **SONA** Submersible Copper Wire's.

- High Voltage Breakdown
- Excellent Dielectric Strength
- Good Adhesion Grip
- Abrasion Resistance
- Flexibility
- Cut Through.

Product Description:

- Solid or stranded, tinned or copper conductor, 8 – 25 SWG
- Rated temperature: 120°C.
- Rated Voltage under AC 450/750 Volts.
- Uniform thickness of wire to ensure easy Stripping and Cutting.
- Top-Coated conductor is available.
- Resistant to acids, oils, alkalis, moisture and fungus.

* When continuous use in water PH values of water should be within 6.5-8.5.



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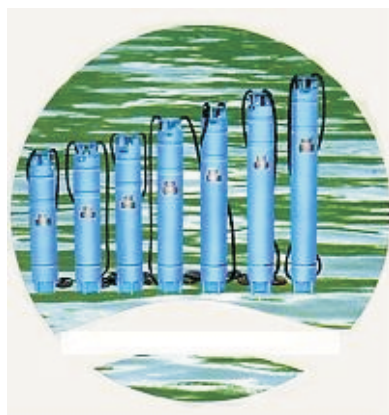
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SUBMERSIBLE COPPER WIRE



Submersible Copper Wires are largely Used in Submersible Pumps



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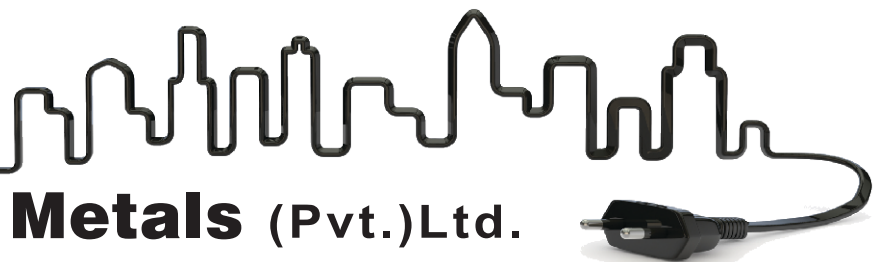


No	(Standard) Sec	Cond. Structure		Thickness of Insulation (mm)	Thickness of Jacket (mm)	Max OD of wire (mm)	DC Resistance	
		Standard	Deviation				(Ù/M)	
	(mm ²)	(mm)	(± mm)	min	max			
1	0.80	1/ 1.00	0.010	0.35	0.10	1.75	0.02116	0.02240
2	0.90	1/ 1.06	0.011	0.35	0.10	1.83	0.01881	0.01995
3	1.00	1/ 1.12	0.011	0.35	0.12	1.90	0.01687	0.01785
4	1.12	1/ 1.18	0.012	0.35	0.12	1.95	0.01519	0.01609
5	1.25	1/ 1.25	0.013	0.35	0.12	2.10	0.01353	0.01435
6	1.60	1/ 1.40	0.014	0.35	0.12	2.25	0.01079	0.01143
7	1.80	1/ 1.50	0.015	0.35	0.12	2.35	0.009402	0.009955
8	2.00	1/ 1.60	0.016	0.35	0.12	2.45	0.008237	0.008749
9	2.24	1/ 1.70	0.017	0.40	0.15	2.55	0.007320	0.007750
10	2.50	1/ 1.80	0.018	0.45	0.15	2.70	0.006529	0.006913
11	2.80	1/ 1.90	0.019	0.45	0.15	2.80	0.005860	0.006204
12	3.15	1/ 2.00	0.020	0.45	0.15	3.10	0.005289	0.005600
13	3.55	1/ 2.12	0.021	0.50	0.15	3.20	0.004708	0.004983
14	4.00	1/ 2.24	0.022	0.50	0.15	3.35	0.004218	0.004462
15	4.50	1/ 2.36	0.024	0.50	0.15	3.65	0.003797	0.004023
16	5.0	1/ 2.50	0.025	0.50	0.15	3.80	0.003385	0.003584
17	5.3	1/ 2.60	0.026	0.50	0.15	3.90	0.003130	0.003314
18	5.7	1/ 2.70	0.027	0.50	0.15	4.00	0.002902	0.003073
19	6.2	1/ 2.80	0.028	0.50	0.15	4.10	0.002699	0.002857
20	6.6	1/ 2.90	0.029	0.50	0.15	4.20	0.002516	0.002663
21	7.1	1/ 3.00	0.030	0.60	0.15	4.60	0.002351	0.002489
22	7.5	1/ 3.10	0.031	0.60	0.15	4.70	0.002201	0.002331
23	8.0	1/ 3.20	0.032	0.60	0.15	4.80	0.00266	0.002188
24	8.6	1/ 3.30	0.033	0.60	0.15	4.90	0.001943	0.002057
25	8.8	1/ 3.35	0.034	0.60	0.15	4.95	0.001885	0.001996
26	9.1	1/ 3.40	0.034	0.60	0.15	5.0	0.001830	0.001938
27	9.9	1/ 3.55	0.036	0.60	0.15	5.15	0.001679	0.001777
28	10	1/ 3.60	0.036	0.60	0.15	5.25	0.001632	0.001728
29	11	1/ 3.80	0.038	0.7	0.15	5.60	0.001465	0.001551
30	3.55	7/ 0.80		0.55	0.15	3.80		0.005098
31	4.00	7/ 0.85		0.55	0.15	3.95		0.004516
32	4.50	7/ 0.90		0.55	0.15	4.10		0.004028
33	5.60	7/ 1.00		0.60	0.15	4.40		0.003263
34	7.10	7/ 1.12		0.60	0.15	4.85		0.002601
35	6.00	19/ 0.63		0.65	0.15	4.55		0.003028
36	7.50	19/ 0.71		0.65	0.15	4.95		0.002384
37	8.50	19/ 0.75		0.65	0.15	5.15		0.002137
38	9.50	19/ 0.80		0.65	0.15	5.40		0.001878
39	10.60	19/ 0.85		0.65	0.15	5.65		0.001664
40	11.80	19/ 0.90		0.65	0.15	6.0		0.001484



COLORS: SONA Submersible Copper Wires are available almost in all colours like green, golden, brown, blue, colourless or according to customer's requirement.

SPOOLS: SONA Submersible Wires are supplied on spools in one continuous length without joints or as allowed in the reel size and dimension wherever confirming to GBT, JIS and DIN specification 'catch weight' (i.e random weight) are normally supplied but special weights according to customers requirement can also be supplied. SONA Submersible Copper Wires can be supplied in one 200 kg continuous length without joints on big plastic spools.



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