



MATPLAT[®]



Product Catalogue

- Silver Plated Copper (SPC) Conductor
- Nickel Plated Copper (NPC) Conductor
- Technical Ceramics

INTRODUCTION

The mission of MATPLAT is to develop, manufacture and market wide range of Bare Wires (solid conductors or multistrand) and Technical Ceramics for Thermal & Cable Solutions. Our product range includes various sizes of Silver Plated Copper (SPC), Nickel Plated Copper (NPC) Conductors and Magnesium Oxide Beads . We provide wide range (standard size / custom built size) of quality product at competitive prices & high quality services according to customer needs.

SILVER PLATED COPPER (SPC) CONDUCTOR

Silver Plated copper wires are composed by providing concentric silver plating over bare copper conductor. This material enhances the conductivity of copper with bright & shiny surface of silver. In addition, silver coating also show excellent corrosion resistance characteristics. From the above excellent characteristics this conductor is a favorable choice for wires used in nuclear, aerospace, defense, military and many more Industrial applications. MATPLAT manufactures silver plated copper wires complying international standard ASTM B298, ASTM B286 also customized wires are available on special request.

Available Wire Size

Solid Type : From 42 AWG (0.06 mm) to 20 AWG (0.81 mm)

Stranded Type : Upto 1.50 sq. mm














Silver Coating : 1.25% to 10% as per weight



Features

- Very high Conductivity
- Superb thermal resistance
- Shiny & bright surface
- Excellent signal transmission rate
- Excellent Corrosion resistance
- Low resistivity

Applications

-  Military aircraft cables as per MIL 16878
-  PTFE aircraft wires & cables
-  High speed Databus cables
-  Twinax Cables
-  High frequency cables
-  Oxygen sensor cables
-  UL & CSA Industrial cables
-  Speaker Cables
-  Lightweight Cables
-  Multi-pair cables with analog & digital signal transmission
-  Radio frequency co-axial cables
-  Connector pins & communication cables
-  Used as shielding material in cables

SOLID/STRANDED CONDUCTOR

Solid Conductors : Sizes & Typical Properties

Conductor Size (AWG)	Dia (mm)	Max. DC Conductor resistance @ 20 Deg C (Ohm/ Km)	Tensile strength max (n/m2)	Elongation min (%)
38	0.102	2210	-	-
37	0.114	1759		
36	0.127	1411		
35	0.142	1124		
34	0.160	881.5		
33	0.180	694.0		
32	0.203	557.7	303 X 10 ⁶	9
31	0.226	439.7	-	-
30	0.254	356.4	296 X 10 ⁶	13.5
29	0.287	271.1	-	-
28	0.320	224.4	296 X 10 ⁶	13.5
27	0.361	170.6	-	-
26	0.404	140.9	296 X 10 ⁶	13.5
25	0.455	107.7	-	-
24	0.511	88.4	290 X 10 ⁶	15
22	0.640	56.1	290 X 10 ⁶	20
20	0.810	34.7	276 X 10 ⁶	20
18	1.020	21.8	276 X 10 ⁶	20
16	1.290	13.9	-	-
14	1.630	8.5	-	-

Note : Tensile Strength & Elongation values are given for standard practice conductors

Stranded Conductors : Sizes & Typical Properties

Conductor Size (AWG)	Stranding	No of Strand X Conductor Dia (mm)	Overall Conductor Dia (mm)	Cross Sectional area (mm ²)	Max. DC Cond. Res. @ 20 Deg C (Ohm/ Km)	Tensile strength max (N/m ²)	Elongation min (%)
32	7/40	7 X 0.08	0.25	0.035	570.9	325 X 10 ⁶	5.5
30	7/38	7 X 0.10	0.3	0.05	332.3	325 X 10 ⁶	5.5
28	7/36	7 X 0.13	0.39	0.09	210.5	325 X 10 ⁶	5.5
26	7/34	7 X 0.16	0.48	0.14	133.7	303 X 10 ⁶	9.0
26	19/38	19 X 0.10	0.5	0.15	126.7	335 X 10 ⁶	5.5
24	7/32	7 X 0.20	0.6	0.22	83.2	303 X 10 ⁶	9.0
24	19/36	19 X 0.13	0.65	0.25	80.2	325 X 10 ⁶	5.5
22	7/30	7 X 0.25	0.75	0.34	52.5	296 X 10 ⁶	13.5
22	19/34	19 X 0.16	0.8	0.38	49.8	303 X 10 ⁶	9.8
20	7/28	7 X 0.32	0.97	0.56	33	296 X 10 ⁶	13.5
20	19/32	19 X 0.20	1.02	0.59	30.3	303 X 10 ⁶	9.0
18	7/26	7 X 0.40	1.22	0.87	20.7	296 X 10 ⁶	13.5
18	19/30	19 X 0.25	1.27	0.93	19.1	296 X 10 ⁶	13.5
16	19/29	19 X 0.29	1.45	1.25	14.9	296 X 10 ⁶	13.5
15	19/28	19 X 0.32	1.6	1.52	14	296 X 10 ⁶	13.5
14	19/27	19 X 0.36	1.83	1.93	9.5	296 X 10 ⁶	13.5
13	19/26	19 X 0.40	2	2.38	7	296 X 10 ⁶	13.5
12	19/25	19 X 0.45	2.31	3.00	5.1	296 X 10 ⁶	13.5
12	37/28	37 X 0.32	2.26	2.97	5.2	296 X 10 ⁶	13.5
11	19/24	19 X 0.50	2.5	3.73	4.7	296 X 10 ⁶	13.5
10	19/22	19 X 0.65	3.25	6.30	2.8	296 X 10 ⁶	13.5
10	37/26	37 X 0.40	3.82	4.64	3.9	296 X 10 ⁶	13.5
8	133/29	133 X 0.29	4.29	8.78	2.2	296 X 10 ⁶	13.5
6	133/27	133 X 0.36	5.41	13.53	1.4	296 X 10 ⁶	13.5

NICKEL PLATED COPPER (NPC)

Nickel Plated copper wires are composed by providing concentric nickel plating over bare copper conductor. This material enhances the thermal & heat resisting properties of copper with bright & shiny surface of nickel. In addition, nickel coating also show excellent corrosion resistance Magnetic nickel plating over copper reduces high frequency loss in HF application. From the above excellent characteristics this conductor is a favorable choice for wires used in high temperature wires & cables.

We are manufacturing Nickel plated copper wires with complying international standard ASTM B355 also customized wires is available on special request.

Available Wire Size

Solid Type : From 38 AWG (0.1 mm) to 20 AWG (0.81 mm)

Stranded Type : Upto 1.50 sq. mm

Plating Thickness : from 2 % to 27 % of weight as per ASTM B355



Features

- Excellent corrosive resistance
- Superb thermal resistance
- Shiny & bright surface
- Good mechanical properties

Applications

- In High temperature wires & cables
- Heat resistance cables
- Applications with high thermal & chemical demands
- High frequency cables
- Litz wire

Solid Wire specifications, As per ASTM B355				
Conductor Size (AWG)	Dia (mm)	Max. DC Conductor resistance @ 20 Deg C (Ohm/ Km)	Min Elongation (%)	
			< 27 % (Class 2,4,7,10)	for 27 % (Class 27)
38	0.102	2210	15	8
37	0.114	1759	15	8
36	0.127	1411	15	8
35	0.142	1124	15	10
34	0.160	881.5	15	10
33	0.180	694.0	15	10
32	0.203	557.7	15	10
31	0.226	439.7	15	10
30	0.254	356.4	20	15
29	0.287	271.1	20	15
28	0.320	224.4	20	15
27	0.361	170.6	20	15
26	0.404	140.9	20	15
25	0.455	107.7	20	15
24	0.511	88.4	20	15

MAGNESIUM OXIDE CRUSHABLE INSULATORS

Magnesium oxide is used to electrically isolate and mechanically support the thermoelements of a thermocouple. The metal sheath is typically reduced in diameter to compact the oxide powder or crushable oxide insulators around the thermoelements or wires. In order to be suitable for this purpose, the materials shall meet certain criteria for purity and for mechanical and dimensional characteristics. The higher purity also improves Insulation resistance at high temperature.



Available

Heater Grade MgO Winding Cores

cartridge wind cores, cartridge heater cores, swageable cores, swageable insulators

Thermocouple, MI Cable, RTD

crushable insulators, crushable preform, swageable perform, thermocouple Insulators MIMS Insulators Beads

Product Specifications

High Quality MgO grades

- OD sizes from (4 mm – 20 mm)
- Excellent camber properties
- Round, oval, triangular holes
- Customer specified hardness – strong engineering support
- Complex hole configurations
- highly equipped testing lab for quality check up

Chemical Properties

Magnesium oxide (MgO) 99.40%(mass)min	
Impurity	Concentration, %(mass)
Calcium oxide (CaO)	0.35 max
(Aluminum Oxide) Al O	0.15 max
Iron Oxide (Fe O)	0.04 max
Silica (SiO)	0.13 max
Carbon (C)	0.02 max
Sulpher (S)	0.005 max
Boron (B)	0.0035 max
Cadmium (Cd)	0.001 max
B+ Cd	0.004 max

Outside Diameter Tolerances

Nominal Insulator OD	OD Tolerances
0.25 to 1.00 mm (0.010 to 0.039 in.)	±0.05 mm (0.002 in.)
1.00 to 1.50 mm (0.039 to 0.059 in.)	±0.08 mm (0.003 in.)
1.50 to 5.00 mm (0.059 to 0.197 in.)	±0.10 mm (0.004 in.)
5.00 mm to 8.00 mm (0.197 in. to 0.315 in.)	±0.13 mm (0.006 in.)
8.00 to 10.00 mm (0.315 to 0.394 in.)	±0.15 mm (±0.006 in.)
10.00 mm (0.394 in.) and larger	± 1.75 %

Hole Diameter Tolerances

Nominal Insulator Hole Diameter	Hole Diameter Tolerances
0.18 to 1.00 mm (0.007 to 0.039 in.)	±0.05 mm (0.002 in.)
1.00 to 2.00 mm (0.040 to 0.079 in.)	±.08 mm (0.003 in.)
2.00 to 2.50 mm (0.079 to 0.098 in.)	±.10 mm (0.004 in.)
2.50 mm and larger (0.098 in. and larger)	± 5 %
–	–



MATPLAT PVT. LTD.

WORKS

Plot No. E-405, RSV No-232/P (New RSV No 393)
GIDC Industrial Estate, Sanand II
Village: Hirapur, Taluka-Sanand
Ahmedabad-382170, Gujarat (INDIA)

Mobile No.:+91-9999743263

Email : info@matplat.in

