CONDUCTOR *conductor*

The selection of the type of conductor to be used depends either upon the standard or the customer's specification and/or the application of the cable. Depending upon the application each conductor type has advantages and disadvantages.

1. CONDUCTOR OPTIONS BASED ON FLEXIBILTY CLASS *flexibility class*

- Solid Conductors (Single Conductor)
- Stranded Conductors (Generally 7 or 19 Strands)
- Flexible Conductors (Multi-stranded)

CONDUCTOR TYPE *conductor type*	SOLID	STRANDED	FLEXIBLE
Conductor Resistance	Low	High	High
Cost Factor	Economical	Costlier	Costliest
Conductor Termination			
- Crimping	Suitable	Not suitable	Not suitable
- Soldering	Suitable	Suitable	Suitable
- Notching	Suitable	Suitable	Suitable
- Screw Termination	Suitable	Suitable	Not suitable
- Bending Capacity	Large radius	Small radius	Highly flexible
Application			
- Permanent Installation	Suitable	Suitable	Not suitable
- Cable movement during operation	Not suitable	Not suitable	Suitable

2 CONDUCTOR OPTIONS BASED ON MATERIAL TYPES

Copper is free from oxide film in normal atmosphere, but has an affinity for sulphur. So, wherever sulphur is present, like in the case of all rubber cables where sulphur is used for vulcanization, copper should be protected by tinning. Also where high temp. rating is required, SPC is used to protect copper from oxidation, like in case of PTFE & FEP Insulated Cables.

The following table is a summary of the characteristics of the most usual conductor materials. All these conductors are available as Solid, Stranded and Flexible conductors.

Conductor Type	Continuous Temp. Operation up-to	Electrical Conductivity	Soldering Characteristics	Corrosion Resistance	Bending Capacity
Bare Copper	+ 130° C (+ 270° F)	Very Good	Good	Good	Very Good
Tinned Copper	+ 180° C (+ 360° F)	Very Good	Very Good	Very Good	Good
Silver Plated Copper	+ 205° C (+ 400° F)	Very Good	Very Good	Sufficient	Good
Nickel Plated Copper	+ 260° C (+ 400° F)	Good	Adequate	Very Good	Sufficient
Nickel	+ 500° C (+ 400° F)	Sufficient	Not Possible	Very Good	Sufficient