

Supply of Rectangular, 4:1 Copper to NbTi ratio superconducting wire with along with its test certificate

1. Scope:

The tender is invited for the supply of rectangular, 4:1 copper to NbTi ratio superconducting wire along with its test certificate as per the following technical specification.

2. Technical requirement:

Technical specifications (Typical Values)		
Technical details	Required Values	Suppliers compliance
NbTi Wire composition	Nb47±1wt.%Ti.	
Copper	C10100 Oxygen free copper	
Insulated Wire dimension	1.25 x 0.80 (nominal) mm	
Acceptable wire Tolerances	± 0.025 mm	
Insulation material	Formvar	
Cu:SC Ratio	Min 3.6 and Max 4.2	
Number of filaments	42 (min)	
Filament Diameter	71 um	
Filament twist pitch	60-80 mm	
Superconducting properties		
IC (A) , 4T , 4.2K	> 450 A	
N-value (@ 4T) ($V_1 = V_c(i_1/i_c)^n$)	>40	
Physical properties		
RRR (Equal to R_{293}/R_{10} , is defined by the values of electrical resistance at 293 K (R_{293}) and the resistance at 10 K (R_{10}).	> 70	
Tolerance in length	± 10%	

3. Deliverables:

Sr. No.	Description of items	Quantity
1.0	<u>Supply of Rectangular, 4:1 Copper to NbTi ratio superconducting wire with along with its test certificate</u>	12.4 Km

4. Shipping Requirement

4.1 Each deliverable length of wire shall be assigned a unique identification.

4.2 The wire shall be wound on plastic spools, protected and boxed for transportation.

5. Documentation Requirement

5.1 The supplier shall provide the I Vs B test certificate for the NbTi wire as per IEC 61788-4. The supplier shall submit I_c Vs B for the above sample up to 4 Tesla field at 4.2 K temperature.

5.2 The supplier shall provide test results regarding the RRR, number of filaments, filament size, filament twist, bare and insulated wire diameters for each spool separately.