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PURCHASE SPECIFICATION
GROUP : TRACTION ENGINEERING.

P S No. : PS/445/2114

REV. No. : 01

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REVISION HISTORY SHEET

REV. No.	DATE	NATURE OF CHANGE	REASONS	PREPARED BY	APPROVED BY
00	21-02-2011	FIRST ISSUE	--	C N KUMAR	S K IYENGAR
01	06-06-2011	Cable lug changed to 150sq.mm		C N KUMAR	S K IYENGAR

APPROVED BY

S K IYENGAR

PREPARED BY

C N KUMAR

ISSUED BY

TRACTION ENGG.

DATE

21-02-2011

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**SPECIFICATION FOR COMPACT INDUCTION HEATING
ANNEALING CABLE**

1. Cable Size : 160 Sq. MM, 15 metre long.
2. Cable Rating : 860 Amps at 10000 HZ
3. Conductor : 0.3 mm Dia. Super enameled special Electrical grade Flexible annealed copper wire as per IS : 4800
4. DC Resistance of each wire at 20°C : 0.2289Ω/Meter (max.) as per IS : 8130 - 1984
5. No. of Wires : 2280
6. No. of Strands : 20 (114 wires in each strand)
7. Insulation of each strand : Each strand is insulated with PTFE with Fibre glass tape of 0.08mm (nom.) and to be covered 100%.
8. Taping : Each strand taped with fibre glass tape 1.0mm(nom) and high temperature varnished.
9. Transposing : All 20 strands thus laid and transposed in the shape of rope as 1+7+12.
10. DC Resistance of strands at 20°C as per IS : 8130 : For ten strands : 0.242Ω/KM (max.)
For twenty strands : 0.121Ω/KM (max.)
11. Inner sheath : 100% covering with one layer of 0.5mm(nom.) Asbestos braiding.
12. Inner sheath cover : 100% covering with 0.05mm(nom) Teflon tape.
13. Inner sheath braiding : 50% covering with Annealed bare copper wire of dia 0.3mm(nom).
14. Outer sheath : 100% covering with two layers of Asbestos mantle yarn of 0.5mm dia. for working temperature upto 450°C.
15. End finishing : Two ends on each side to be crimped with 2 lugs of 150 Sq. mm copper lugs (long neck) as shown in page 03 of this spec.
Near cable ends Teflon taping to be done and binding to be done With Asbestos yarn.
16. Overall diameter of cable : 30mm±1mm

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INFORMATION REQUIRED WITH OFFER FOR TECHNICAL ACCEPTANCE

- a) Cable dimension details.
- b) Conductor specification.
- c) Current/Voltage rating.
- d) Cable construction.
- e) Half metre long (minimum) sample cable for technical acceptance.

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TESTS TO BE CONDUCTED

- a) Conductor resistance separately for 10 strands and 20 strands.
- b) Before crimping the ends, Insulation/continuity between braids to be checked.
(There should not be any short between braids)
- c) Transposition of braids should be checked on a sample piece and braids should be closely transposed.
- d) HV test (spark test) of 3.0 KV to be done as per IS : 694 – 1990.
- e) After the above, ends to be crimped with 150 Sq. mm long neck copper lugs as shown on page 03.

ACCEPTANCE CRITERIA

- a) Visual inspection for any physical damage.
- b) Conductor dimension (0.3mm $\pm$ 5%).
- c) Length of cable as per spec.
- d) Conductor resistance of 10 strands and 20 strands as per spec.
- e) HV test (spark test) of 3.0 KV at strand level.
- f) Copper elongation test (10% minimum).
- g) Test certificate.

PACKING

Each cable should be rolled separately and covered with suitable gunny cloth and overall with double layer polythene wrapped with 100% covering to avoid seepage of water. Tag with following information to be attached to the roll.

- a) Cable type : **INDUCTION HEATING ANNEALING CABLE**
- b) Cable size : **160 Sq. MM**
- c) Cable rating : **860 AMPS. @ 10000 HZ**
- d) Cable length : **15 Metres.**
- e) BHEL Code No. :



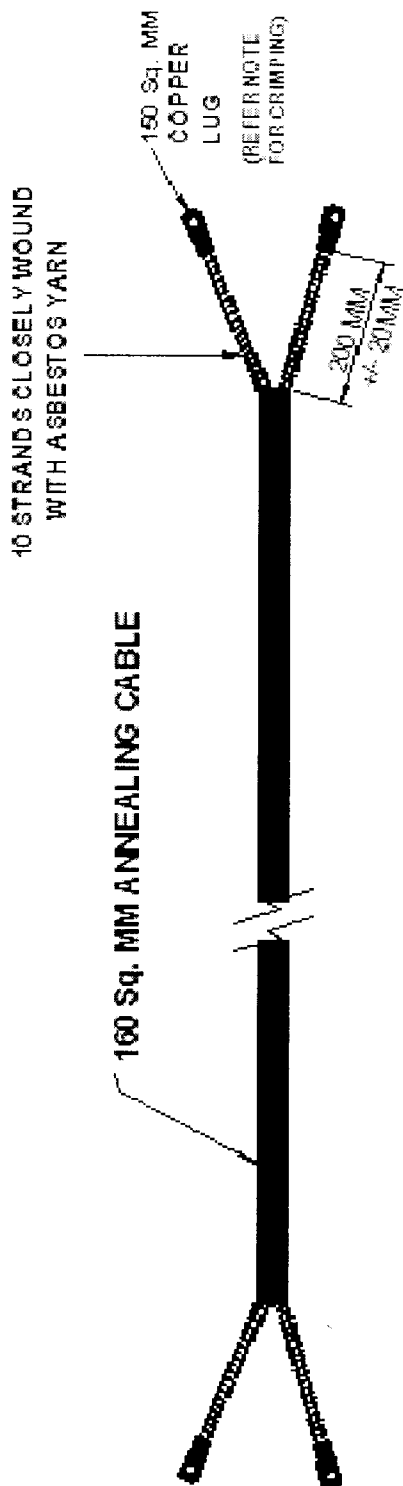
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- NOTE :**
- a) Before crimping each crimp end Enamel upto a length of 40mm to be removed completely using suitable chemical.
 - b) After removing the Enamel each crimp end to be tinned properly.
 - c) Tinned ends to be crimped using 150Sq.mm long neck copper lugs with appropriate crimping tool.