बी एच ई एल Ranipet	**Technical Delivery Condition (TDC)** *FOR* ***Cold Rolled Low Carbon Steel Flat Product for Cold Forming (Collecting Electrode Coils)***	Doc Ref:	**TDC:RTE:257**
		Rev.No.	**03**
		Date:	**21.03.2013**
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1.0 SCOPE

This TDC specifies the requirements for the supply of cold rolled steel sheet coils for Collecting Electrode.

2.0 MATERIAL SPECIFICATION

2.1 The applicable specifications are as follows;

2.1.1 Carbon steel:

a) JIS G 3141 SPCD – SD
b) IS:513 Gr.DD (killed, matt finish & best surface)

2.1.2 Corrosion Resistant Steel:

a) EN 10130 – DC 03 (1.0347) – B- m
b) COR-TEN A or equivalent

3.0 ADDITIONAL REQUIREMENTS

3.1 Tolerance on thickness: ± 0.05 mm
3.2 Tolerance on width + 3.0 mm, - 0.0 mm
3.3 Coil weight shall be restricted between 12-20 MT
3.4 ID of the coil shall be restricted to 500-610mm
3.5 The camber in the coil shall be maximum of 6 mm for any continuous length of 15 M.

4.0 CHEMICAL AND MECHANICAL PROPERTIES

4.1 Carbon steel:

4.1.1 The chemistry & Mechanical properties including hardness for the carbon steel coils shall be as per respective Specification.

4.1.2 Carbon steel coils of IS 513 Gr. DD – in addition to mechanical testing cupping test has to be conducted and acceptance norm shall be as per IS 513 Gr. DD

Prepared by (QA)	Reviewed by	Signature	Approved by
	ENGG(AQCS)	21/3/13.	
	Material Planning.	21/3/13 (M. madhavan)	
	Purchase		
	Quality Control (Proc.)		(Head/QA)
	Quality Assurance	21/03/2013	

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4.2 Corrosion Resistant Steel :

4.2.1 The chemistry and mechanical properties shall be as follows:

a) **Chemical Composition :**

-	C	SI	Mn	P	S	Cr	Cu	Ni
MIN	-	**0.25**	**0.20**	**0.07**	-	**0.30**	**0.25**	-
MAX	**0.12**	**0.75**	**0.50**	**0.15**	**0.035**	**1.25**	**0.55**	**0.65**

b) Mechanical Properties:

- Yield Point: 310 MPa (min),
- Tensile Strength: 445 MPa (min)
- Minimum % Elongation ($L_o = 5{,}65\sqrt{S_o}$) = 20

5.0 Packing:

5.1 Before packing, the coils shall be given a sufficient coat of rust preventive fluid on both sides (top & bottom).

5.2 Three binding strips through eye of the coil at equal spacing shall tightly be secured.

5.3 Polythene sheet (thickness > 20 microns) shall be wrapped over the coil.

5.4 Subsequently coil shall be wrapped with polythene bonded Hessian cloth.

5.5 ID rings shall be provided at both the sides of the coil to protect the coil edges.

5.6 Entire circumference of the coil shall be covered with GI sheet / painted sheet. Subsequently both the faces shall be protected with metal sheets ie., full coil is to be covered with GI Sheet / Painted Sheet.

5.7 Three cross strapping shall be tightly secured through the ID of the coil at equal spacing.

5.8 Two more strapping along the periphery shall be provided ensuring tight strapping. The outer label shall be pasted on the packed OD of the coil.

5.9 A metal label containing the details as mentioned in clause no. 5.10 shall be secured at one of the outer cross strapping.

5.10 Label containing following details shall be pasted on the ID and OD of the coils.

a. Vendors Name
b. Purchase Order No.
c. Coil No.
d. Specification and grade
e. Gross weight
f. Net weight.

6.0 TEST CERTIFICATE :

Detailed correlated Test Certificates in English, to be submitted along with the supply, for the tests conducted as required in the respective specification and as mentioned in this TDC.

7.0 BHEL reserves the right to carry out incoming materials cross inspection checks on receipt of coils at BHEL Stores and reject the same, if found, not conforming to the requirement of PO and TDC.

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RECORD OF REVISIONS

Rev No	Date	Revision details
00	25.11.1995	TDC: RTE: 024, TDC:RTE:025, TDC:RTE:062, TDC:RTE:070 AND TDC:RTE:071 were reviewed and merged together.
01	15.05.2002	Totally reviewed and re-issued.
02	06.06.2007	Modified for better clarity.
03	21.03.2013	Clause no. 3.3 – Coil weight changed to 12 to 20MT instead of 8-10 MT considering the new roll forming machine installed at R1 Bay.

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