

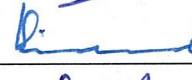
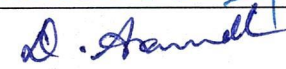
 Ranipet	Technical Delivery Condition (TDC) for Cold rolled carbon sheet coils with standard tolerance.	Doc Ref:	TDC:RTA:410
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**TECHNICAL DELIVERY CONDITIONS FOR
COLD ROLLED CARBON SHEET COILS
WITH STANDARD TOLERANCE**

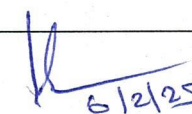
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1.0 SCOPE

- 1.1 This TDC specifies the requirements for cold rolled carbon sheet coils (CRCA) of deep drawing quality to specification IS 513 GR-CR3 / JIS G 3141 SPCE-SD with standard tolerance. Steel shall be in fully killed condition.

2.0 CHEMICAL & MECHANICAL PROPERTIES

2.1 IS 513

1. Chemistry and Bend test shall be as per IS 513.
2. Erichsen cupping value shall be as per Figure 1 of IS 513.
3. Tensile, Yield and Elongation as per IS 513
4. Hardness shall be 57 HRB Max as per JIS G3141

2.2 JIS G3141

1. Chemistry shall be as per material specification (JIS G 3141)
2. Hardness shall be 57 HRB MAX
3. Bendability shall be as per material specification (JIS G 3141)
4. Erichsen cupping test shall be conducted and the value shall be as per Figure 1 of IS 513.

3.0 SUPPLY CONDITION


- 3.1 The coils shall be free from slit edges, visual scales and rust etc.

- 3.2 **The tolerance for thickness shall be as below:**

Specified width (in mm)	Thickness tolerances for specified thicknesses (in mm)					
	≤ 0.4	> 0.4 to ≤ 0.6	>0.6 to ≤ 0.8	>0.8 to ≤ 1.0	>1.0 to ≤ 1.2	>1.2 to ≤ 1.5
≥ 125 to <600	-	±0.03	± 0.035	± 0.035	±0.04	±0.04
≥600 to ≤ 1200	±0.03	±0.04	±0.05	±0.06	±0.07	±0.09
>1200 to ≤ 1500	±0.05	±0.05	±0.05	±0.07	±0.08	±0.10

- 3.3 **The tolerance for width shall be as below:**

Specified width (in mm)	Tolerance (in mm)
≤ 1200	+3 / 0
>1200, ≤1500	+5 / 0

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- 3.4 The camber, out of flatness, bend shall be permitted only to the extent specified in the applicable standard.
- 3.5 The ID of the coil shall be 500 mm \pm 20 mm, OD of the coil shall be 1400 mm (max) and coil weight 5 to 10 MT.
- 3.6 **Surface condition**
- 3.6.1 Cold rolled with matt finish with an oil coat to protect rusting. When ordered as per the Japanese standard, it shall be SPCE-SD that is, skin rolled-dull finished by roll whose surface is made rough mechanically or chemically.

4.0 PACKING

- 4.1 Before packing, the coils shall be given a sufficient coat of rust preventive fluid on the outer part to prevent rusting.
- 4.2 Three binding strips through eye of the coil at equal spacing shall tightly be secured.
- 4.3 Polythene sheet (thickness more than 20 microns) shall be wrapped over the coil. Subsequently coil shall be wrapped with Hessian cloth.
- 4.4 ID rings shall be provided at both the sides of the coil to protect the coil edges.
- 4.5 Entire circumference of the coil shall be covered with GI sheet / painted sheet. Subsequently, both the faces shall be protected with metal sheets i.e full coil is to be covered.
- 4.6 Three cross strapping shall be tightly secured through the ID of the coil at equal spacing.
- 4.7 Two more strapping along the periphery shall be provided ensuring tight strapping. The outer label containing details as in 5.1 shall be pasted on the packed OD of the coil.
- 4.8 A metal label containing the detail as in 5.1 shall be secured at once of the outer cross strapping.

5.0 IDENTIFICATION

- 5.1 The following details shall be ensured in outer label pasted on the ID of the coil.
- Vendors Name
 - Purchase Order Number
 - BHEL material code
 - Coil Number
 - Specification & Grade
 - Net Weight
- 5.2 Two more labels containing all the details as in 5.1, shall be pasted, one on the eye and another on the outer surface of the packed coil.
- 5.3 Band of Orange paint or colour marking to be provided in the inner eye of the packing for identification of coils supplied as per this TDC.

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6.0 TEST CERTIFICATE

6.1 The TC shall be in English and containing the following details

- i. Purchase Order Number
- ii. Specification and Grade
- iii. Coil Number
- iv. Nominal thickness and width
- v. Chemical composition.
- vi. Bend test result
- vii. Max. camber
- viii. Gross and net weight
- ix. Hardness and Erichsen cupping values
- x. Tensile, Yield and elongation
- xi. Surface finish

6.2 BHEL reserves the right to carry out tests and reject the item wherever non-conforming to the requirement of Purchase Order and Technical Delivery Condition.

RECORD OF REVISIONS

Rev No	Date	Revision details
00	05.02.2025	<p>New TDC prepared based on TDC No. RTA:408, feedback from Material planning, further confirmation from engineering and discussions. The TDC is for cold rolled carbon sheet coils with standard tolerance in line with ISO 16162. The tolerance requirement for width as per ISO 16162 and engineering feedback included. The thickness tolerance included as per IS 16162 for width greater than or equal to 600 mm and as per EN 10140 for width less than 600 mm.</p> <p>The coil type is clarified as CRCA and condition of steel shall be fully killed in TDC clause no. 1.0.</p> <p>Colour coding requirement included based on feedback from APH Engineering/Stores/Production shop/MPLG</p>

Issued By Quality Assurance