

Project: Maitree (2X660MW)

1. SCOPE

This TDC specifies requirements for supply of carbon steel plates and rolled sections for Maitree 2X660 MW project.

2. MATERIAL SPECIFICATION:

- a) SA / IS 2062, ASTM A 36, EN 10025-2, EN 10025-3, or equivalent grades as mentioned in the table below.
- b) Grade, Size, Quantity shall be as per Purchase Order (PO)
- c) Steel shall be supplied in fully killed condition.

Table of Equivalent specifications:

SL NO	SA / IS 2062	EN 10025-2		EN 10025-3	ASTM A36
		Thk ≤ 40	Thk > 40		
01	E250 A	S 235 JR	S235JR +N	---	A36
02	E250 BR	S 235 JR	S235JR +N	---	---
03	E250 B0	S 235 J0	S235J0 +N	---	---
04	E250 C	S 235 J2	S235J2 +N	---	---
05	E 350 A, E 350 BR	S 355 JR	S355JR +N	---	---
06	E 350 B0	S 355 J0	S355J0 +N	---	---
07	E 350 C	S 355 J2	S355J2 +N	---	---
08	E410 BR	--	---	S420N	

3. HEAT TREATMENT:

- i. ASTM A36 and all grades of SA/ IS 2062 E250 and EN 10025-2 Gr.S235- Plates of thickness more than 40mm to be supplied in Normalized rolled or Furnace normalized condition.
- ii. All grades of SA/ IS 2062 E350 and EN 10025-2 Gr. S355- Plates of thickness more than 40mm shall be supplied in Furnace normalized condition only.
- iii. SA/IS 2062 E410 BR / EN 10025-3- S420N- Plates shall be supplied in Furnace Normalized condition only.

4. CHEMISTRY & MECHANICAL TESTS:

- a) Chemistry shall be checked melt wise.
- b) Mechanical tests shall be conducted as per applicable material specification
- c) Additional mechanical tests to be conducted are:
 - i. Impact Testing shall be done for plates / sections of thickness > 50 mm irrespective of material grade/specification.
 - ii. Through thickness ductility test to class Z15 as per EN 10164 (for Plus- I columns of E350 material) shall be conducted for applicable material codes as per PO.

5. NON DESTRUCTIVE TEST:

Ultrasonic Test shall be conducted for plates of thickness ≥ 25 mm as per ASTM A435.

6. FINISH AND REPAIR:

Plates shall be free from mill scales, edge crack and other injurious defects. Repairs by fusion welding are prohibited. Mechanical removal of defects permitted subject to meeting minimum thickness and smooth surface.



Ranipet

TECHNICAL DELIVERY CONDITIONS FOR STRUCTURAL STEEL PLATES AND ROLLED SECTIONS

DOC No: TDC: RTE: 263

Rev: 01

Effective Date: 24/11/2017

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7. MARKING (by mill):

- 1. Specification (SA/IS 2062 / EN 10025-2 / EN 10025-3/ASTM A36)
2. Grade
3. Melt number
4. Maker's emblem/Code/ Identification and
5. Plate number. PO No (BHEL PO only), buyer name to be painted on the product. Marking shall be done as indicated below:
i. All plates of thickness > 10mm: Sl no: 1 to 4 shall be maintained by hard stamping and Sl no 5 by paint stenciling.
ii. All plates of thickness <= 10mm (except made from strip in coil form): Sl no: 1 to 5 shall be maintained by paint stenciling.
iii. Plates of thickness <= 10mm (produced from strip in coil form): Sl no: 1 to 5 by paint stenciling on the top of each pile/ packet.

8. INSPECTION AND CERTIFICATION:

Plates / section shall be duly inspected by the supplier at their works and Test certificate, in English, shall accompany each product with the following details:

- a) Purchase Order No. TDC No. & its Revision No., Test certificate No. & Date, Size, Plate number and Quantity-Melt wise.
b) Material Specification and Grade with applicable year of code, Heat Number, Steel making process, de-oxidation process (Specification designation used shall be SA/IS 2062 grades/ EN 10025-2/ EN 10025-3 ASTM A36).
c) Chemistry, Carbon equivalent and Heat Treatment details.
d) Mechanical test values, including impact values and through thickness ductility (where applicable), shall be reported.
e) NDE results with reference and acceptance standards.

RECORD OF REVISIONS

Table with 2 columns: Revision No. and Description. Row 1: Rev.00 Original Issue. Row 2: Rev.01 Equivalent International standards included.

Approval table with columns: Prepared by, Reviewed by (Department, Name and Desig.), Signature, and Approved by. Includes signatures and dates for various departments like ENGG (AQCS), ENGG (APH), ENGG (FANS), ENGG (RODM), ENGG (FGD), QC (PROC), MATERIAL PLANNING, PURCHASE, and QA.