



BHARAT HEAVY ELECTRICALS LIMITED

TRANSMISSION PROJECTS ENGINEERING MANAGEMENT

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TYPE OF DOC.	TECHNICAL SPECIFICATION			NAME	SK	SK	RS/DM
TITLE	MS FLAT			SIGN	<i>SK</i>	<i>SK</i>	<i>RS/DM</i>
				DATE	17.10.17		18/10
				GROUP	TBEM	W.O. No	86009
CUSTOMER	Tamilnadu Transmission Corporation Limited (TANTRANSCO)						
PROJECTS	765/400kV AIS S/S Ariyalur						

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	Attachment:	
	Checklist for TE	01

Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS			
				Distribution	TBMM	TBQM	TBCM	TBTS
				Copies	-	-	01	-

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CHECKLIST FOR TECHNICAL EVALUATION

Along with the Technical Bids of the offers, the Bidder should submit this checklist confirming the inclusion of the enclosures as listed below. (Shall tick as ✓)

Sr No	Documents to be enclosed	Bidder to check & confirm
1	Copy of Unpriced BOQ as enclosed in the Technical Specification to confirm that bidder has quoted as per BOQ OF SECTION-1	
2.	Schedule of Technical Deviation format duly signed.	
3.	Supporting documents as asked in the Technical requirements (if applicable as per tender requirements)	
4.	Checklist of Technical parameters as per Section-5 duly filled and signed.	
5.	Compliance to Technical Specification	

NOTE:- If the Bidder fails to submit any of the documents as asked in the above check list, their bid is likely to be rejected / not evaluated.

The above checklist is verified for:-

NIT Ref No. :

Name of Equipment :

Name of Project :

Name of Bidder :

Signed with Seal of Bidder.

Date

SECTION 1 SCOPE AND SPECIAL TECHNICAL REQUIREMENT

1.0 SCOPE

This technical specification covers the requirements of design, manufacture, testing at works, packing and dispatch of MS flats to site.

This section covers the scope and quantities of MS flat. The offered MS flat shall also comply with the General Technical Requirements for the project as detailed under section-3 of this specification.

The specification comprise of following sections:

Section-1: Scope, specific technical requirements & Bill of Quantities.

Section-2: Equipment specifications

Section-3: General technical requirements for all equipments under the project.

Section-4: Guaranteed Technical Particulars

Section -5 : Check list

In case of any conflict between various sections, order of precedence shall be in the same order as listed above.

The MS Flat are required for the following Projects:

Customer : **Tamilnadu Transmission Corporation Limited**
(TANTRANSCO)

Project : **765/400kV AIS S/S Ariyalur**

2.0 TECHNICAL REQUIREMENTS:

2.1 MILD STEEL FLAT

- i) Chemical composition & Mechanical properties: Grade –A (Item Designation – Fe410W) of IS: 2062(latest version).
- ii) Sizes:

Sl. No.	Description	Approx. Weight (kg)
1	Mild Steel Flat 75 X 12mm	7.065 kg/meter
2	Mild Steel Flat 50 x 8 mm	3.14 kg/meter

- iii) Length: 4 m to 6 m

3.0 BILL OF QUANTITIES

S. No.	Description	Unit	Quantity
1	Mild Steel Flat 75 X 12mm	MT	195
2	Mild Steel Flat 50 x 8 mm	MT	61

Note -1 Quantity may vary by +/- 30%.

Note -2- All applicable tests as per IS: 2062 shall be conducted by the bidder.

4.0 INSPECTION & TESTING:-

Before being fitted on the equipment, all components shall be subjected to routine tests at the Contractors factory, as per the relevant IEC/IS standards. A detailed test report proving the successful passing of such tests shall be provided.

Prior to dispatch, the routine & acceptance tests shall be carried out on equipment in accordance with the applicable IEC /IS and the material shall be offered for final inspection to BHEL and TANTRANSCO in accordance with agreed quality plan with 3 weeks advance information.

5.0 QUALITY PLAN:-

The contractor shall carry out contract works in accordance with sound quality management principles which shall include such as controls which are necessary to ensure full compliance to all requirements of the specification & applicable international standards. These quality management requirement shall apply to all activities during design, procurement, manufacturing, inspection, testing, packaging, shipping, inland transportation, storage, site erection & commissioning. Contractor shall submit detailed Quality Plan for BHEL / TANTRANSCO approval within 1 week of P.O. placement.

SECTION - 2

STANDARD SPECIFICATION

2.1 APPLICABLE STANDARDS

The materials shall strictly conform to the following Indian Standards, as appropriate:

The materials shall confirm to the latest editions of the following latest Indian Standards:

IS 2062: Steel for general structural purposes

IS 1730: Dimensions for steel plate, sheets, strips and flats for general engineering Purposes.

IS 1731: Dimensions for steel flats for structural and general engineering purposes.

IS 2629: Recommended practices for Hot-dip galvanizing on iron & Steel

IS 2633: Methods for testing uniformity of coating of zinc- coated articles.

IS 1852: Rolling & Cutting Tolerance for hot rolled steel products.

IS 1239 (Part 1): Specification for mild steel tubes, tubular and other wrought steel fittings (Mild Steel tubes)

IS 1239 (Part 2): Specification for Mild steel tubes, tubular and other wrought steel fittings (Mild Steel Sockets)

IS 4826 – Hot-dipped zinc coatings on mild steel tubes

IS 4759: Hot Dip Coatings on Structural Steel and other allied Products

IS 6745: Determination of mass of Zinc Coating on Zinc Coated Iron and Steel Articles

IS 1536: Cast Iron Pressure Pipe -Specification

2.2 CONSTRUCTIONAL FEATURES

2.2.1 MILD STEEL FLATS

All steel required for earthing material shall confirm to Grade –A (Item Designation – Fe410W) of IS: 2062(latest version).

SECTION - 3

GENERAL SPECIFICATIONS

3.1 INSPECTION AND TESTING

All tests and inspection of the equipment specified shall be performed to the extent and in the manner as stipulated in the relevant standards and in this specification. All type test/routine tests/acceptance tests as specified shall be conducted as per the details mentioned in the Purchase order for this equipment.

3.1.1 PROJECT INFORMATION AND SYSTEM PARAMETERS

- a) Customer : M/s Tamil Nadu Transmission Corporation Limited
- b) Project Title : 765/400KV AIS SUB STATION AT ARIYALUR
- c) Transport facilities : Road/Rail
- d) Site location : Villupuram (Nearest railway station Tindivanam)

3.2 DOCUMENTATION SCHEDULE AT CONTRACT STAGE:

S. No.	DESCRIPTION	TENDER STAGE	CONTRACT STAGE FOR APPROVAL	FINAL DOCUMENTATION	
				Prints	CDs
1	Drawings and Data Sheets	1	7	10	5
2	Drawings "As Built "	-	-	10	
3	Type Test Reports	1	7	10	
4	Erection Manuals	-	7	10	
5	Operation and Maintenance Manuals	-	7	10	
6	Manufacturing Quality Plan	-	7	10	
7	Field Quality Plan	-	7	10	
8	Inspection Test Reports	-	7	10	

Title Block

Customer	M/s Tamil Nadu Transmission Corporation Limited
Project:	765/400KV Air Insulated substation Ariyalur
Contractor	BHEL

3.3 Material shall not be dispatched without the approval of test certificates by Purchasers.

3.4 MATERIALS AND WORKMANSHIP

Equipment materials and components shall be new, of high grade and good quality and be to the latest engineering practice. The material and workmanship throughout shall be in accordance with the purpose for which they are intended. Each component shall be designed to be consistent with its duty.

In general, screw threads shall be standard metric threads. The use of other thread from will be used only after prior approval. The supplier shall furnish locking devices for threaded fasteners, which will lock them in such a manner so as to prevent them from coming loose in transport and in service.

All joints and fastening shall be so designed, constructed and registered that the component part may be accurately positioned and restrained to fulfill their required function. The heads of all bolts shall register flush on the surface, which they fasten.

All the information concerning materials or components to be used in manufacturing, machinery, equipment, materials and components supplied, installed or used shall be submitted for approval. Without such approval the supplier shall run risk of subsequent rejection. The cost as well as time delay associated with such rejection shall be borne by the supplier.

Whenever possible, all similar parts of the works shall be made to gauge and shall also be made interchangeable with similar parts. All spare parts shall be interchangeable with, and shall be made of the same materials and workmanship as the corresponding parts of the equipment supplied under the specification. Where feasible, common component units shall be employed in different pieces of equipment in order to minimize spare parts stocking requirements. All equipment of the same type and rating shall be physically and electrically interchangeable.

The supplier shall apply all lubricants used for installation and operation of the equipment. All consumable required for one-year operation shall be in the scope of supplier.

All components exposed to rain shall be designed with sloped upper surface to avoid water pools.

3.5 SURFACE TREATMENT

3.5.1 All metal surfaces shall be treated to provide anti-corrosion protection.

3.6 PACKING AND MARKING

3.6.1 PACKING

MS Flat may be supplied in open condition. However, while stacking the materials for transportation it should be ensured that, similar items are grouped and tied with steel wires / strips for convenient handling and shall be done in such away to avoid damage during transits.

3.6.2 MARKINGS

The following details shall be marked on the packing:

- i) Name and address of the consignee
- ii) Purchase Order No:
- iii) Name of supplier
- iv) Description of material
- v) Tare weight
- vi) Gross weight

Section -4

GUARANTEED AND TECHNICAL PARTICULARS OF MS FLAT

S. No.	PARTICULARS	DATA
1)	Manufacturer's name	
2)	Chemical composition & grade	
3)	Thickness (mm)	
4)	Width (mm)	
5)	Cut length (m)	
6)	Weight of flat (kg/m)	
7)	Applicable standards	

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SECTION - 5

CHECK LIST FOR MS FLAT

Put a tick mark (√) in 'YES/NO' Column if the specified requirement is met, or put a (X) mark, if the specified requirement is not met and give comments in the "Remarks" column.

S. No.	Parameters	Specified Requirement	Yes/No	Remarks
1.	Chemical composition & mechanical properties	Grade –A(Item designation –Fe410W) of IS :2062		
2.	Size	As per BOQ		
3.	Cut Length	4 m to 6 m		
4.	Approximate weight (kg/m) of MS flat	As per cl. No. 2.1 of section -1		
5.	Packing and marking	As per cl. No. 3.6 of section -3		