



BHARAT HEAVY ELECTRICALS LIMITED

TRANSMISSION PROJECTS ENGINEERING MANAGEMENT

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TYPE OF DOC.	EQUIPMENT SPECIFICATION	NAME	D.K.Mandal	Manoj Kumar	Satish Nayar
TITLE STANDARD SPECIFICATION FOR M.S.ROD	SIGN	Sd/-	Sd/-	Sd/-	
	DATE	14.07.04	15.07.04	15.07.04	
	GROUP	TBEM	W.O. No		
CUSTOMER					
PROJECT					
LOA No.					

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02	26.11.12	<i>Am</i>	<i>Am</i>	Sd/-	Standard Quality plan included
01	31.10.12	Sd/-	Sd/-	Sd/- <i>Rajesh</i>	ASTM A576 has been included and cut length requirement revised.
Rev No.	Date	Altered	Checked	Approved	REVISION DETAILS
Distribution			To		
			Copies		

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SECTION - 1

SCOPE SPECIFIC TECHNICAL REQUIREMENTS AND QUANTITIES

1.0 SCOPE

This technical specification covers the design, manufacture, testing at works and despatch (As applicable) of M.S. ROD, required for the under ground earthing system.

- 1.1** The M.S. Rod shall be of length 6 m to 12 m.
- 1.2** The rod shall comply with the technical requirements brought out in Section-2 of the specification.
- 1.3** The enclosed standard quality plan has to be followed.

It may be noted that no deviations from specification shall be acceptable and length of MS Rod must be in the range as specified above.

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SECTION - 2

EQUIPMENT SPECIFICATION

2.1 GENERAL

This section covers the general technical requirements of MS Rod. In case of any discrepancies between the requirements mentioned in this section and those specified in other sections of this specification, the latter shall prevail and shall be treated as binding requirement.

2.2 APPLICABLE STANDARDS

The conductor to be supplied shall conform to the following Indian Standards :

Specification for Rolling : IS: 1852:1985
And cutting tolerance for
Hot Rolled Steel Products

Steel for General Structural : IS: 2062-2011
Purposes

Round & Square Bars for : IS: 1732-1989
General Engg. Purposes

Standard Specification for
Steel bars, carbon hot wrought
Special Quality : ASTM A576-90b

Note: Latest revisions of all the mentioned standards have to be followed.

2.3 TECHNICAL REQUIREMENTS

- 2.3.1 The material to be supplied shall comply with the requirements specified for Grade-A designation Fe410WA of IS 2062-2011 or grade SAE1018 as per ASTM A576-90b.

The material shall be in sound condition of recent manufacture. The finished product shall be adeptly and cleanly rolled to the dimension and sections specified. The finished material shall be free from defects, loose mill scale, slag, fillings, rust etc. The rod shall be manufactured by hot rolled process.

2.4 TESTS

The material shall be subject to all the routine tests as per IS: 2062-2011/ASTM A576-90b. Enclosed Quality plan shall be followed for witnessing/conducting of tests.



Project: Extension of 765/400kV S/S, Bara TPS (U.P.)
Customer: Uttar Pradesh Transmission Corporation Ltd.

Section-3: Project Details & General Specifications

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SECTION - 3

PROJECT DETAILS AND GENERAL SPECIFICATIONS

GENERAL TECHNICAL REQUIREMENTS

1.0 PROJECT DETAILS

Customer : Uttar Pradesh Transmission Corporation Ltd. (UPPCL)
Project Title : Extension of 765/400kV S/S, Bara TPS (U.P.)
Project Location : District:- Allahabad, Uttar Pradesh, India
Nearest Railway station : Allahabad (North Eastern Railways)
Nearest Airport : Allahabad

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SECTION 4

GUARANTEED TECHNICAL PARTICULARS

1. Nominal Diameter :
2. Material grade :
3. Finish :
4. Tolerance :



QUALITY PLAN

ITEM: MS RODS		PROJECT	
QP NO: TBQM-STD-MSR		PACKAGE / CONTRACT	
REV/02			
DATE: 23.11.2012			
Page 1 of 1		CONTRACTOR: BHEL	
REFERENCE DOCUMENT		ACCEPTANCE NORM	
EXTENT OF CHECK		TYPE OF CHECK	
CATEGORY		CHARACTERISTIC CHECKED	
3		4	
5		6	
7		8	
9		10	
11		12	
13		14	

S.NO	COMPONENT / OPERATION	CHARACTERISTIC CHECKED	CATEGORY	TYPE OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	FORMAT OF RECORD	AGENCY	REMARKS
									P W V	
1.0	MS RODS									
A)	Visual defects, straightness & dimensional conformity	Visual & dimensional	Major	Visual and Measurement	Random samples	As per tech. specification and relevant standard mentioned therein	As per tech. specification and relevant standard mentioned therein	Inspection report	C/N	MS rods to be sourced from prime manufacturers like SAIL / TISCO / RINL
B)	Chemical properties as per relevant standard	Chemical composition	-do-	Chemical	As per tech. specification and relevant standard mentioned therein	-do-	-do-	Test report	C/N	Sampling shall be done as per relevant standard mentioned in the technical specification.
C)	Mechanical properties (as applicable) as per relevant standard	Mechanical properties	-do-	Physical	-do-	-do-	-do-	-do-	C/N	-do-

Note:

1. Supplier shall arrange for witness of testing for Chemical & mechanical tests at their works / NASL approved lab.

LEGEND:

M - SUPPLIER / SUB SUPPLIER
C - BHEL / NOMINATED INSPECTION AGENCY
N - CUSTOMER / CUSTOMER NOMINATED AGENCY
CHP - CUSTOMER HOLD POINT
JIR - JOINT INSPECTION REPORT

P - PERFORMED BY
W - WITNESSED BY
V - VERIFICATION BY
IR - INSPECTION REPORT

APPROVED BY: D. G.M. (I & Q.M.)
AJAY KUMAR CHOWDHARY
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erection procedures for Purchaser's consideration/ approval. It shall be sole discretion of Purchaser to accept or reject such alternatives and Purchaser's decision shall be binding on Bidder.

6.6 EQUIPMENT MAKES

6.6.1 The Bidder shall supply the equipment of his own make for which the Bidder is also the manufacturer provided such equipment/s meet the prequalifying conditions for individual equipment.

6.6.2 The bought-out items shall also meet the prequalifying conditions for individual equipment and their makes shall be as per approval of Engineer of Contract.

6.7 PREQUALIFYING CONDITIONS FOR THE SUPPLY OF INDIVIDUAL EQUIPMENTS/ MATERIALS:

6.7.1 (A). OPERATIONAL EXPERIENCE

Offered equipment should have given three years proven trouble free operational service in tropical climate. However in case of equipment manufactured in India under valid foreign collaboration, operating experience in tropical climate of offered collaborator's equipment, shall also be acceptable provided copy of valid collaboration agreement for the offered equipment is submitted with the proposal. Further in case of offer of imported equipment, three year operating experience shall be considered in respect of those areas only which are similar to the tropical conditions prevailing in India.

6.7.2 (B). MANUFACTURING EXPERIENCE

The indigenous manufacturers or their foreign collaborator must have manufactured at least 20% of the specified quantities of each item of identical or similar equipment.

6.7.3 (C). TESTING FACILITIES :

The manufacturer must have all necessary facilities at their works for carrying out such routine and acceptance tests as prescribed in the relevant ISS/IEC and any other routine and acceptance test as specified in the specification. Documentary evidence of existence of such facilities will be submitted along with the proposal.

6.7.4 (D). TYPE TEST FOR INDIGENOUS OR FULLY IMPORTED EQUIPMENTS:

The offered equipment must have been fully type tested as per relevant ISS and/or any other specified international standards, during the last 5 years period to be reckoned from the date of opening of tender. Photo copy of such type test reports/ certificates must be submitted along with the proposal. The test certificates of proto type manufactured and tested by foreign collaborators of the tenderers at their works shall not be acceptable for indigenously manufactured equipment.

7.0 PRICES

The Prices of all the items and services quoted in the Price Schedules shall be shall remain "Fixed and Firm" in all respects during the currency of the contract.