



BHARAT HEAVY ELECTRICALS LIMITED

TRANSMISSION PROJECTS ENGINEERING MANAGEMENT

DOCUMENT No.	TB-235-509-039 TB-235-509-039	REV 02	Prepared	Checked	Approved
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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DETAILS

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02	26.11.12	Sd/-	Sd/-	Sd/-	Standard Quality plan included
01	31.10.12	Sd/-	Sd/-	Sd/-	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.

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.

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SECTION 3

PROJECT DETAILS AND GENERAL SPECIFICATION

As applicable for various projects



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SECTION 4

GUARANTEED TECHNICAL PARTICULARS

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



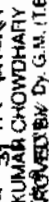
QUALITY PLAN

ITEM: MS RODS		PROJECT: PACKAGE / CONTRACT	
OP NO: TBOM-STD-MSR		CONTRACTOR: BHEL	
REV: 02		FORMAT OF RECORD	
DATE: 23.11.2012		AGENCY	
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REFERENCE DOCUMENT		REMARKS	
ACCEPTANCE NORM		12 13	

S.NO	COMPONENT / OPERATION	CHARACTERISTIC CHECKED	CATEGORY	TYPE OF CHECK	EXTENT OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORM	9	10	11	12	13
1	2	3	4	5	6	7	8					
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	V	M	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	V	M	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-	V	M	C/N	-do-

Note:

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

LEGEND:		P - PERFORMED BY	
M - SUPPLIER / SUB SUPPLIER	C - BHEL / NOMINATED INSPECTION AGENCY	W - WITNESSED BY	
N - CUSTOMER / CUSTOMER NOMINATED AGENCY	CHP - CUSTOMER HOLD POINT	V - VERIFICATION BY	
JIR - JOINT INSPECTION REPORT	TC - TEST CERTIFICATE	IR - INSPECTION REPORT	
APPROVED BY: 		APPROVED BY: 	
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