

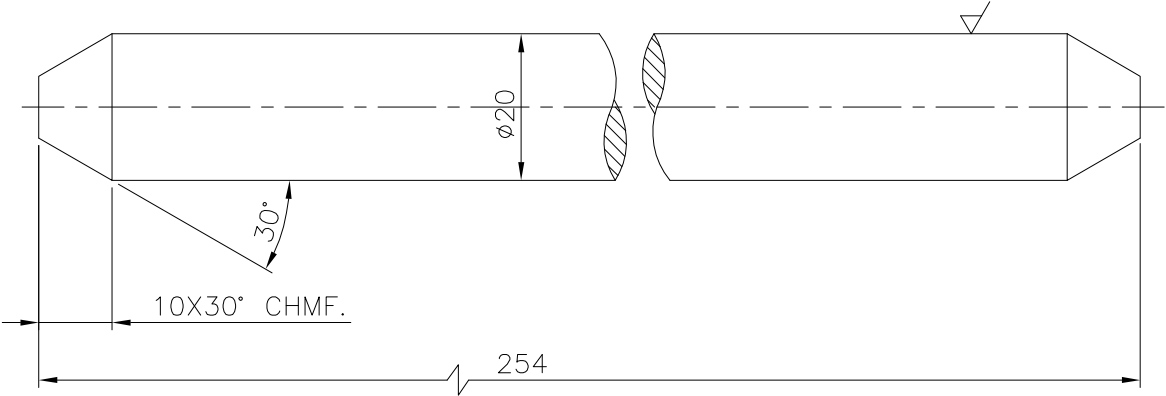
FIRST ANGLE PROJECTION



(ALL DIMENSIONS ARE IN mm)

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REV.	DATE	ALTERED	VK	REV.	DATE	ALTERED	RBV	-SD-	ADDITIONAL
02	24.02.18	CHECKED	AT	01	17.01.09	CHECKED	OPV	-SD-	INFORMATION
		APPROVED	AT			APPROVED	MV	-SD-	
DRG. DIGITIZED & M20 THD. x 50 LG. WAS ON. TOTAL LENGTH 254 WAS 410.					DRG. UPDATED & DIGITIZED. SYTLE LIST ADDED.				STATUS OF DRAWING
									DISTRIBUTION TME-1, TNX-1 OF PRINTS TAM-3

STYLE LIST		
VAR.	ITEM.NO.	STYLE NO.
—	IT.001	BP9014820569



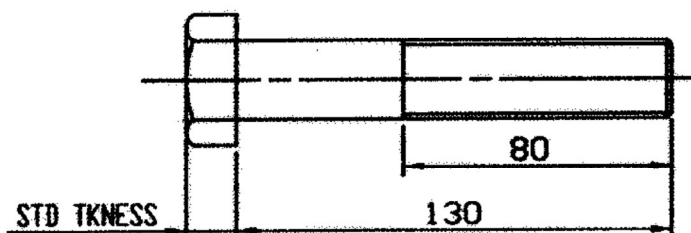
REF. DRG. NO.																							
REMARKS		75	25	27	29	DESCRIPTION		58	59	46	AA1010208128		54	55	56	68	0.60						
		ITEM NO.		STD				AA10108		UNIT WT.													
												MATL. CODE		UNIT		QTY.							
										MATL. SPCN.													
SIGN. & DATE		28 → CARD TYPE-3				28 → CARD TYPE-1				28 → CARD TYPE-2													
INVENTORY NO.		<div><div><div>बी एच ई एल</div><div></div></div><div>BHARAT HEAVY ELECTRICALS LTD. BHOPAL</div></div>											NAME		SIGN		DATE		NO. OF VAR.				
		DRN	VIJAY		Vijay kr.		24.01.18		NO. OF VAR.														
		CKD	AT		Atinvarai		24.01.18		—														
		APPD	AT		Atinvarai		24.01.18		—														
DEPT		TME		GRADE OF UNTOL.DIM.				SCALE		WEIGHT (K.G.)		REF. TO ASSY. DRG.				ITEM NO.		NO. OF ITEM					
CODE		405		AA0230208 M				NTS		0.60		14038140054				007		001					
TITLE		CORE STUD TA7005BY										DRAWING NO.										REV.	
												44038142025										02	
												SHT. No.					01					NO. OF SHT.	

## FIRST ANGLE PROJECTION

ALL DIMENSIONS IN MM

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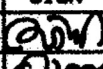
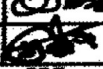
REV.	DATE	ALTERED	REV.	DATE	ALTERED	ADDITIONAL INFORMATION
		CHECKED			CHECKED	
		APPROVED			APPROVED	
						STATUS OF DRAWING
						DISTRIBUTION OF PRINTS
						TME-1, TNX-1 TAM-3

NOTES: -

1. BOLTS ARE TO IS: 1364 (TABLE 2) AND IS: 1367 (P-8. 8). THREADS AS PER IS: 4218 "6g".
2. BOLTS TO BE PARKERISED TO AA0673616.
3. BOLTS TO BE 100% MCD TESTED TO BP0850178.

SEE NOTES	001	SPECIAL MOUNTING BOLT M24x130LG - P 8. 8	NA	KG	0.56
REMARKS	ITEM NO.	DESCRIPTION	MATL. CODE	A	UNIT WT.
			MATL. SPECN.	C	QTY.

	BHARAT HEAVY ELECTRICALS LTD.		DRN.	NAME	SIGN	DATE	NO. OF VAR
	BHOPAL		CKD.	M. M. JOSHI		24/5/10	
			APPD.	D. P. VERMA		24/5/10	
DEPT TME	UNTO. DIMS. GR.	SCALE NTS	WEIGHT (K. G.) 0.56	REF. TO ASSY. BRG. 04301081001 04300081001 04030040054	ITEM NO. 033 001 053	NO. OF ITEM 001	
TITLE SPECIAL MOUNTING BOLT TA7003BX/CW, TA7005BY				DRAWING NO. 44301081003		REV 00	
				SHEET NO. 01		NO. OF SHEET 01	

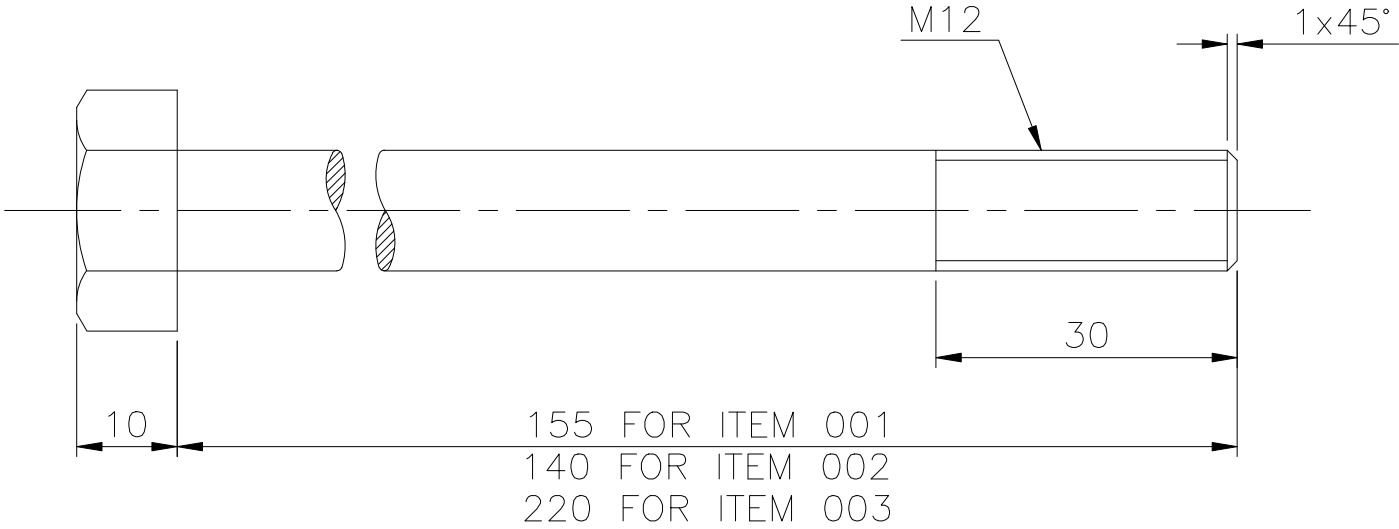
A4 SIZE

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FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

REV.	DATE	ALT.	SDB	REV.	DATE	ALT.	SDB	ADDITIONAL INFORMATION
06	17/10/24	CHK.	S.PAL	05	06/8/22	CHK.	RC	
		APPD.	S.PAL			APPD.	RC	
ZONE	IN BOM ITEM 003 ADDED.			ZONE	DRAWING UPLOADED.			STATUS OF DRAWING
								DISTRIBUTION OF PRINTS
								TME-1, TAM-4, TNX-1




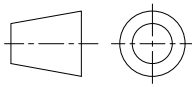
NOTES:-

1. BOLT TO BE ZINC PLATED TO PR. SPEC. AA0673603 AND PASSIVATED TO AA0673604. PLATING THICKNESS 0.013 TO 0.015 MM.

STYLE LIST		
VAR.	ITEM NO.	STYLE NO.
-	IT.001	BP9014823053

		003	19 A/F x 220		AA1010112112			0.20						
					AA10112									
		002	19 A/F x 155		AA1010112112			0.14						
					AA10112									
		001	19 A/F x 170		AA1010112112			0.15						
					AA10112									
59	64	65	75	25	27	29	58	59	34	45	55	56	58	65
VAR00	REMARKS		ITEM NO.	DESCRIPTION				STD	MATL. CODE		A	UNIT	UNIT WT.	
									MATL. SPCN.		C		QTY.	
28 —→ CARD TYPE-3			28 —→ CARD TYPE-1					28 —→ CARD TYPE-2						

REF. DRG. NO.  
SIGN. & DATE  
INVENTORY NO.

<div><div>बी एच ई एल</div><div></div></div> <div>BHARAT HEAVY ELECTRICALS LTD. BHOPAL</div>						NAME	SIGN	DATE	NO. OF VAR.
					DRN.	MKS	—SD—	10.04.89	
					CHD.	BLB	—SD—	13.04.89	
					APPD.	TC	—SD—	13.04.89	
DEPT.	TME	UNTOL. DIMS. GR.  AA0230208 M		SCALE  NTS	WEIGHT (K.G.)	REF. TO ASSY. DRG.		ITEM NO.	NO. OF ITEM
CODE	405					04303373002 04303371001		012 018	
TITLE  SPECIAL BOLT TA-7003AZ						DRAWING NO.			REV.
						4 430 33 65 008			06
						SHT. NO.		01	NO. OF SHT.

SIZE A4

## FIRST ANGLE PROJECTION

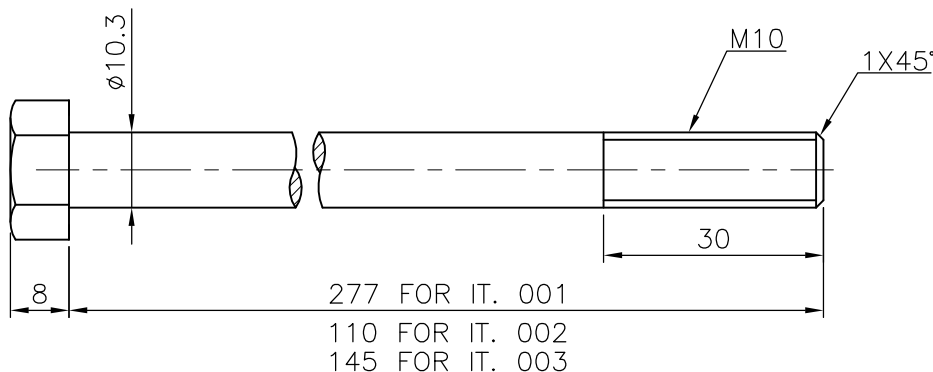
(ALL DIMENSIONS ARE IN mm)

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REV.	DATE	ALTERED	REV.	DATE	ALTERED	RBV	ADDITIONAL
06	29.09.13	CHECKED	05	3-1-09	CHECKED	DPV	INFORMATION
		APPROVED			APPROVED	MV	
FOR IT. 002 DIMN. 110 WAS 120 AND IN BOM LENGTH 118 WAS 128.				DRAWING UPDATED & DIGITISED. STYLE LIST ADDED.			STATUS OF DRAWING
							DISTRIBUTION TME-1 TNX-1 OF PRINTS TAM-3


## STYLE LIST


VAR.	ITEM.NO.	STYLE NO.
—	IT.002	BP9014820437
—	IT.003	BP9014820445



## NOTE:-

ZINC PLATED TO Zn 25(TKNS 0.025MM) PR. SPEC. AA0673603(PLATING)  
AND AA 0673604(PASSIVATION).


REF. DRG. NO.	TA7005	003	SPECIAL BOLT HEX. 19 A/F X153 LG.	AA 1010112112	KG.	0.12
	TA7005	002	SPECIAL BOLT HEX. 19 A/F X118 LG.	AA 10112	KG.	0.09
		001	SPECIAL BOLT HEX. 19 A/F X285 LG.	AA 1010112112		0.185
				AA 10112		
REMARKS	7525 2729	ITEM NO.	DESCRIPTION	58 59 46	54 55 A C	56 68 UNIT WT.
						71 QTY.
SIGN. & DATE	28 → CARD TYPE-3		28 → CARD TYPE-1		28 → CARD TYPE-2	
	 BHARAT HEAVY ELECTRICALS LTD. BHOPAL		DRN	NAME	SIGN	DATE
			CKD	TC	Sd	12.5.95
			APPD	TC	Sd	12.5.95
INVENTORY NO.	DEPT	GRADE OF UNTOL.DIM.	SCALE	WEIGHT (K.G.)	REF. TO ASSY. DRG.	ITEM NO.
	TME	AA0230208	NTS		04030040054	018
	CODE	M			37164434003	006
	405				14036040015	007
TITLE					DRAWING NO.	REV.
SPECIAL BOLT					47164434001	06
TA7005					SHT. No.	NO. OF SHT.
15					01	01


	<h1 style="text-align: center;">CORPORATE PURCHASING SPECIFICATION</h1>			AA10108	
				Rev No.11	
				PREFACE SHEET	
<h2>STRUCTURAL STEEL-STANDARD QUALITY</h2> <h3>(PLATES, SECTIONS, STRIPS, FLATS &amp; BARS)</h3> <p>FOR INTERNAL USE ONLY</p> <p>REMOVE THIS PREFACE BEFORE ISSUE TO SUPPLIERS</p> <p><b>Equivalent/Comparable Standards:</b></p> <ol style="list-style-type: none"> <li>INDIAN : IS : 2062 – 2011, Gr: E250, Quality A</li> <li>AMERICAN : ASTM A131M – 2013</li> <li>JAPANESE : JIS G3106 – 2008</li> <li>EUROPEAN : EN 10025 – 2:2004 Gr. S275JR</li> </ol> <p><b>Suggested/Probable Suppliers and Grades:</b></p> <ol style="list-style-type: none"> <li>M/S TISCO : TISTEN 42</li> <li>M/S SAIL : i) MA 300 HY ii) Lloyds, Gr :A iii) IS : 2062, Gr : A</li> </ol> <p><b>User Plants and Replaced Plant Specifications/References:</b></p> <ol style="list-style-type: none"> <li>HEP, BHOPAL : PS 10108</li> <li>TP, JHANSI : PS 10108</li> <li>HEEP, HARDWAR : 0500.001</li> <li>HPEP, HYDERABAD : HY0210299</li> <li>HPBP, TIRUCHY :</li> </ol>					
<b>Revisions:</b> As per Cl. No. 38.1 of MOM of MRC-S&GPS			<b>APPROVED:</b> INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(S&GPS)		
Rev No.11	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 <sup>st</sup> Issue
Dt:22-02-2014	Dt:	Year:	16 HPEP, Hyderabad	Corp.R&D	July, 1976

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	<h1 style="margin: 0;">CORPORATE PURCHASING SPECIFICATION</h1>	<div style="border-bottom: 1px solid black; padding: 2px;">AA10108</div> <div style="border-bottom: 1px solid black; padding: 2px;">Rev No. 11</div> <div style="padding: 2px;">PAGE 1 of 2</div>			
<h2 style="margin: 0;">STRUCTURAL STEEL-STANDARD QUALITY</h2> <h3 style="margin: 0;">(PLATES, SECTIONS, STRIPS, FLATS &amp; BARS)</h3> <h3 style="margin: 0;">(ORDERING DESCRIPTION)</h3>					
<p><b>1.0 GENERAL:</b></p> <p>This specification governs the quality requirements of structural steel plates, strips, flats, bars and sections such as angles, beams, channels and tees etc. of IS: 2062 – 2011, Gr: E250, Quality A</p> <p><b>2.0 APPLICATION:</b></p> <p>For general engineering purpose.</p> <p><b>3.0 CONDITION OF DELIVERY:</b></p> <p>Plates, Bars &amp; Sections: Hot rolled in straight lengths without twists &amp; Bends</p> <p><b>4.0 COMPLIANCE WITH NATIONAL STANDARDS:</b></p> <p>Material shall comply with the requirements of IS: 2062 – 2011, Gr: E250, Quality A</p> <p>Material offered to EN 10025-2:2004 Gr. S275JR is also acceptable. The tolerance on dimensions for plates shall comply with EN 10029.</p> <p><b>5.0 DIMENSIONS AND TOLERANCES:</b></p> <p><b>5.1 DIMENSIONS:</b></p> <p><b>5.1.1 Sizes</b></p> <p>Material shall be supplied to the dimensions specified on BHEL Order.</p> <p><b>5.1.2 Length</b></p> <p>Unless otherwise specified, hot rolled bars and sections shall be supplied in 3 to 6 metres length.</p> <p><b>5.2 Tolerances:</b></p> <p><b>5.2.1</b> The tolerances on hot rolled material shall comply with IS: 1852. However, no plate shall be under the specified thickness at any point.</p>					
Revisions: As per Cl. No. 38.1 of MOM of MRC-S&GPS		<b>APPROVED:</b> INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(S&GPS)			
Rev No.11	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 <sup>st</sup> Issue
Dt:22-02-2014	Dt:	Year:	18/09/2025 HPEP, Hyderabad	Corp.R&D	July, 1976

AA10108	<div style="text-align: center;"> <b>CORPORATE PURCHASING SPECIFICATION</b> </div>	
Rev No. 11		
PAGE 2 of 2		

**5.2.2 Straight for hot rolled bars:**

Unless otherwise specified, the permissible deviation in straightness shall not exceed 5 mm in any 1000 mm length.

**6.0 HARDNESS (BRINELL):**

When tested in accordance with IS: 1500, the material shall show a brinell hardness in the range of 120-156 HB.

Note: Hardness test shall be conducted only when tensile test cannot be performed.

**7.0 TEST CERTIFICATES:**

Unless otherwise specified, three copies of test certificates shall be supplied.

In addition, the supplier shall ensure to enclose one copy of the test certificate along with their dispatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information.

AA10108 Rev.11 / IS:2062 Grade: E250 Quality A / EN 10025-2 Gr. S275JR,

BHEL order no., Melt no. Size, Results of chemical analysis and Mechanical tests, Supplier's name, Identification no. TC no., Signature of competent authority etc.

**8.0 PACKING AND MARKING:**


Plates shall be transported suitably to avoid damage during transit.

For plates below 10 mm thick, each pile (preferably of 16 plates) and each plate 10 mm thick & over shall be marked with melt no. AA10108, BHEL order no., Supplier's name, Identification no., Size & weight on any one corner and encircled with paint preferably of white colour.


**9.0 REFERRED STANDARDS (Latest publications including amendments):**

1) IS: 1500                      2) IS: 1852                      3) EN 10029



	<b>CORPORATE PURCHASING SPECIFICATION</b>			AA10112		
				Rev No. 07		
				PAGE 1 of 4		
<b>BRIGHT STEEL BARS AND SECTIONS (STANDARD QUALITY)</b>						
<b>1 GENERAL:</b>  This specification governs the quality requirements of Bright Steel Bars and Sections of standard quality, such as I-beams and equal angles required in very small sections.						
<b>2 APPLICATION:</b>  Bars are used in the manufacture of threaded and machined components for general engineering purposes. Sections are used as stator spacer plate vents in generators.						
<b>3 CONDITION OF DELIVERY:</b>						
<b>3.1</b> Round Bars - Class 4, surface quality. Up to 50 mm diameter - Cold drawn.  Above 50mm diameter - Cold drawn or Hot rolled, turned and polished						
<b>3.2</b> Rectangular/Square/Hexagonal Bars - Class 3, surface quality. All sizes - Cold drawn.						
<b>3.3</b> Sections - Class 4, surface quality. All sizes - Cold drawn						
<b>3.4</b> Bars and sections shall be straight, with their ends sheared, square and true and shall have a smooth surface.						
<b>3.5</b> The bars and sections shall be given a clear temporary rust preventive (TRP) coating to avoid corrosion during transit and storage. Black TRP coating is not acceptable.  Clear TRP used shall be free from pungent smell.  The following clear TRP's are suggested:						
a) Servo RP 150 - M/s Indian Oil Corporation b) HE - 1612 - M/s. BHEL, Bhopal c) Rustilo DW-901 - M/s. Indrol Lubricants and Specialties Ltd. d) Rustpro Special - M/s. Tide water oil co. e) Any other clear TRP conforming to IS: 1154						
<b>4 COMPLIANCE WITH NATIONAL STANDARDS:</b>  The material shall comply with the requirements of the following National standards and also meet the requirements of this specification.  IS: 9550-2001 : Bright steel bars						
<b>Revisions:</b> CI 27.2.d of MOM of MRC-S&GPS				<b>APPROVED:</b> INTERPLANT MATERIAL RATIONALISATION COMMITTEE – MRC(S&GPS)		
Rev No.07	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 <sup>st</sup> Issue	
Dt:15-06-2005	Dt:	Year:2019	20 HEP, Bhopal	Corp.R&D	September 1976	

RA5302

AA10112	<b>CORPORATE PURCHASING SPECIFICATION</b> 
Rev No. 07	
PAGE 2 of 4	

**5 DIMENSIONS AND TOLERANCES:**

**5.1 Sizes:**  
Bars shall be supplied to the dimensions specified in BHEL order.

**5.2 Tolerances:**

**5.2.1 Rectangular/Square/Hexagonal/Flat Bars:**  
Unless otherwise specified, tolerances on dimensions shall be as follows:  
  
For drawn round bars and turned bars h10 to table 2 of IS:9550  
  
For hexagonal and square drawn bars upto and including 80mm h11 and above 80mm h12 according to table 2 of IS:9550  
  
For drawn flats in accordance with table 3 and 4 of IS:9550  
  
For ground products in accordance with table 1 and 2 of IS:9550

**5.2.2 Sections:**  
As specified in BHEL order/drawing.

**5.3 Length:**  
Bar and sections shall be supplied in lengths of 2.5 to 4.5 meters with maximum 10% of shorts of not less than 1.5 meters.

**5.4 Straightness:**  
Unless otherwise agreed to, the permissible deviation shall not exceed 1.5mm in any one meter length. Bars and sections shall be free from twists and bends.

**6 MATERIAL:**  
The rolled bars used for purpose of producing the bright bars shall be such, so as to ensure freedom from segregation, piping and other harmful defects.

**7 MANUFACTURE:**  
Steel shall be manufactured by the open-hearth, electric, basic oxygen or a combination of these processes.

**8 FREEDOM FROM DEFECTS:**  
All finished steel bars and section shall be sound and free from internal and surface defects. They shall be bright and clean.

**9 SURFACE CONDITION:**

**9.1 Round Bars and Sections:**  
Shall be entirely free from cracks and other surface defects.

**9.2 Rectangular/Square/Hexagonal Bar-Type '3' Finish:**  
Shall comply with IS: 9550, Class 3 of table 5.

**10 CHEMICAL COMPOSITION:**  
The melt analysis of steel and the permissible variation in the composition of the material form the melt analysis shall be as follows:

		AA10112
		PAGE 3 of 4

Element	Melt analysis percent, max	Permissible variation percent
Carbon	0.25	± 0.02
Sulphur	0.040	+ 0.005
Phosphorus	0.040	+ 0.005

## 11 TEST SAMPLES:

One sample for chemical and tensile test shall be selected from finished steel for every 20,000 kg or part thereof, with a minimum one per heat.

## 12 MECHANICAL PROPERTIES:

When tested in accordance with IS:1608, the test pieces shall show the following properties:

### 12.1 Rectangular/Square/Hexagonal/Section - Cold Drawn:

Tensile Strength : 440 N/mm<sup>2</sup>, min

Elongation on  $5.65\sqrt{S_0}$  gauge length : 8 – 20%

### 12.2 Round Bars:

#### 12.2.1 Bars upto 50mm Diameter – Cold Drawn

Tensile Strength : 440 N/mm<sup>2</sup>, min

Elongation on  $5.65\sqrt{S_0}$  gauge length : 8 – 20%

#### 12.2.2 Bars above 50mm Diameter:

Cold drawn or hot rolled, turned and polished.

Property	Hot rolled, turned and polished	Cold drawn
Tensile strength, min.	: 410 N/mm <sup>2</sup>	440 N/mm <sup>2</sup>
Elongation on $5.65\sqrt{S_0}$ gauge length	: 23%, min	OR 8-20%

## 13 TEST CERTIFICATES:

Three copies of test certificates shall be supplied, unless otherwise stated on the order.

In addition, to the above, the supplier shall ensure to enclose one copy of the test certificate along with their despatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information:

AA10112; Rev. No. 07 :

BHEL order No,

Supplier's Reference:

Name

Identification No.

Melt No.

Results of Tests:

Dimensional inspection.

Results of Chemical analysis and mechanical tests.



## **Duly filled Technical Pre-Qualification Requirements to be submitted along with the offer by vendor**

*For uploading along with the enquiry*

Ref No: TME/PQR/Bolt M12.\_TA7009/TA7003 Rev 01

Dated: 27/04/2024

### **Technical Pre-Qualification Requirements (PQR)**

**Vendor should comply with the following clauses in order to qualify for supply of tendered item (duly filled PQR shall be submitted along with the offer by vendor):**

Cl. No.	Description	Vendor to comment	
		Complied / Not complied (Please tick)	Supporting relevant document to be submitted along with offer
1.	Vendor shall supply item as per drawing no. & description mentioned in the enquiry.	Yes/No	Not Required
2.	The vendor should be the manufacturer of tendered item having in-house available thread rolling facility. Details (machine name, make model, year of commissioning & accuracy) of in-house thread rolling facility for manufacturing of tendered item shall be furnished.	Yes/No	Details of in-house thread rolling facility
3.	Vendor to confirm that it is the manufacturer of the offered item and not the trader.	Manufacturer/ Trader	Not Required
4.	Vendor should have experience of successfully manufacturing & supplying steel bolt/screw of size M12 (or above) and conforming to property class 8.8 (or above) of IS: 1367, Part 3, in preceding 5 years from enquiry opening date.  Vendor to ensure that documents submitted against c) shall correlate with the submitted P.O. copy & document submitted against b) shall correlate with material specification called in PO/drawing.	Yes/No	a. PO copy. b. Material test certificate of supplied item. c. Supply proof i.e. invoice.
5.	For verification of information furnished by vendor, additional documents proofs etc. may be required by BHEL. Vendor to confirm providing the same.	Yes/No	Not Required

#### **Notes:**

1. Compliance of all the points in above T-PQR is mandatory. In absence of compliance of above, vendor's offer is liable to be rejected.
2. Information / compliance/documents submitted by vendor shall be authentic in all aspects. In case any deviation/false information/forged documents are observed, BHEL is free to initiate appropriate punitive proceeding against the supplier.

**Important:** This document is to be filled and submitted along with the offer. This document must be signed by authorized representative of the vendor and should contain the name of representative & seal of the company.