

Enquiry items along with quantities:

It. no	Size & Item description	Technical requirement	Quantity in kg
1	40 mm dia X 3000 mm to 6000 mm LG	Stainless steel round bar to spec AA10721 rev-07 in hot rolled, hardened & tempered condition, covering all requirements as per BHEL spec. Inspection at source to be carried out by BHEL / BHEL's TPIA as per QA plan – QAP/TSD/FMS/10721 rev.01 only.	20000
TOTAL			20000 kg

Above quantities are subject to variation: +10% / -10%.

Pre-qualification criteria:

S. No.	Description of pre-qualification requirement	Vendor Response	
		Complied/ Not complied	Supporting Documents required to accept compliance
1	Manufacturer of steel bar / their authorized representative	YES / NO	Bidders may be either Manufacturers or dealer / reseller / channel partner / distributor etc. If the bidder is not Manufacturer, then he has to submit the valid Authorization dealer/vendor certificate from Manufacturer.
2	Offers of those parties will be considered who or their manufacturer has supplied "Stainless steel round bar" of minimum value INR 11.50 lacs during any one year in last 3 years from date of tender opening.	YES / NO	Relevant PO copies along with proof of supply (invoice copy / completion certificate) to be submitted.

Note:

1. BHEL has right to verify information / confirmation furnished by asking additional documents, proof etc.

ALL THE ABOVE POINT WISE PRE-QUALIFICATION REQUIREMENT ARE TO BE NECESSARILY ACCEPTED BY THE BIDDERS FOR THEIR OFFERS TO BE CONSIDERED FAILING WHICH OFFERS SHALL BE REJECTED.

BHARAT HEAVY ELECTRICALS LIMITED, BHOPAL
MATERIAL MANAGEMENT – STEEL DIVISION

For this Procurement, Government of India Public Procurement (Preference to Make in India), Order 2017 with its amendments and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

*As per the Provisions of this order, please submit **a self-certification complying with the conditions below on company letterhead duly signed by competent authority.***

I, hereby declare on behalf of M/s. that we are participating in the Enquiry No. floated by BHEL, Bhopal (MP), India and shall comply with following:

1. Public Procurement (Preference to Make in India), Order 2017 *with its amendments* and subsequent Orders issued by the respective nodal ministries shall be applicable even if issued after issue of this NIT but before finalization of contract/PO/WO against this NIT.

(a) A supplier will be treated as “**Class-I Local Suppliers**”, if the items quoted by bidder have local content equal to or more than 50%.

(b) ‘**Local Content**’ means the amount of value added in India, which shall be total value of item quoted (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, **in percent**.

2. I hereby declare that our firm qualifies as “**Class-I Local Suppliers**”.

a. The Local Content in the items quoted under this Enquiry is Percent

b. Details of location(s) in India where this value addition shall be done, is/are as follows:

- (a)
 (b)
 (c)

(.....)

For M/s.

(Seal & Sign)

STANDARD QUALITY PLAN

QAP NO:		QAP/TSD/FMS/10721		REV.01	Date: 31/05/2018	
CUSTOMER:		BHEL BHOPAL		VENDOR NAME:		
DESCRIPTION MATERIALS:		STAINLESS STEEL BARS (MARTENSITIC) Gr:X20Cr13 -H&T				
SPECIFICATION		AA10721		Rev. No.	07	
P.I./ENQ.NO./P.O. NO.				Date:		
Sr. No.	Characteristics	Class	Quantum of check	Reference Document	Acceptance Norm	Type of record
01	Chemical composition	Maj	Each Heat	AA 10721	As per spec	TC
02	Visual Examination	Maj	100% of each lot/Heat	AA 10721	Free From Internal surface defect bars & shall be free from twists and bends	TC
03	Dimensional Inspection	Maj	10% of each lot/Heat	AA 10721	As per Spec	TC
04	Heat Treatment	Maj	100% of each lot/Heat	AA 10721	As per spec	TC
05	Identification of test sample	Maj	10% of each lot/Heat	AA 10721	As per spec	TC
06	Micro Structure	Maj	10% of each lot/Heat	AA 10721	ASM Handbook Vol. 9-2004	TC
07	Mechanical properties (Tensile strength, Yield, Elongation hardness & Charpy Impact etc.)	Maj	Each Heat	AA 10721	As per spec	TC
08	Ultrasonic Test	Maj	100% of Bars	AA 19358	As per spec	TC
09	Stamping & Marking	Maj	100% of Bars	AA 10721	As per spec	TC
10	Documentation: TC & Inspection Report	Maj	Verification	AA10721	As per spec	TC
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Legends: Maj = Major, V= Verification, P=Perform, W=Witness, 1=BHEL/BHEL appointed TPIA, 2= Vendor/Sub-Vendor

Prepared By

[Signature]

Approved By

[Signature]

जी. एस. नेतम / G.S. NETAM
उप प्रबंधक (वि.से.) / Dy. Manager (T.S.)
तकनीकी सेवा विभाग / Tech. Services Deptt.
बी.एस.ई.एल., भोपाल / BHEL, BHOPAL



CORPORATE PURCHASING SPECIFICATION

AA 107 21

Rev. No. 07

PAGE 1 OF 4

STAINLESS STEEL BARS (MARTENSITIC) Gr:X 20 Cr 13, HARDENED AND TEMPERED

1.0 GENERAL :

This specification governs the quality requirements of Stainless Steel Bars (Martensitic), Hardened and Tempered.

2.0 APPLICATION :

For general engineering purposes involving stresses under corrosive conditions.

3.0 CONDITION OF DELIVERY :

Hot rolled and hardened and tempered.

For size above 100 mm, forgings in H&T condition are also acceptable.

Bars shall be supplied in the descaled condition.

The ends of bars shall be square and true.

The bars shall be supplied in straight lengths without twists and bends.

4.0 COMPLIANCE WITH NATIONAL STANDARDS :

The material shall comply with the requirements of the following National standard and also meet the requirements of this specification.

EN 10088-3, Gr. X 20 Cr 13 : General Purpose Semi-finished Products, Bars,
Hardened and Tempered : Rods and Sections

5.0 DIMENSIONS AND TOLERANCES :

5.1 Sizes: The bars shall be supplied to the dimensions specified in BHEL order.

5.2 Tolerances:

5.2.1 For Forged bars: The tolerances shall be + 8 mm - 0 mm.

5.2.2 Tolerances on rolled bars shall comply with following specifications:

EURONORM 58: Hot rolled flats for general purposes

EURONORM 59: Hot rolled square bars for general purposes

EURONORM 60: Hot rolled round bars for general purposes

Tolerances as per equivalent IS Standards are also acceptable

1

Revisions:

Cl.29.5.0. of MOM of MRC-S&GPS

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE-MRC (S&GPS)

Rev. No. 07

Amd.No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

Dt: 01-9-2007

Dt :

Year: 2013

BHOPAL

Corp. R&D

MAY, 1978

**5.3 Length :**

Unless otherwise specified, hot rolled bars shall be supplied in lengths of 3 to 6 meters or in multiples with maximum of 10% shorts down to 1 meter.

Forged bars shall be supplied in lengths of 1.5 to 3 metres.

6.0 MANUFACTURE :

Process used for the manufacture of the bars is left to the discretion of the manufacturer. Material shall be manufactured from fully killed steel. Sufficient reduction and discard shall be made from each ingot to ensure freedom from pipe, harmful segregation and other defects.

7.0 HEAT TREATMENT :

The recommended heat treatment is as follows:

Harden in oil / air at temperature of 950-1050°C.

Temper at suitable temperature between 650-750°C.

Details of the actual heat treatment cycle followed shall be specified in the test certificate.

8.0 FREEDOM FROM DEFECTS :

The bars shall be free from internal and surface defects. Bars shall be free from twist and bends.

9.0 CHEMICAL COMPOSITION :

The melt analysis of steel and the permissible variation in the composition of the material from the melt analysis shall be follows :

Element	<u>Melt analysis, percent</u>		Permissible variation, percent,
	min.	max.	
Carbon	0.16	0.25	- 0.01 + 0.02
Silicon	--	1.00	+ 0.05
Manganese	--	1.50	+ 0.04
Chromium	12.00	14.00	± 0.20
Sulphur	—	0.030	+ 0.005
Phosphorus	—	0.040	+ 0.005

Note: Elements not listed in this table shall not be intentionally added to the steel without the agreement of the purchaser except for finishing the cast. All appropriate precautions are to be taken to avoid the addition of such elements from scrap and other materials used in production which would impair mechanical properties and the suitability of the steel.

**10.0 TEST SAMPLES :**

The test samples shall be selected as per EN 10088 Part 3.

11.0 MECHANICAL PROPERTIES :**11.1 Tensile and impact:**

The test pieces shall show the following properties:

Ruling section, mm	Tensile strength, N/mm ²	Yield strength, min N/mm ²	Percent Elongation, min	Impact Strength at Room Temperature, ISO – V, Joules	Hardness BHN
Upto 160mm (Inclusive)	700-850	500	13	25	208-252

Note:

1. The mechanical properties required for sizes above 160 mm shall be as per mutual agreement between BHEL and manufacturer.
2. The tensile test shall be carried out in accordance with IS: 1608 or any reputed National Standard.
3. The charpy impact test shall be performed in accordance with IS: 1499 or any reputed National Standard.

An impact test shall consist of three specimens from a single test location, the average value of which shall be as specified above.

Only one value of the three can be below the specified minimum but in no case below 2/3 of the specified minimum value.

- 4 Hardness shall be informed in the test certificates for information.

12.0 ULTRASONIC TEST:

- 12.1 Each bar above 100 mm shall be tested ultrasonically in accordance with BHEL standard AA 085 01 18 to ensure freedom from internal defects. The norms of acceptance shall be as per category 2 of the above standard.

12.2 Optional tests:

If specified in order, each bar > 40 to 100mm shall be tested ultrasonically in accordance with BHEL standard AA 085 01 18 to ensure freedom from internal defects and the norms of acceptance shall be as per category 2.

**13.0 TEST CERTIFICATES :**

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

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:

BHEL References:

AA 107 21 (Rev. No. 07) : Stainless steel bars (martensitic), Gr: X 20 Cr 13, H&T
BHEL order No.

Supplier's References :

Name
Identification No.
Melt No.
Details of heat treatment.

Result of Tests:

Dimensional inspection.
Results of chemical analysis, mechanical tests and Hardness check called for in this specification.

14.0 PACKING AND MARKING:

The material shall be suitably packed in bundles-Hessian wrapped-to prevent sagging and damage during transit.

Each bar/flat 50 mm in diameter/width across flats shall be stamped with 'AA 107 23', melt No., BHEL order No., at one end or on the end face.

Bars bar/flat upto and including 50 mm in diameter/width across flats shall be bundled together and tied with wire at 3 to 4 places along the length of the bars.

A metal label shall be securely attached to each bundle and shall bear the following information :

AA107 21 : Stainless steel bars (martensitic), Gr: X 20 Cr 13, H&T
BHEL Order No.
Consignment/Identification No.
Melt No.
Size and Weight.
Supplier's Name.

15.0 REFERRED STANDARDS (Latest Publications Including Amendments):

1. EN 10088-3
2. AA 0850118
3. Euronorm 58, 59 & 60