

16

DETAILS FOR RATE CONTRACT

HGE/RC/19-20/

Date- 02.05.19

S. No.	Details required	Remarks
1	Item description	Pole Steel Washer as per drawing and specification no. AA10115 Rev 09.
2	Quantity	As per annexure II
3	Estimated Rate/Kg	Refer Estimate Sheet
4	Duration of Rate Contract	18 months
5	Delivery cycle for each PO against RC	As per delivery schedule mentioned in individual P.O.
6	Order is reqd. on single party or split ordering is desired.	Refer Sl. No. 5 & 6 of Annexure – I
7	Quantity variation	Refer Sl. No. 3 of Annexure – I.
8	Copies of all referred Drawings, for which RC is to be finalized.	Reference drawings are attached at list of sample drawings. However, final drawings will be submitted with each indent.
9	Any other specific terms & condition desired to be included in the enquiry	Items to be supplied as per drawing & indent on fully finished basis.
10	With or without PVC. If PVC applicable, then please specify formula	PVC not applicable.

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Dy. Manager/HGE

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HYDROGENERATOR ENGG. DIVISION

TERMS & CONDITIONS FOR RC OF POLE STEEL WASHER

1. Indents will be raised as per requirement.
2. Dimensions given here are for reference, actual dimension/combination of dimension will be as per drawing which will be attached with each indent.
3. Quantity given is only an estimated requirement. Since the quantity requirement has been arrived on basis of present & anticipated orders, any change in order situation like any project going slow/hold, then BHEL has right to reduce/drop quantity. However, if RC quantity is exhausted during period of RC, then up to +30% of additional quantity can also be ordered.
4. Minimum order quantity for single order in this RC will be 20 Kg for item 02, 03, 05 & 06 (1.0mm & 2.0mm) and 8 kg for item 01 & 04 (0.5mm).
5. Total volume of the work to be distributed among qualified vendors as 60% to L1 and 40% to L2. In case of the L2 vendor refuses to supply at L1 rate, it will be removed from the consideration and the next L2 will be considered. In case all the other qualified vendors refuse to supply at the L1 rate, 100% of the procurement shall be done from the L1 vendor.
6. Quantity on each supplier will be ordered as per condition at Sr. no 5. However, effort may be made so that quantity covered in one indent is ordered on one vendor.
7. BHEL reserves the right to revoke the contract at its discretion at any time without an explanation.
8. Items shall be supplied as per the drawing enclosed with each indent on fully finished basis. Sample drawings enclosed are for reference only. Inspection shall be carried out by BHEL/TPI as per mentioned in PO.
9. Quotation is to be given by bidders on per kg basis and estimation will be done as per s.no. 11. Some sample drawings of Insulation flanges are enclosed for reference.
10. Machining tools, jigs, fixtures, gauges etc., are to be arranged by the vendor. BHEL shall not provide any tools. Items shall be supplied on fully furnished basis.

11. Items to be ordered on per Kg basis and following formula to be used:

Weight per item (as per drawing)	=	W
RC rate per Kg (in ₹)	=	R
Cost per number (in ₹)	=	(W x R)

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Annexure 'II'

HYDROGENERATOR ENGG. DIVISION

**TOTAL ESTIMATED REQUIRMENT (FY 2019-20 & 2020-21)
OF POLE STEEL WASHER**

Item No.	ITEM	DRAWING & MATL. SPEC.	Length (mm)	thickness (mm)	Total Estimated Requirement (kg)	REMARKS
1	Pole Steel Washer	Final drawing shall be provided with each indent. Material Specification- AA10115 Rev 09	500 to 1000 mm	0.5 mm	300	
2				1 mm	600	
3				2 mm	1200	
4			1000 to 2200 mm	0.5 mm	1200	
5				1 mm	600	
6				2 mm	4900	

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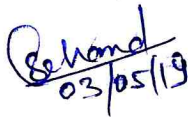
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HYDROGENERATOR ENGG. DIVISION

LIST OF DOCUMENTS & SAMPLE DRAWINGS:

S.NO	ITEM DESCRIPTION	DOC./DRG.NO.
1	Specification	AA10115, Rev.09
2	Steel Washer-sample drgs.*	3 25302 83604, 3 25302 07704

*The drgs. are for referecne only. There shall be sepearte drg. for each order.


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HYDRO GENERATOR ENGINEERING DIVISION

Mandatory Technical Pre-Qualification Requirements (T-PQR)
Mandatory Pre-Qualification Requirements (PQR) for STEEL WASHER
DOCUMENT NO: HGG-1902, Rev 00

S. No.	Description of pre-qualification requirement	Vendor Response	
		Complied/ Not complied	Supporting Documents required to accept compliance
1	Only manufacturers qualify, traders not permitted		Certificate of being Original manufacturer of this item.
2	Compliance to Specification AA10115 Rev 09 & sample drawings.		Point-wise compliance statement of AA10115 Rev 09 and sample drawings.
3	Source of Raw material - Use of only raw material from reputed national/ international brands with TC as per AA10115 Rev09.		Necessary confirmation to be submitted.
4	The company should have adequate manufacturing and in-house testing facilities to conduct required tests for steel washer of dimensions as mentioned in enquiry/ drawing		Necessary self confirmation to be submitted.
5	Quality assurance plan		Compliance of Quality assurance plan to be submitted.
6	Supplier Should have supply experience of atleast 3 purchase orders of similar size & type of steel washer or similar item as per IS:513 in last 7 years with weight of atleast 20kg in single PO.		Copy of PO /completion certificate / invoice to be submitted
7	Vendors who finally qualified in technical PQR have to apply for registration in BHEL vendor directory. (if not registered). Directory details: PMD NO.: AEM03, MATERIAL CATEGORY: 001800, ITEM NO.: 113		Confirmation.

Note:

1. Compliance to above Pre-qualification requirements are mandatory. In absence of compliance of above requirements vendor PQ application is liable to be rejected.
2. BHEL has right to verify information/ confirmation furnished, by asking additional documents proofs etc.

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03/05/19

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CORPORATE PURCHASING SPECIFICATION

AA 101 15

Rev. No. 09

PREFACE SHEET

COLD ROLLED CARBON STEEL SHEET, ANNEALED-DRAWING

**FOR INTERNAL USE ONLY
REMOVE THIS PREFACE SHEET BEFORE ISSUE TO SUPPLIERS**

Comparable Standards:

- | | | | |
|----|--------|---|---|
| 1. | INDIAN | : | IS: 513-1994
Gr: D (Drawing)
Quality : Killed/Semi Killed
Temper : SP-Annealed, skin passed
Surface finish : Matt (Medium or dull)
Surface type : Best |
| 2. | GERMAN | : | DIN 1623-1983, Part 1,
Gr: RRSt-13.03, Surface finish 'm' |

Suggested/Probable Suppliers And Grades:

- | | | | |
|----|----------|---|---|
| 1. | M/s SAIL | : | IS : 513, Gr:D, Killed/Semi Killed.
Temper : SP-annealed & Skin passed,
Matt (Medium or dull finish) Best surface |
|----|----------|---|---|

User Plant References:

- | | | | |
|----|---------------|---|-----------------|
| 1. | BHOPAL | : | BP 101 15 |
| 2. | HEEP, HARDWAR | : | 0500.003 |
| 3. | HYDERABAD | : | HY 021 02 99 |
| 4. | TIRUCHY | : | BM-CQ 10-Part 1 |

Revisions :

Cl: 27.6.8 of MOM of MRC-S&GPS

APPROVED :

**INTERPLANT MATERIAL RATIONALISATION
COMMITTEE-MRC (S&GPS)**

Rev. No. 09	Amd.No.	Reaffirmed	Prepared	Issued	Dt. of 1st Issue
Dt:15.06.2005	Dt :	Year :	BHOPAL	Corp. R&D	JULY, 1976

(10)

	CORPORATE PURCHASING SPECIFICATION			AA 101 15	
				Rev. No. 09	
				PAGE 1 OF 7	
COLD ROLLED CARBON STEEL SHEET, ANNEALED - DRAWING					
1.0 GENERAL: This specification governs the quality requirements of Cold Rolled Carbon Steel Sheet/Coil of drawing quality, Annealed and skin passed condition. Sheets having thickness of 0.40 to 3.15 mm (both inclusive) and widths upto 1250 mm are covered in this specification. 2.0 APPLICATION: Suitable for Drawing/ Welding.. 3.0 CONDITION OF DELIVERY: Sheets/Coils : 0.40 mm to 3.15 mm thick, cold rolled, descaled and oiled sheet/coil shall be supplied in fully annealed and skin passed condition. The size, weight and packing of the coils/sheets shall be as agreed to between the manufacturer and BHEL for indigenous material. For imported material, it shall comply with clause 14.0. Sheets shall be supplied in straight lengths or in coils as specified in BHEL order. Sheets shall be flat and the edges cleanly sheared and truly squared to the specified dimensions. Oils used for rust prevention shall be free from pungent smell. The following oils are suggested : a) SERVO RP 125 of M/s. IOC. b) RUSTOP 387/388 of M/s. HPC c) Bharat TCPF of M/s. Bharat Petroleum d) Any other TRP conforming to IS : 1154 Sheets shall have a matt surface finish and best surface appearance. 4.0 COMPLIANCE WITH NATIONAL STANDARDS: 4.1 Material shall comply with the requirements of IS:513-1994, Gr:D-Drawing, Temper: SP-Annealed & Skin passed; Quality; killed/semi killed; Surface type - Best; Surface finish : Matt.					
Revisions : Cl. 27.6.8 OF MOM OF MRC-S&GPS			APPROVED : INTERPLANT MATERIAL RATIONALISATION COMMITTEE-MRC (S&GPS)		
Rev. No. 09	Amd.No.	Reaffirmed	Prepared BHOPAL	Issued Corp. R&D	Dt. of 1st Issue JULY, 1976
Dt: 15.06.2005	Dt :	Year :			

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4.2 Material offered to DIN 1623-1983, Part 1, Gr : RRSt-13.03, (Material No. 1.0347) Surface appearance: Best surface - 05, Surface finish : Matt 'm', is also acceptable.

4.3 The tolerance on dimensions shall comply with DIN : 1541.

5.0 DIMENSIONS AND TOLERANCES:

5.1 Sizes:

Cold rolled carbon steel sheets/coils shall be supplied to the dimensions specified in BHEL order.

5.2 Tolerances:

The tolerances on sheets and coils shall comply with IS : 513 as detailed below:

5.2.1 Thickness:

Tolerances on thickness of sheets	
Nominal thickness, mm	Tolerance for nominal widths upto 1250 mm
-- 0.40	± 0.04
Above 0.40 up to 0.60	± 0.05
Above 0.60 up to 0.80	± 0.06
Above 0.80 up to 1.00	± 0.08
Above 1.00 up to 1.25	± 0.09
Above 1.25 up to 1.60	± 0.11
Above 1.60 up to 2.00	± 0.12
Above 2.00 up to 2.50	± 0.14
Above 2.50 up to 3.15	± 0.16

5.2.2 Width:

Width	Tolerance
Upto & Incl. 1250 mm	+ 7 mm - 0
Above 1250 mm	+ 10 mm - 0

5.2.3 Length:

Up to and incld. 2000 mm	+ 15 mm - 0
Over 2000 mm	+ 0.75 percent of length - 0

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5.2.4 Camber:

Camber is the greatest deviation of a side edge from a straight line, the measurement being taken on the concave side with a straight line. Camber tolerances are as specified below:

Coils - 20 mm in any 5000 mm length

Cut lengths - 0.4% x length.

5.2.5 Out-of Square Tolerance (for cut lengths) :

1 percent of the width.

(Out-of squareness is the greatest deviation of an edge from a straight line drawn at a right-angle to the other edge of the sheet, touching one corner and extending to the opposite edge).

6.0 MANUFACTURE :

Steel shall be manufactured by open-hearth, electric, basic oxygen or a combination of these processes.

Material shall be manufactured from semi killed/killed steel, preferably aluminum killed.

Rimmed steel is not acceptable.

7.0 FINISH:

Material shall have a medium or dull finish. Pores, roll marks or scratches which do not impair uniform appearance of the finished product are permissible. The sheets shall be free from waviness and the surface shall be ideal for spray painting.

8.0 HEAT TREATMENT :

Sheets and coils shall be fully annealed and skin passed.

9.0 FREEDOM FROM DEFECTS :

The material shall be free from harmful defects such as scale, rust, blisters, laminations, pitting, cracked edges, etc.

10.0 CHEMICAL COMPOSITION :

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

Element	Melt analysis, percent, max.	Permissible variation percent, max.
Carbon	0.12	0.02
Manganese	0.50	0.03
Sulphur	0.040	0.005
Phosphorus	0.040	0.005

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11.0 TEST SAMPLES:

One bend test and hardness test shall be carried out from each lot of 5,000 kg of material or part thereof, per melt per consignment.

Where material of more than one thickness are rolled from the same melt, one additional bend test shall be made for each thickness.

Test pieces shall be cut so that the axis of the bend is parallel to the direction of rolling, viz., transverse direction.

12.0 MECHANICAL PROPERTIES :

12.1 Bend Test :

The test piece shall be capable of being bent cold through 180° close without showing sign of cracks or fracture on the outer convex surface.

Bend test shall be carried out in accordance with IS : 1599.

12.2 Hardness (VICKERS) :

When tested as per IS : 1501, the test pieces shall show a Vickers hardness as given below:

Upto & Incl. 1.25 mm, thick	:	115 HV, max.
Above 1.25 mm, thick	:	125 HV, max.

13.0 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:

AA 101 15, Rev 09/IS:513 Gr:D/DIN 1623 Gr: RRSt 13.03 m,
BHEL Order No,
Melt No,
Size and Quantity,
Results of Chemical analysis and Mechanical tests,
Supplier's name,
Identification No
TC No,
Signature of Competent authority, etc..

14.0 PACKING :

14.1 Packing:

Sheets and Coils shall be suitably packed in bundles to prevent corrosion and damage during transit.

Recommended packing for imported material shall be as shown below. However, other methods of packing is also acceptable if prior agreement of BHEL is obtained in writing by the manufacturer.



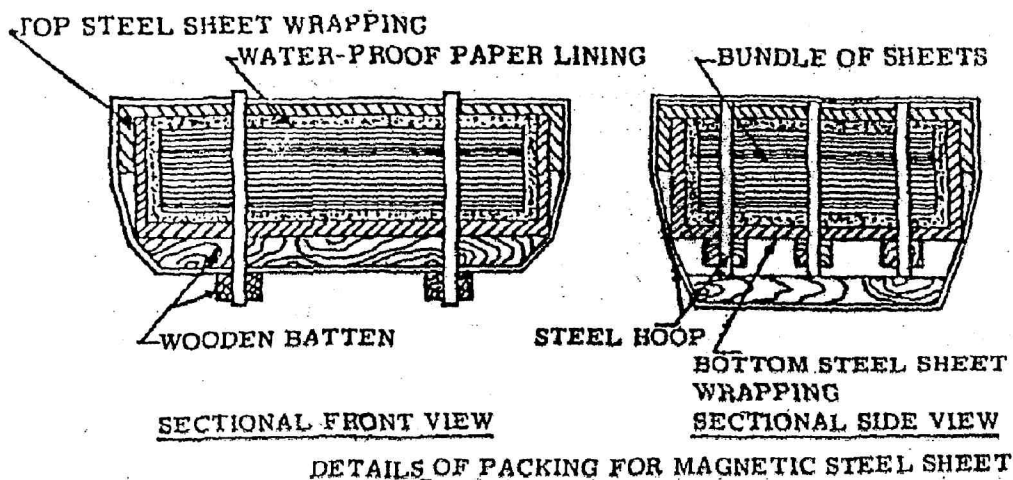
CORPORATE PURCHASING SPECIFICATION

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14.2 Sheets :



Note:

- Water proof paper lining shall be preferably Volatile Corrosion Inhibitor (V.C.I.) Coated Paper with an additional polythene (100 micron) enveloped.
- Approximate weight of each bundle shall be 2 to 3 tonnes. Bundle weighing 2 metric tonnes is however preferred.

14.3 Coils:

The material shall be supplied in coils of continuous strip. The nominal weight of each coil shall be 1800 - 2000 kg.

The nominal internal diameter of coil shall be 500 mm.

Sheet shall be protected to prevent damage and rusting during transit.

Sheet shall be vertically packed according to the instructions and drawings given below:

- An annular protection board shall be placed at either end of the coil.
- The coil should then be wrapped with waterproof anti-rust proof paper by lapping axially all around the circumference.
- The coil shall then be covered by polythylene sheet or anti-rust waterproof paper and the ends sealed properly.
- A galvanized sheet shall be wrapped on the outside of the coil and the top and bottom of the coils. Care shall be taken to ensure that the ends of the top and bottom of the coils extend sufficiently over the inside diameter of the coil.

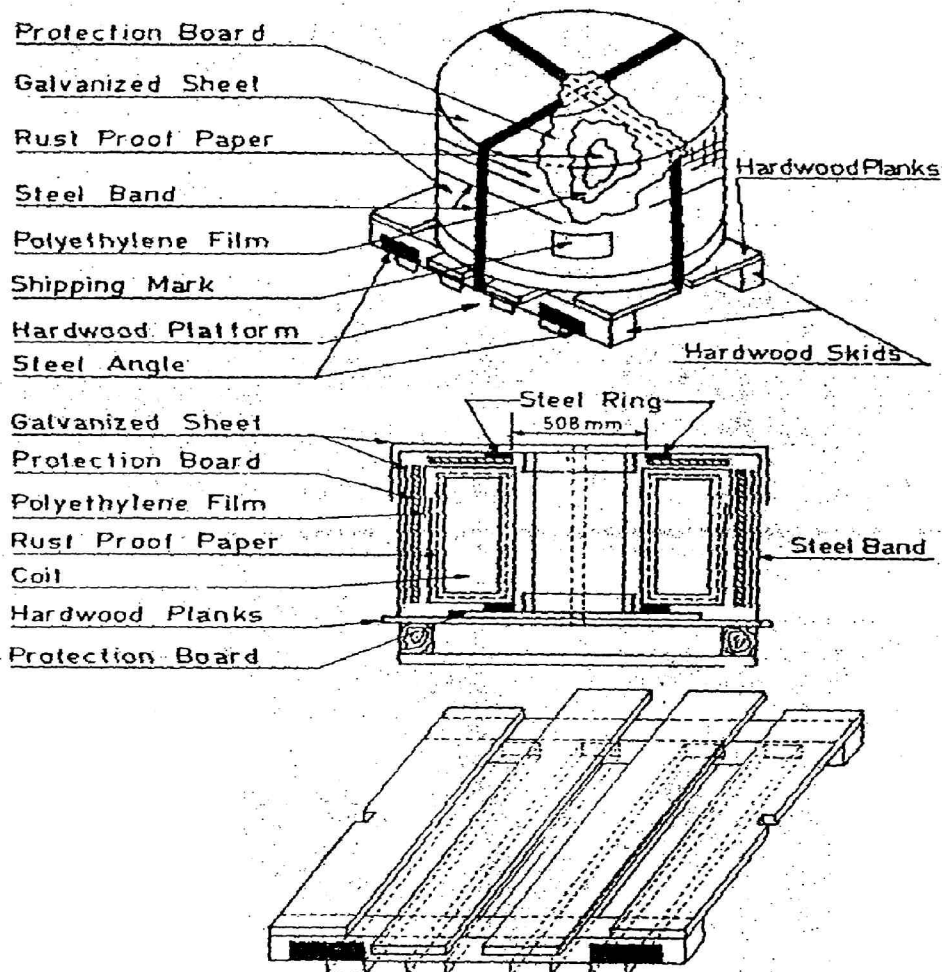
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- e) A galvanized sheet shall be wrapped on the inside of the coil. Care shall be taken that it overlaps sufficiently over the ends of the sheet mentioned in (d) above.
- f) Steel ring made from thick angle sheets shall be placed on the rim of the inner diameter at both ends of the coil. The rings shall be held at either ends at four points by steel bands.
- g) The coil should then be mounted on wooden skids held together by steel bands. Wooden skids must have cutouts to house the steel bands for tight fit and to avoid slippage.
- h) The packing shall ensure that there is no seepage of moisture and the coils reach BHEL in completely rust free condition. It shall be strong enough to withstand handling.
- i) Coils shall be sufficiently tight-wound to prevent collapse to an extent that would preclude their being mounted on a mandrel appropriate to the ordered internal diameter.
- j) Each package should indicate the , Sling Position, for lifting without damage. It is preferable to fix a suitable size of, 'Sheet Steel Angle', at the position where the Sling Rope is to be fitted to avoid slippage/damage/breakage of the wooden skid at four places.



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15.0 MARKING:

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

AA 101 15
BHEL Order No,
Supplier's Name and Identification No,
Melt No,
Size and Weight.

16.0 REFERRED STANDARDS (Latest Publications Including Amendments) :

- | | | |
|--------------|---------------|-----------------------|
| 1. IS : 513 | 2. IS : 1154 | 3. IS : 1501 |
| 4. IS : 1599 | 5. DIN : 1541 | 6. DIN : 1623, Part 1 |

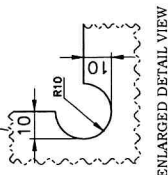
GENERAL INFORMATION FOR CALCULATION (NOT TO FORM ACCEPTANCE CRITERION)

Tensile strength	:	270 - 410 N/mm ²
Yield strength	:	280 N/mm ² , max.
Elongation on 5.65 $\sqrt{S_0}$ gauge length	:	23 percent, min.

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED
IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY

SIGN. & DATE

INVENTORY NO.



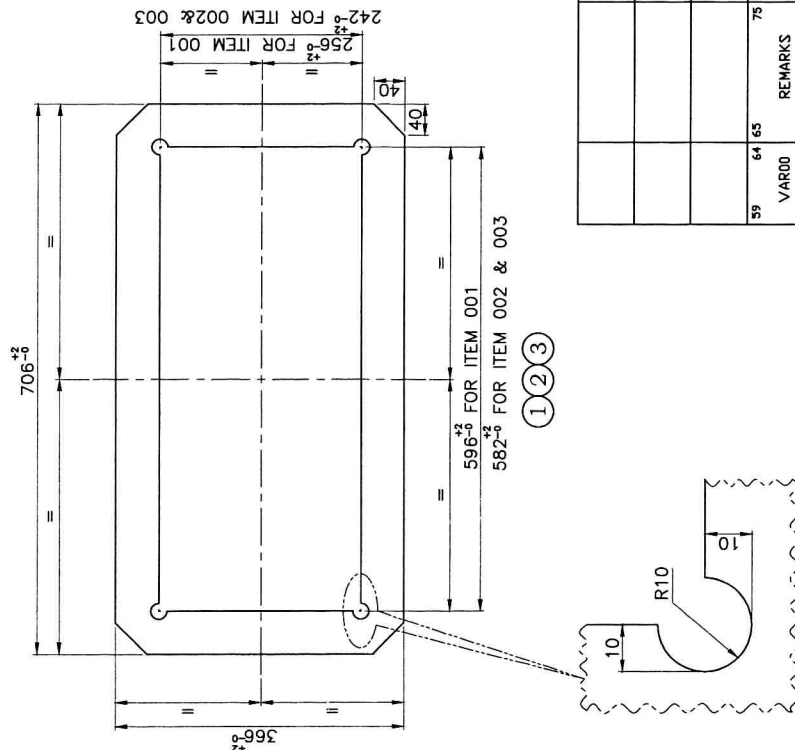
1. ALL SHARP EDGES/CORNERS AND BURRS TO BE REMOVED
2. APPLY ONE COAT OF RED OXIDE PRIMER TO A456101.
3. WASHERS TO BE FREE FROM WRINKLES,WARPING,BEND, TWISTING ETC. AND SHOULD BE FLAT WHEN LAID ON SURFACE PLATE .THERE SHOULD NOT BE ANY BOW.
4. ONLY FIRST QUALITY OF FLAT SHEETS SHOULD BE USED FOR MARKING OF WASHERS.
5. WASHERS TO BE MADE FROM FULL SIZE SHEETS ONLY. NO JOINTS ARE ACCEPTABLE.
6. VENDORS TO CONSIDER RECOVERY OF 50% OF BLANK WHICH WILL BE PRODUCED DURING MFG. & SHALL QUOTE ACCORDINGLY.

59	64	65	REMARKS	75	78	79	25	27	29	DESCRIPTION	58	59	60	77	79	31	34	MATL. CODE	45	UNIT	WT.(KG)	ZONE
VAR00	VAR00													DRAWING NO.	IT.ND.	32	33	46	MATL. SPCL.	54	QTY.	
															VAP					LINE	66	
								003		STEEL WASHER 2 TK.								AA10115		ON	7.330	
								002		STEEL WASHER 1 TK.								AA10115		ON	3.665	
								001		STEEL WASHER 0.5 TK.								AA10115		ON	1.694	

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TECHNICAL REQUIREMENTS:-

1. ALL SHARP EDGES/CORNERS AND BUBBS TO BE REMOVED.
2. APPLY ONE COAT OF RED OXIDE PRIMER TO A456101.
3. ALL SURFACES TO BE PRIMERED.
4. BATH WHEN LAID ON SURFACE PLATE. THERE SHOULD NOT BE ANY BOW.
5. ONLY FIRST QUALITY OF FLAT SHEETS SHOULD BE USED FOR MARKING OF WASHERS.
6. WASHERS TO BE MADE FROM FULL SIZE SHEETS ONLY. NO JOINTS ARE ACCEPTABLE.
7. VENDOR TO CONSIDER RECOVERY OF 50% OF BLANK WHICH WILL BE PRODUCED DURING MFG. & SHALL QUOTE ACCORDINGLY.



ENLARGED DETAIL VIEW

28 → CARD TYPE-3		28 → CARD TYPE-1		28 → CARD TYPE-2		28 → CARD TYPE-4	
VAR00	REMARKS	VAR. ITEM NO.	DESCRIPTION	STB	DRAWING NO.	VAR.	UNIT WT.(KG)
59	64 65	75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	STEEL WASHER 2 TK.	58 59 60	77	89 90 91 92 93 94 95 96 97 98 99 100	1.850
			STEEL WASHER 1 TK.				0.930
			STEEL WASHER 0.5 TK.				0.420

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QUALITY ASSURANCE DEPARTMENT

QA PLAN FOR - STEEL WASHER

QA/HG/571 R-00 Dated 03.05.2019

(SH. 01 OF 01)

QGX-9

S. NO.	COMPONENT /ASSEMBLY/ OPERATION	CHARACTERISTICS	CLASS	TYPE	QUANTUM OF CHECK	REF. DOC.	RECORD FORMAT	AGENCY		REMARKS
								PERFORM	WITNESS	
1.0	INSPECTION AT SUPPLIER'S WORK									
1.1		a) IDENTIFICATION W.R. TO LOT NO./ BATCH NO.	MINOR	REVIEW	100%	AA10115 REV09	SUPP QC RECORD	SUPPLIER	SUPPLIER	
		b) MATERIAL AS PER SPEC, THICKNESS & SUPPLIER TC	MINOR	REVIEW	100%	AA10115 REV09	SUPP QC RECORD	SUPPLIER	SUPPLIER	RECORD REVIEW BY BHEL/TPI
		c) FLATNESS	MINOR	REVIEW	100%	AS PER DRAWING	SUPP QC RECORD	SUPPLIER	SUPPLIER	
1.2		a) FREE FROM SHARP EDGES/ CORNES, BURRS, WRINKLES, JOINTS ETC.	MAJOR	VISUAL	SAMPLE	AS PER DRAWING	SUPP QC RECORD	SUPPLIER	BHEL / TPI	-WITNESS 10% RANDOM SAMPLE.
		b) DIMENSIONAL CHECKS THICKNESS, WIDTH, LENGTH WINDOW SIZE, CHAMFERS ETC.	MAJOR	DIMENSIONAL	SAMPLE	AS PER DRAWING	SUPP QC RECORD	SUPPLIER	BHEL / TPI	
		c) APPLICATION OF RED OXIDE PRIMER	MAJOR	VISUAL	SAMPLE	AS PER DRAWING	SUPP QC RECORD	SUPPLIER	BHEL / TPI	
		d) PACKING	MAJOR	PHYSICAL	SAMPLE	TO AVOID DAMAGE DURING TRANSIT & CORROSION	SUPP QC RECORD	SUPPLIER	BHEL / TPI	

CERTIFICATION :- SUPPLIER SHALL FURNISH 5 COPIES OF TEST CERTIFICATE COUNTERSIGNED BY BHEL / THIRD PARTY INSPECTION (TPI)

INCORPORATING THE FOLLOWING:-

- a) LOT / BATCH IDENTIFICATION
- b) TEST RECORD SHEET FOR TESTS AS PER SL. NO. 1.2

Signature
03/05/19
02/5/19
Signature

HGE

HGM

QHG

QA-HYDRO

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