

 ENQUIRY TWO PART BID BPC 0007 E-TENDER	भारत हेवी इलेक्ट्रिकल्स लिमिटेड, पिपलानी, भोपाल- ४६२०२२ (भारत) सामग्री प्रबंधन विभाग BHARAT HEAVY ELECTRICALS LIMITED, PIPLANI, BHOPAL-462022 (INDIA) MATERIALS MANAGEMENT DIVISION		ENQUIRY NO E5953036 ENQUIRY DATE 11/09/25 ENQUIRY DUE DATE 22/09/25
	TIN NO- 23573000001 ECC NO- AAACB4146PXM009 MPCT NO- HEL/05/01/0001/S15/11/79 PHONE NO : 91-755-2500100 FAX : 91-755-2500023 www.bhel.com		

SUPP NAME AND ADDRESS	SUPP CODE	REV CD	REV NO	REV DATE	NO OF CATY2	NO OF CATY3	ENQ NO OF ITEMS	INDENT NO
	0	1	0	NA	1	1	1	121357006
	GUARANTEE CERTIFICATE		Y	SUPPLY CONDITION SUPPLIER'S IDENTIFICATION MARK SHOULD BE ON EACH JOB.				
	TEST CERTIFICATE		Y					
	INSTRUCTION BOOKLET		N	TECHNICAL CONDITION AS PER DRG.				
	SAMPLE		N					
	GATE PASS		Y	INSPECTION CONDITION AT BHEL BHOPAL.				

NOTE: QUOTE PRICE BOTH IN FIGURES & WORDS. IN CASE OF MISMATCH PRICE IN WORDS WILL BE VALID, QUOTATIONS NOT BEARING ENQUIRY NO AND DUE DATE LIABLE TO BE REJECTED.

SL NO	MATERIAL CODE	DESC	UNIT	ITEM QTY	QTY VR%	LOT NO	LOT QTY	DEST	DELIVERY DATE
1	BP9094822369	OA 7002 AZ, OA6301BX COVER (NDE) TO DRG. NO.24301711013 V-01REV.08. NOTE:- PAINTING TO BE DONE AS PER DRAWING. SUPPLIER'S IDENTIFICATION, PO NO. AND TYPE OF MACHINE TO BE WRITTEN BY WHITE PAINT ON EACH JOB.	NO	20.000	30	1	20.000	213	06/11/25

REMARK REFER NIC E- TENDER PORTAL FOR DETAILS.

DRAWING	Y	PURCH SPEC	Y	CATALOUGE	N	Quality Surveillance Plan	N	TWO PART BID	Y
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NOTE: BHEL, BHOPAL'S Standard Terms & Conditions BP200102 (Latest Revision) form a part of this Enquiry. Bidders may obtain from us copies of these terms and conditions if not already available.

Note: During Bid Evaluation, No loading of price with regard to preferential payment of within 45 days will be made on vendore falling under MSMED ACT - OCT 06

Please submit your lowest quotation in sealed envelop essentially superscribed with ENQUIRY NO, DUE DATE AND PARTY'S NAME so as to reach at TENDER ROOM, GROUND FLOOR, ADM BUILDING, BHEL, PIPLANI BHOPAL-462022 by 11.00 am of due date.

1. This is only a request for Quotation & not an order.
2. Small Scale industries should indicate SSI Regn. No. in Quotation/invoice.
3. In case you are not making an offer against this Enquiry, we request you to post a regret letter.
4. Indian vendors to please indicate GSTIN on their quotation.

SPECIAL REMARK: Bid to be submitted through e-procurement. Refer eproc link on BHEL Bhopal B2B site.

Documents Enclosed

1. Drawing.
2. Catalogue.
3. Purchase specification.
4. Quality Surveillance Plan.

NAME : SHRI MANENDRA SINGH

DESG : DY.MANAGER

0755-2505880

manendra1@bhel.in

SIGN & SEAL



MATERIAL MANAGEMENT - TRACTION MACHINES
HEAVY ELECTRICAL PLANT, BHOPAL
BHARAT HEAVY ELECTRICALS LIMITED

BHEL ENQUIRY NO. E5953036
DUE ON 22-09-2025

NIT TERMS & CONDITIONS:

SL. NO.	DESCRIPTION	DETAILS
1.	RATE CONTRACT TERMS	We intend to enter into a Rate Contract (RC) for ordering up to 12 months from RC freeze date, i.e. RC is to be kept valid for ordering up to 12 months from RC freeze date. Purchase Ordering shall be done as per BHEL requirement against the finalised rate contract & within its validity. Dispatches to be made against our purchase order (computerized) only, which will be issued against this Rate Contract. BHEL reserves the right to cancel/ short close the Rate Contract for unordered qty at any point of time even before the expiry of RC validity without assigning any reason whatsoever it may be.
2.	ITEM DESCRIPTION	Item01: - OA 7002 AZ, OA6301BX COVER (NDE) TO DRG. NO.24301711013 V-01REV.08. NOTE:- PAINTING TO BE DONE AS PER DRAWING.SUPPLIER'S IDENTIFICATION, PO NO. AND TYPE OF MACHINE TO BE WRITTEN BY WHITE PAINT ON EACH JOB
3.	TECHNICAL CONDITION	As per attached list of attached Drawings & Spec.
4.	QUANTITY	20 nos
5.	QUANTITY VARIATION	± 30%.
6.	SPLITTING OF ORDER	Not Applicable
7.	DELIVERY SCHEDULE REQUIREMENT	For the single lot of 20 Nos. scheduled delivery date shall be within 60 days from the PO date. Early delivery acceptable
8.	DELIVERY TERMS	FOR Destination (BHEL Bhopal)
9.	DELIVERY INSTRUCTION	Supplier identification (viz. Vendor code, PO number, sn etc) is must on each job.
10.	QAP	Not Applicable.
11.	INSPECTION CONDITION	Inspection at BHEL
12.	SAMPLE	As per attached Drg, Spec (As applicable)
13.	TEST CERTIFICATE	All Material TC to be supplied along with material as per drg Spec. and TC should incorporate Spec.
14.	GUARANTEE / WARRANTY	As per BHEL GTC of ENQUIRY (BP200102B, Cl. No. 18)
15.	GUARANTEE/ WARRANTEE CERTIFICATE	GUARANTEE/ WARRANTEE Certificate to be supplied along with each lot of the material.
16.	INVOICE & DOCUMENTS SUBMISSION FOR PAYMENT.	For supply orders placed on Indian Suppliers: Irrespective of the value of the invoice amount, the bidder / vendor should necessarily upload the despatch & invoice details on BHEL SUVIDHA portal at https://suvidha.bhel.in/suvidha/ , prior to despatch. All documents as per PO checklist, along with additional documents (if any), must be uploaded on the portal. It is mandatory that tax invoices with a net amount (including



MATERIAL MANAGEMENT - TRACTION MACHINES

HEAVY ELECTRICAL PLANT, BHOPAL

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BHEL ENQUIRY NO. E5953036

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		taxes) exceeding Rs five lakhs uploaded on the portal are digitally signed using a Class 3 Digital Signature Certificate (DSC) issued by a licensed Certifying Authority. Submission of invoice document in hard copy is allowed for invoices with a net amount (including taxes) equal to and upto Rs five lakhs, in case they were not digitally signed and uploaded on the portal. The material will not be accepted inside BHEL in absence of the above.
17.	PAYMENT TERMS	As per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 16) i.e. 100% payment in 90 days of receipt (45 days for Micro & Small and 60 days for Medium enterprises as registered in Udyam Certificate as per relevant MSME act in force) and subject to acceptance of material and relevant documents at BHEL. Any deviation from the above payment terms, if accepted (by BHEL), shall be loaded @ SBI base rate + 6% for the purpose of bid evaluation.
18.	TECHNICAL PQR (T-PQR)	Technical Pre-Qualification Requirements (T-PQR) for procurement of the items is attached with the NIT. Compliance of all the points in T-PQR is mandatory. In absence of compliance of above and non-submission of documents required against the T-PQR, the Vendor's offer is liable to be rejected. Duly filled T-PQR with desired documents shall be submitted by the Vendor along with the offer. <i>Information/ compliance/ documents submitted by vendor shall be authentic in all aspects. In case any deviation/ false information/ forged documents are observed / revealed later on, BHEL is free to initiate appropriate punitive proceeding against the Vendor as per Prevalent Processes and Guidelines of Company.</i>
19.	FINANCIAL PQR (F-PQR)	<i>Not Applicable.</i>
20.	BID PARTS	Offer shall be submitted by the bidders in Two Parts, i.e. Part-I Technical cum Commercial bid & Part-II Price bid.
21.	PENALTY / LD	As per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 9) i.e. 0.5% of the undelivered portion per week of delay or part thereof, subject to a maximum of 10% of the undelivered order value owing to delayed delivery.
22.	PRICE BASIS	Firm Price basis
23.	PRICING TERMS	As per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 12)
24.	PRICE VALIDITY	As per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 13) i.e. Offer shall be valid for a period of 90 days from the date of Techno- commercial (Part-I) bid opening date.
25.	TAXES & DUTIES	As per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 14)
26.	EVALUATION CRITERIA	Overall L1 basis.
27.	EVALUATION IN CASE OF MORE THAN ONE L-1 BIDDER	In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders. In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss/draw of lots, in the presence of the respective L-1 bidder(s) or their representative(s).



MATERIAL MANAGEMENT - TRACTION MACHINES
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BHEL ENQUIRY NO. E5953036
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		Ranking will be done accordingly. Decision of BHEL in such situations shall be final and binding.
28.	BID SECURITY/ Earnest Money Deposit (EMD)	Not Applicable
29.	PERFORMANCE SECURITY (PBG)	Not Applicable.
30.	REVERSE AUCTION	Not Applicable.
31.	MSE PREFERENCE	Applicable as per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 29)
32.	PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA)	Not Applicable.
33.	INTEGRITY PACT (IP)	Not Applicable.
34.	RESTRICTION UNDER RULE 144 (xi) GFR	As per attached BHEL GTC of ENQUIRY (BP200102B, Cl. No. 34)
35.	CONFLICT OF INTEREST AMONG BIDDERS/ AGENTS AND THEIR DECLARATION	<p>A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. Bidders having a conflict of interest shall not be eligible to participate in the tender process.</p> <p>Treatment of cases regarding conflict of interest: - The bidder notes that a conflict of interest would said to have occurred in the tender process and execution of the resultant contract, in case of any of the following situations:</p> <p>-</p> <ul style="list-style-type: none">i) If its personnel have a close personal, financial, or business relationship with any personnel of BHEL who are directly or indirectly related to the procurement or execution process of the contract, which can affect the decision of BHEL directly or indirectly;ii) The bidder (or his allied firm) provided services for the need assessment/ procurement planning of the Tender process in which it is participating;iii) Procurement of goods directly from the manufacturers /suppliers shall be preferred. However, if the OEM/ Principal insists on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. In case bids are received from both the manufacturer/ supplier and the agent, bid received from the agent shall be ignored. However, this shall not debar more than one Authorised distributor (with/ or without the OEM) from quoting



MATERIAL MANAGEMENT - TRACTION MACHINES

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BHARAT HEAVY ELECTRICALS LIMITED

BHEL ENQUIRY NO. E5953036

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		<p>equipment manufactured by an Original Equipment Manufacturer (OEM) in procurements under a Proprietary Article Certificate.</p> <p>iv) A bidder participates in more than one bid in this tender process. Participation in any capacity by a Bidder (including the participation of a Bidder as a partner/ JV member or sub-contractor in another bid or vice-versa) in more than one bid shall result in the disqualification of all bids in which he is a party. However, this does not limit the participation of an entity as a sub-contractor in more than one bid if he is not bidding independently in his own name or as a member of a JV.</p> <p>The Bidder declares that they have read and understood the above aspects, and the bidder confirms that such conflict of interest does not exist and undertakes that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s), in this regard. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process. In case, the Bidder is found having indulged in above activities, the same will be considered as a violation of the tender conditions, and suitable action shall be taken by BHEL as per extant policies/ guidelines.</p>
36.	ANNEXURE-IX	<p>The Bidder/Supplier/Contractor will, when presenting his bid, declare whether other Family Firms or Sister Concern Affiliates/Subsidiary firms are participating in the same tender, so as to eliminate the possibility of cartel formation. Format for declaration is available in the NIT documents for this enquiry (Annexure-IX). Same is to be submitted with the offer.</p>
37.	SPECIAL CONDITIONS	<p>Bidders who fall under MSE (Micro & Small Enterprises only) and fail to upload 'UDYAM Registration Certificate (URC)' shall automatically be considered as Non-MSE supplier for this tender.</p> <p>Further, it is to be noted that MSE benefits are not being extended to Agent/ Dealer/ Trader/ Distributor (i.e. Other than manufacturer). Supplier has to also provide supporting document(s) such as Agreement Between OEM & Bidder(s) etc.</p> <p>Identification must. Soon after rejection of material, it is to be ensured by supplier that material should be taken back maximum within two weeks after communication for rectification/ replacement & supply back the rectified/ fresh material to BHEL Bhopal within 30 days from rejection. In the event of non-lifting of rejected material by supplier, BHEL will not be responsible for loss of such items to the supplier in any case.</p> <p>Offers of suppliers who are in 'HOLD/BANNED' status in BHEL Bhopal PMD shall not be considered.</p> <p>Unregistered vendors to submit documents required for registration to BHEL Portal Online (https://bhel.com/supplier-registration).</p>
38.	OTHER TERMS & CONDITIONS	<p>Other Terms & Conditions as per attached BHEL GTC of ENQUIRY (BP200102B).</p> <p>Any deviation of NIT, BHEL GTC of ENQUIRY (BP200102B) and BHEL PO Terms, where vendor response is not affirmative to be clearly indicated, else BHEL will consider that all above Terms & Conditions are acceptable to vendors.</p>
39.	GEM REGISTRATION	<p>As you are kindly aware that Government e-Marketplace (GeM) is a one stop portal to facilitate Online Procurement of Goods & Services required by various Government Departments/ Organizations/ PSUs.</p>



MATERIAL MANAGEMENT - TRACTION MACHINES

HEAVY ELECTRICAL PLANT, BHOPAL

BHARAT HEAVY ELECTRICALS LIMITED

BHEL ENQUIRY NO. E5953036

DUE ON 22-09-2025

		BHEL being a PSU, would like that its suppliers/ contractors also have visibility on this portal so that GeM can be used for procurement by BHEL. Hence, you are requested to get yourselves registered on GeM.
40.	TENDER FEE	Not applicable
41.	BID SUBMISSION WITHIN DUE DATE & TIME	No request for extension of tender due date will be entertained at the time of tender opening and after due date under any circumstances. Hence, all bidders are requested to submit their bid well within due date and time only. <i>BHEL reserves the right for extension of tender based on the situation without assigning any reason whatsoever it may be.</i>
42.	DOCUMENTS TO BE FURNISHED ALONG WITH YOUR QUOTATION	Signed and Sealed copy of: <ul style="list-style-type: none">- NIT- BHEL GTC of ENQUIRY (BP200102B)- BHEL PO Terms Duly Filled, Signed and Sealed copy of: <ul style="list-style-type: none">- Techno-Commercial Annexure- T-PQR along with all supporting documents- Annexure-IX in Company Letterhead- Annexure A for OEM & MSE Declaration.- Others: <ul style="list-style-type: none">- UDYAM Registration Certificate (<i>as applicable for MSME bidders only</i>)

IT IS HEREBY MENTIONED THAT THIS IS E-TENDER SO OFFER SUBMITTED THROUGH E-PROCUREMENT PORTAL (www.eprocurebhel.co.in) SHALL ONLY BE CONSIDERED.

Techno-Commercial Annexure
(To be filled by supplier inline with NIT requirement and submit with offer)

Tender No.	E5953036 due on 22/09/2025			
Description :	Item01: - OA 7002 AZ, OA6301BX COVER (NDE) TO DRG. NO.24301711013 V-01 REV.08 TENDER QTY.:- Item01: - 20 nos +/-30%. Delivery required as per NIT.			
Sr. No.	ELEMENTS	Standards	To be offered/confirmed by supplier	Remarks, if any
1	Quotation reference no. & date	As per supplier		
2	HSN / SAC code	As per supplier		
3	Quotation currency	In INR		
4	Contact person	As per supplier		
5	Phone / Mobile	As per supplier		
6	E-Mail	As per supplier		
7	Order to be placed on (Also provide supplier code at BHEL Bhopal, If registered)	As per supplier		
8	Address	As per supplier		
9	Please specify delivery in weeks/ days (Specify item wise, lot wise as per RFQ)	As per NIT/ Accepted with deviation (If select Accepted with deviation, please mention the deviation)		
10	Rate quoted on "Firm" price basis	Yes		
11	Quoted for all the items and full quantity of tender enquiry	Yes / No. (If "No" please mention item number with Qty of regreted items)		
12	Technical specifications	Accepted as per NIT / Accepted with deviation (If select Accepted with deviation, please mention the deviation)		
13	Inspection	As per NIT/ Accepted with deviation (If select Accepted with deviation, please mention the deviation)		
14	Test certificate & Gurantee certificate as per NIT and specification will be submitted along with each consignment	Yes (In case of "No" your offer may be rejected).		
15	Brand name, if any.	As per supplier		
16	Supply from	As per supplier		
17	Terms of delivery ("FOR DESTINATION " means freight & insurance upto destination in supplier's scope (Destination: CRX Divn, BHEL Bhopal)	Accepted/ Accepted with deviation (If select Accepted with deviation, please mention the deviation)		
18	Transit insurance (In supplier's scope)	As per NIT/ Accepted with deviation (If select Accepted with deviation, please mention the deviation)		
19	CGST RATE (IN %)	As per supplier		
20	SGST RATE (IN %)	As per supplier		
21	IGST RATE (IN %)	As per supplier		
22	UGST RATE (IN %)	As per supplier		
23	Are you manufacturer of quoted item (s).	Yes / No		
24	Are you registered under MSMED ACT 2006 as small or micro. NOTE: - Firms registered under medium scale shall not be considered eligible for MSE benefits.	Yes / No (If select Yes, please enclosed valid UDYAM certificate)		

Techno-Commercial Annexure
(To be filled by supplier inline with NIT requirement and submit with offer)

Tender No.	E5953036 due on 22/09/2025			
Description :	Item01: - OA 7002 AZ, OA6301BX COVER (NDE) TO DRG. NO.24301711013 V-01 REV.08 TENDER QTY.:- Item01: - 20 nos +/-30%. Delivery required as per NIT.			
Sr. No.	ELEMENTS	Standards	To be offered/confirmed by supplier	Remarks, if any
25	Terms of Payment (100% payment in 90 days of receipt (45 days for Micro & Small and 60 days for Medium enterprises as registered in Udyam certificate as per relevant MSME act in force) and subject to acceptance of material and relevant documents at BHEL. Pl refer GTC BP200102B)	As per NIT/ Accepted with deviation (If select Accepted with deviation, please mention the deviation)		
26	SELF CERTIFICATION OF MINIMUM LOCAL CONTENT, IF MORE THAN 50% VALUE ADDITION IS IN INDIA. (Note- In case of tenders worth more than Rs. 10 crores, Suppliers shall necessarily submit certificate from statutory auditor or cost auditor or cost accountant or CA) Please also specify the amount of local content in India. EXAMPLE :if 100% INDIGENOUS (MADE IN INDIA) MARK "Y"/100%	As per supplier/not applicable		
27	Details of location of value addition / manufacturing	As per supplier/not applicable		
28	Other Charges (If any)	Applicable / Not Applicable. (If applicable please mention percentage (%) / Value (along with type of charges).		
29	Penalty for delayed performance as per BP200102B & NIT	Yes / No (In case of "No", your offer will be loaded suitably)		
30	Confirmation that documents pertaining to technical PQR has been submitted	Yes / No		
31	Acceptance to "REVERSE AUCTION" if conducted (As per BHEL's RA policy)	Not applicable		
32	Submission of Declaration format with duly sealed & signed (Annexure IX, refer attached) regarding whether other family firms or sister concern affiliates / subsidiary firms are participating in the same tender.	(Yes / No) If No please specify the reason.		
33	General terms and conditions of enquiry (Form No. BP-200102B) and BHEL PO Terms & Conditions is Acceptable.	Yes (In case of "No" your offer may be rejected).		
34	Quotation Validity will be 90 days from the date of techno-commercial bid opening.	Yes		
35	Tender fees submitted	Yes / Not Applicable	Not Applicable	

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

Ref No: TME/217/TA/ Cover Rev.00

For uploading along with the enquiry

Dated: 04/09/2025

Technical Pre-Qualification Requirements (PQR) for “Cover”

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.	Vendor to confirm that it is the manufacturer of the offered item and not the trader.	Manufacturer/ Trader	Not Required
3.	Vendor should have past experience of successfully manufacturing & supplying any steel sheet of minimum 1-mm thick having bending/rolling diameter of 500mm, in preceding 5 years from enquiry opening date. (Vendor to ensure that experience/supply proof submitted for b) & c) shall correlate with the submitted P.O. copy)	Yes/No	a. Un-priced PO copies. b. Drawing of supplied item. c. Supply proof (copy of invoice).
4.	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.

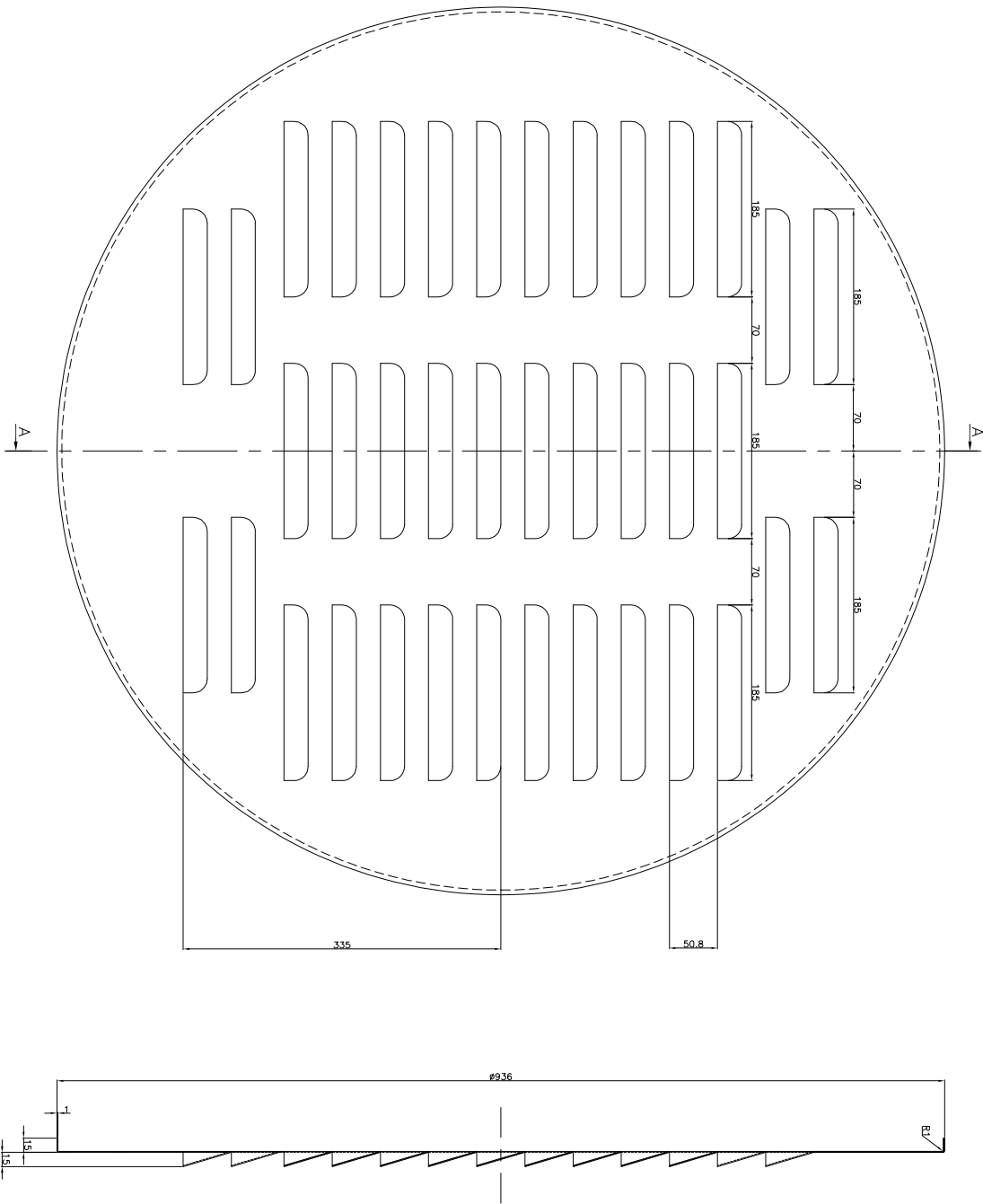
2. Information / compliance / documents submitted by vendor shall be authentic in all aspects. In case any deviation / false information / forged documents are observed, BHEL is free to initiate appropriate punitive proceeding against the supplier.

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.

Date:

(Sign and Seal of Authorized representative of vendor)

10059/10591 - ON DRG



IT. NO.	TOOL NO.	DESCR.
001	1460175	LOUVRE

TOOL LIST

29	RAW WT.-7.38	001	END COVER	11KH0970	6.23
30	REMARKS	100	100	100	100

STATUS OF DRAWING
DISTRIBUTION OF PRINTS
TAX-1 TAX-3

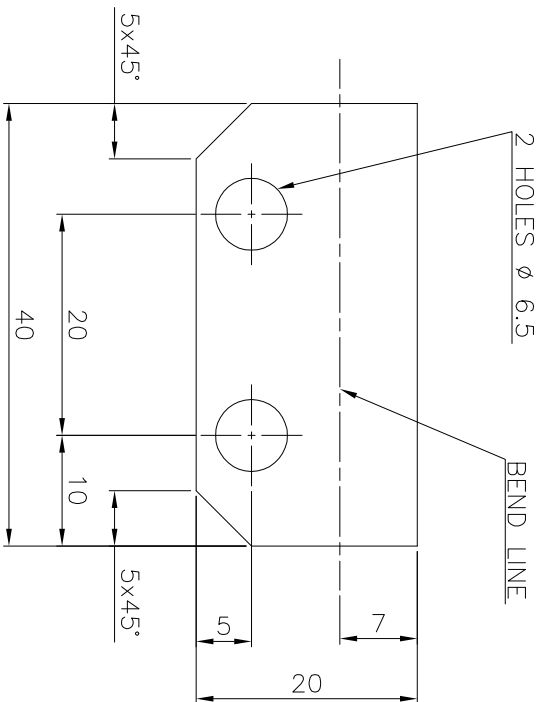
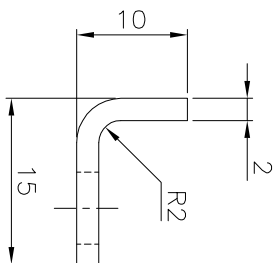
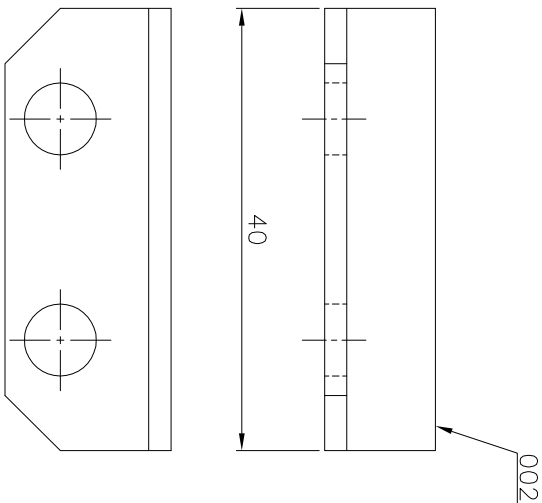


NAME OF CUSTOMER/PROJECT
OIL RIG ALTER
(0A6301AZ)

END COVER

DRAWING NO.
14301765001

	D	E	F
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VAR. 00 & 01

DEVELOPED VIEW IT. 002

[illegible]

SIZE	A2
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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 :

- SERVO RP 125 of M/s. IOC.
- RUSTOP 387/388 of M/s. HPC
- Bharat TCPF of M/s. Bharat Petroleum
- 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
BHOPALIssued
Corp. R&DDt. of 1st Issue
JULY, 1976

Dt: 15.06.2005

Dt :

Year :

AA 101 15

Rev. No. 09

PAGE 2 OF 7

CORPORATE PURCHASING SPECIFICATION



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



CORPORATE PURCHASING SPECIFICATION

AA 101 15

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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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<p>11.0 TEST SAMPLES:</p> <p>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.</p> <p>Where material of more than one thickness are rolled from the same melt, one additional bend test shall be made for each thickness.</p> <p>Test pieces shall be cut so that the axis of the bend is parallel to the direction of rolling, viz., transverse direction.</p> <p>12.0 MECHANICAL PROPERTIES :</p> <p>12.1 Bend Test :</p> <p>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.</p> <p>Bend test shall be carried out in accordance with IS : 1599.</p> <p>12.2 Hardness (VICKERS) :</p> <p>When tested as per IS : 1501, the test pieces shall show a Vickers hardness as given below:</p> <table border="0"> <tr> <td>Upto & Incl. 1.25 mm, thick</td><td>:</td><td>115 HV, max.</td></tr> <tr> <td>Above 1.25 mm, thick</td><td>:</td><td>125 HV, max.</td></tr> </table> <p>13.0 TEST CERTIFICATES:</p> <p>Unless otherwise specified, three copies of test certificates shall be supplied.</p> <p>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.</p> <p>The test certificate shall bear the following information:</p> <p>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..</p> <p>14.0 PACKING :</p> <p>14.1 Packing:</p> <p>Sheets and Coils shall be suitably packed in bundles to prevent corrosion and damage during transit.</p> <p>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.</p>	Upto & Incl. 1.25 mm, thick	:	115 HV, max.	Above 1.25 mm, thick	:	125 HV, max.		
Upto & Incl. 1.25 mm, thick	:	115 HV, max.						
Above 1.25 mm, thick	:	125 HV, max.						



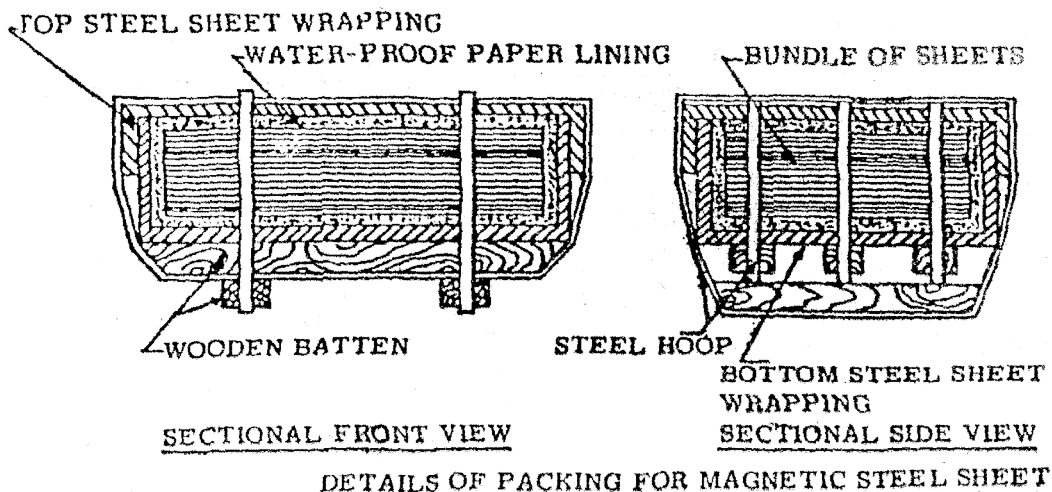
CORPORATE PURCHASING SPECIFICATION

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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:

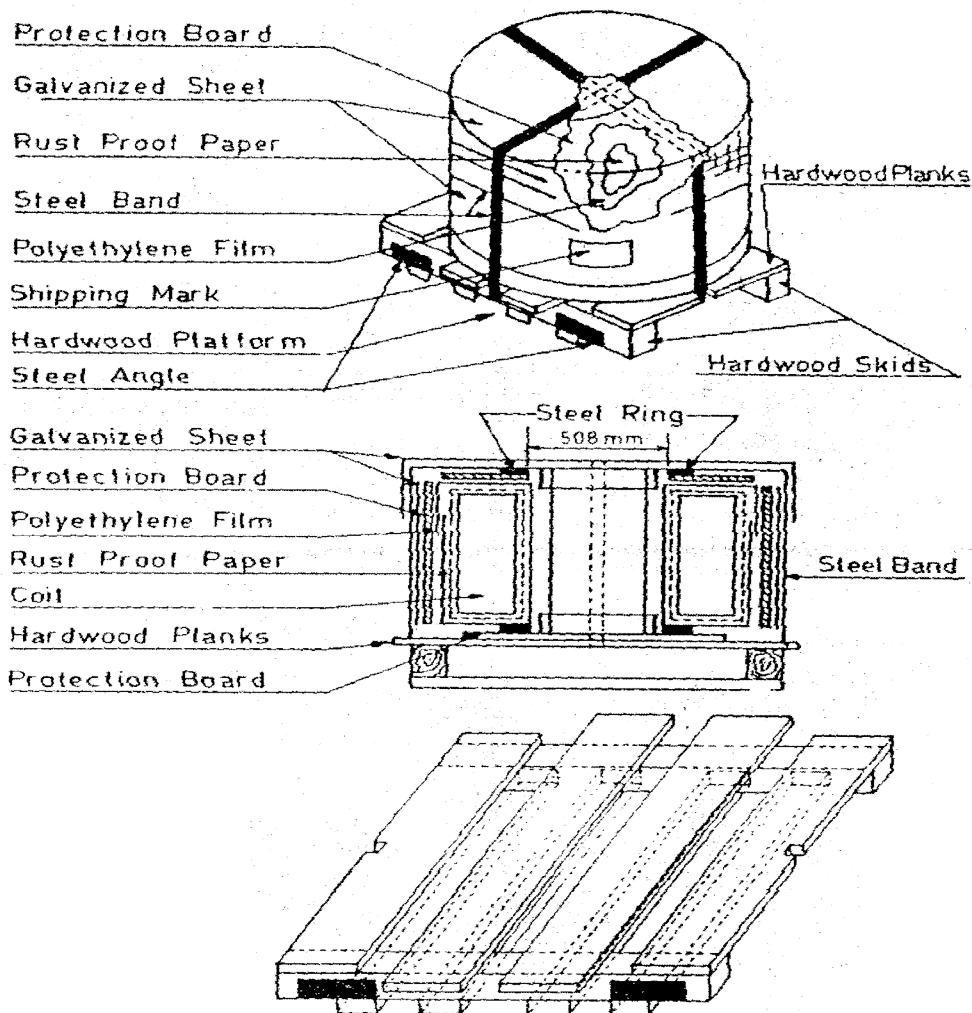
- An annular protection board shall be placed at either end of the coil.
- The coil should then be wrapped with waterproof anti-rust proof paper by lapping axially all around the circumference.
- The coil shall then be covered by polythylene sheet or anti-rust waterproof paper and the ends sealed properly.
- 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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CORPORATE PURCHASING SPECIFICATION



- 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.



CORPORATE PURCHASING SPECIFICATION

AA 101 15

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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.



CORPORATE PURCHASING SPECIFICATION

AA10179

Rev No. 02

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EXPANDED METAL STEEL SHEET

1 GENERAL:

This specification governs the quality requirements of expanded metal steel sheets.

2 APPLICATION:

For general engineering purposes.

3 CONDITION OF DELIVERY:

The material shall be supplied with suitable protective coating to prevent corrosion.

4 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall comply with the requirements of the following National standards and also meet the requirements of this specification:

IS: 412-1975: Expanded metal steel sheets for general purposes.

5 DIMENSIONS AND TOLERANCES:

5.1 Sizes:

The material shall be supplied to the dimensions specified in BHEL order.

BHEL order shall clearly state the shortway mesh, longway mesh, thickness and width of sheet required.

5.2 Tolerances:

5.2.1 Dimensions:

When expanded metal sheets are required to be supplied to the specified dimensions, the limits of thickness as follows:

On nominal specified dimension	:	± 10 mm
On minimum specified dimensions	:	- 0 mm +10 mm

5.2.2 Mass:

The tolerance on nominal mass of expanded metal sheets shall be ± 10 percent.

5.2.3 Mass:

Size of mesh:

The tolerance on sizes of mesh shall be as follows:

On swm	<u>Tolerance</u>
Upto and incld. 20 mm	± 1 mm
Over 20 mm	± 2 mm
On lwm	
Upto and incld. 60 mm	± 2 mm
Over 60 mm	± 4 mm

Revisions:

CI 26.6.15 of MOM of MRC-S&GPS

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC(S&GPS)

Rev No.02	Amd No.	Reaffirmed	Prepared	Issued	Dt. of 1 st Issue
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AA10179	CORPORATE PURCHASING SPECIFICATION	
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6 MANUFACTURE:

Blank steel sheets and plates used in the manufacture of expanded metal steel sheets shall be made from steel manufactured by the open hearth, electric, basic oxygen or a combination of these processes. If any other process is employed, prior approval of BHEL shall be obtained.

7 FREEDOM FROM DEFECTS:

The finished expanded metal sheets shall be free from flaws, joints, blows, broken strands, laminations and other surface defects.

8 CHEMICAL COMPOSITION:

The sulphur and phosphorus content shall be limited to 0.050 percent, maximum each with a permissible variation of +0.005 percent for each element.

9 SELECTION OF TEST SAMPLES:

For every lot of 100 expanded metal sheets or less, two sheets shall be selected for bend test.

One bend test piece shall be cut from each of the two sheets.

The test piece shall preferably be cut from the edge of the sheet to avoid wastage.

10 BEND TEST:

The material when tested in accordance with IS:1599 shall withstand without fracture, being doubled over either by pressure or by blows from a hammer, until the two sides of the strands are paralleled and the internal radius of the bend is not greater than 1.5 times the thickness of the test piece. Sheets with shortway mesh less than 40mm thickness are not subjected to this test.

11 PROTECTIVE COATING:

The material shall be given a suitable protective coating to prevent corrosion.

12 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 despatch documents to facilitate quick clearance of the material.

The test certificate shall bear the following information:

AA10179, Rev 02: EXPANDED METAL STEEL SHEET

BHEL Order No,

Supplier's name,

Identification No

Dimensional inspection

Results of bend and chemical composition

13 PACKING AND MARKING:

The material shall be supplied in rolls suitably packed to prevent from corrosion and damage during transit. A metal label shall be securely attached to each bundle and shall bear the following information:

AA10179: EXPANDED METAL STEEL SHEET

BHEL Order No,

Supplier's Name

Consignment & Identification No,

Size & Weight.

14 REFERRED STANDARDS (Latest publications including amendments):

1) IS:412

2) IS:1599



CORPORATE STANDARD

AA7151115

Rev. No. 09

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NUTS, HEXAGON, PRODUCT GRADE 'A' COARSE PITCH, STEEL PROPERTY CLASS 8 (M1.6 - M16)

1.0 DESIGNATION

A product Gr.A, hexagon, Steel, nut thread M10, coarse pitch and conforming to property class 8 shall be designated as:

1.1 On drawings

- i) Material specification column : AA7151115
- ii) Description column : NUT HEX A M10 – 8

1.2 On indents

Nut Hex A M10 – 8; AA7151115

1.3 For issuing enquiries and on purchase orders

While issuing enquiries and purchase orders, delete BHEL standard number from the above description and add the information given under clause 2.0

2.0 COMPLIANCE WITH STANDARDS

2.1 Dimensions, Tolerances & General Requirements

As per IS 1364 : Part 3 : 2018

2.2 Mechanical Properties

To conform to property class 8 as specified in Table-4 & 6 of IS 1367 : Part 6, Permissible Hardness 188 to 330 HB for sizes M3 to M10

2.3 Threads

Pitch - Coarse to IS: 4218, Part 2

Tolerance quality - Medium

Tolerance class - 6H

2.4 Identification Marking

As stated in clause 10 of IS: 1367, Part 6

2.5 Surface Discontinuity

As per ISO 6157-2

2.6 Finish

As specified in BHEL order.

Revisions:

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC (F)

Rev. No. 09

Amd. No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

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3.0 NOTE

- 3.1** For nuts, hexagon, product Gr.A, coarse pitch, brass (M1.6 - M16) refer to BHEL standard AA7151113
- 3.2** For screw threads, general (Metric) refer to BHEL standard AA0231800
- 3.3** For tolerance grade, position and class refer to BHEL standard AA0230201
- 3.4** Nuts to this standard would be unplated, divisions wishing to have plated nuts would have to get them plated.
- 3.5** Weights given in this standard are for general reference only and are not for commercial transactions.
- 3.6** When fasteners are to be tested with in BHEL, the sampling and acceptance plan shall be as per IS: 1367, Part 17

4.0 REFERRED STANDARDS (Latest Publications including Amendments)

- 1) IS 1367 : Part 6 & 17
- 2) IS 4218 : Part 2
- 3) ISO 6157-2
- 4) AA0230201
- 5) AA0231800
- 6) AA7151113

EXPLANATORY NOTE

The following major changes have been made in the present revision

- In Clause 2.1, year of IS updated to 2018.
- In Clause 2.2, table reference updated.
- In Clause 2.4, clause 10 in place clause 9.
- In Clause 2.5, ISO 6157-2 referred inline of IS 1364 Part 3. No equivalent IS found.
- In clause 4.0, updated.



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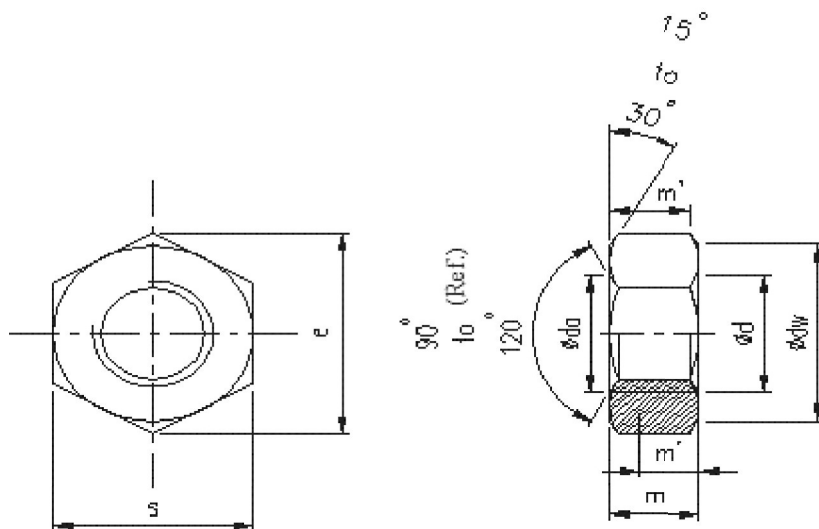


Table – 1

All dimensions in mm

Thread Size	Flats		Corners	Thickness		Wrenching Height				Sub-Code	Weight
d	s		e	m		m'	dw	da			
Nom.	Max.	Min.	Min.	Max.	Min.		Min.	Min.	Max.		
M1.6	3.2	3.02	3.41	1.3	1.05	0.8	2.4	1.6	1.84	091	
M2	4.0	3.82	4.32	1.6	1.35	1.1	3.1	2.0	2.3	105	
M2.5	5.0	4.82	5.45	2.0	1.75	1.4	4.1	2.5	2.9	113	
M3	5.5	5.32	6.01	2.40	2.15	1.7	4.6	3.0	3.45	067	0.39
M4	7.0	6.78	7.66	3.2	2.90	2.3	5.90	4.0	4.6	075	0.82
M5	8.0	7.78	8.79	4.7	4.40	3.5	6.90	5.0	5.75	083	1.24
M6	10.0	9.78	11.05	5.20	4.90	3.9	8.90	6.0	6.75	016	2.52
M8	13.0	12.73	14.38	6.8	6.44	5.2	11.6	8.0	8.75	024	5.40
M10	16.0	15.73	17.77	8.4	8.04	6.4	14.6	10.0	10.8	032	11.69
M12	18.0	17.73	20.03	10.8	10.37	8.30	16.6	12.0	13.0	040	17.69
M16	24.0	23.67	26.75	14.8	14.1	11.3	22.5	16.0	17.3	059	33.58



CORPORATE STANDARD

AA7161001

Rev. No. 04

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WASHERS, MACHINED, STEEL

1 DESIGNATION

A machined washer of size 8.4 mm made of steel shall be designated as:

1.1 On drawings

- i) Material specification column: AA7161001
- ii) Description column: WASHER MCD 8.4-ST

1.2 On indents

Washer Machined 8.4 – Steel: AA7161001

1.3 For issuing enquiries and on purchase orders

While issuing enquiries and purchase orders, delete BHEL standard number from the above description and add the information given under clause 2.

2 COMPLIANCE WITH STANDARDS

2.1 Dimensions, Tolerances and General requirements

As per IS: 2016-1967, Table-1

2.2 Material

Steel as stated in IS: 2016

2.3 Finish

Plated as specified in BHEL order.

3 NOTE

- 3.1 For machined washers of brass, refer to BHEL standard AA7161002
- 3.2 For machined washers of copper, refer to BHEL standard AA7161004
- 3.3 Washers to this standard would be unplated, divisions wishing to have plated washers would have
- 3.4 For general requirements of washers, refer BHEL standard AA0230408
- 3.5 Weights given in this standard are for general reference only and are not meant for commercial transactions.
- 3.6 When fasteners are to be tested with in BHEL, the following sampling and acceptance plan based on IS: 6821 (Table-2) shall be followed for physical properties.

LOT SIZE	SAMPELE SIZE	ACCEPTANCE NOS.
Up to 1000	5	0
1001-3000	8	0
3003-10000	13	0
10001-35000	20	0
Over 35000	32	1

Revisions: As per clause 29.4 of MOM of WG-F

APPROVED:

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE – MRC (F)

Rev. No. 04

Amd. No.

Reaffirmed

Prepared

Issued

Dt. of 1st Issue

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CORPORATE STANDARD**4 REFERRED STANDARDS (Latest publications including amendment)**

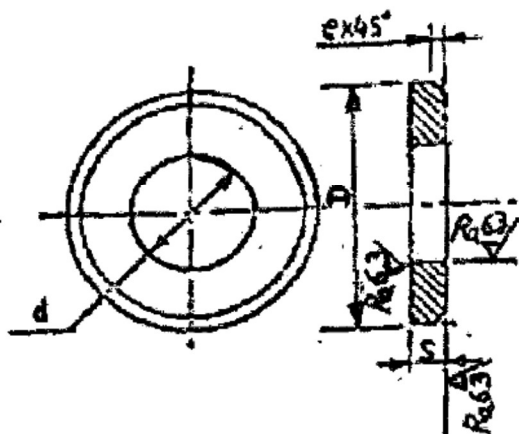
- 1) IS: 6821
- 2) AA0230408
- 3) AA7161002
- 4) AA7161004

EXPLANATORY NOTE

This standard was first issued in January 1977. The standard was based on IS:2016-1967 for dimensions, tolerances and general requirements. Subsequently many changes have been agreed upon at International & IPSC level and were reflected in IS: 2016-1967.

There is no change in IS: 2016-1967. This standard has been reviewed and brought up to date.

- Clause 3.6 "Sampling plan" for washers has been modified in line with IS: 6821
- Clause 4.0 has been modified accordingly.





CORPORATE STANDARD

AA7161001

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Note:

- 1) Corporate sub codes are shown in Table
- 2) Weights have been shown in kg per 1000 Nos.

Table 1

All dimensions in mm.

Size Nom. d h12	Outside diameter D		Thickness S		e nom	for bolt or screw size	Sub-code	Weight
	Basic	Tol.	Basic	Tol.				
1.7	4	+0 -0.3	0.3	±0.1	0.1	M1.6		
2.2	5	+0 -0.3	0.3	±0.1	0.1	M2	170	
2.7	6.5	+0 -0.3	0.5	±0.1	0.2	M2.5	161	
3.2	7	+0 -0.3	0.5	±0.1	0.2	M3	013	0.11
4.3	9	+0 -0.3	0.8	±0.1	0.3	M4	021	0.29
5.3	10	+0 -0.3	1	±0.1	0.4	M5	030	0.42
6.4	12.5	+0 -0.4	1.6	±0.2	0.6	M6	048	1.08
8.4	17	+0 -0.4	1.6	±0.2	0.6	M8	056	2.07
10.5	21	+0 -0.5	2	±0.2	0.6	M10	064	3.98
13	24	+0 -0.5	2.5	±0.3	0.6	M12	072	6.16
17	30	+0 -0.5	3	±0.3	0.6	M16	080	11.17
21	37	+0 -0.8	3	±0.3	1	M20	099	16.7
25	44	+0 -0.8	4	±0.3	1	M24	102	31.78
31	56	+0 -1.0	4	±0.3	1	M30	110	52.95
37	66	+0 -1.0	5	±0.6	1.6	M36	129	89.99
43	78	+0 -1.0	7	±1	1.6	M42	137	180.3
50	92	+0 -1.5	8	±1	1.6	M48	145	291.26
58	105	+0 -1.5	9	±1	1.6	M56	188	421.8
66	115	+0 -1.5	9	±1	2	M64	153	486.45