



**Bharat Heavy Electricals Limited**  
Industrial Valves Plant  
Goindwal Sahib (Punjab)

**Enquiry No.**  
**2627-052E**

**Date:**  
**10.10.2026**

**NOTICE INVITING TENDER (NIT)**

BHEL Goindwal Sahib (Punjab) invites offers from interested bidders / suppliers for submission of their offer through e-procurement mode at <https://eprocurebhel.co.in/>. Offers in any other mode will not be accepted. In case of any difficulty faced while registering on BHEL's e-Procurement portal developed by NIC, queries may be addressed to 0120-4001002, 0120-4001005 and 0120-6277787; email: [support-eproc@nic.in](mailto:support-eproc@nic.in). These details are also available on 'Contact Us' page of the portal.

|                                                    |                                                                                                                                                                                                                   |
|----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Tender enquiry no. &amp; date</b>               | 2627-052E Dated 10.10.2026                                                                                                                                                                                        |
| <b>Form of contract</b>                            | Supply                                                                                                                                                                                                            |
| <b>Tender / Item description</b>                   | Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)                                                                                                                                             |
| <b>Material standard / Drawings</b>                | As per attached Specifications                                                                                                                                                                                    |
| <b>Location(s) of Supply / Work</b>                | BHEL IVP Goindwal, Distt Tarn Taran, Punjab                                                                                                                                                                       |
| <b>Earnest Money Deposit (EMD)</b>                 | Not Applicable                                                                                                                                                                                                    |
| <b>Performance Security (PS)</b>                   | Upto 5% of PO value, subject to maximum of Rs. 3.0 lakhs, to be submitted within 21 days from the date of award of PO. (Refer Sr. no. 13 of Tender GCC)                                                           |
| <b>Quotation parts</b>                             | Two Part Bid                                                                                                                                                                                                      |
| <b>Tender download / Bid submission start date</b> | <b>10.10.2026 (15:30 Hrs. IST)</b>                                                                                                                                                                                |
| <b>Tender download / Bid submission end date</b>   | <b>21.10.2026 (12:00 Hrs. IST)</b>                                                                                                                                                                                |
| <b>Tender / Bid opening date</b>                   | <b>21.10.2026 (15:30 Hrs. IST)</b>                                                                                                                                                                                |
| <b>Validity of offer</b>                           | 75 days from techno commercial bid opening (Part I)                                                                                                                                                               |
| <b>Quantity variation</b>                          | + 2% for all the items                                                                                                                                                                                            |
| <b>Delivery schedule</b>                           | 120/150 days from the date of Release of Purchase Order/ Letter of Intent                                                                                                                                         |
| <b>Tender evaluation</b>                           | Item – Wise                                                                                                                                                                                                       |
| <b>Reverse auction</b>                             | Applicable                                                                                                                                                                                                        |
| <b>Integrity pact (IP)</b>                         | Applicable                                                                                                                                                                                                        |
| <b>Contact person details</b>                      | Rajesh Kumar, Sr. Manager / MM<br>01859-224 618, <a href="mailto:kumarrajesh@bhel.in">kumarrajesh@bhel.in</a><br>Pranshu, Sr. Manager / MM<br>01859-224 619, <a href="mailto:pranshu@bhel.in">pranshu@bhel.in</a> |



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

### S1. SCOPE OF SUPPLY

Material shall be supplied as per the applicable Technical Delivery Condition (TDC) / Specifications / Standards as mentioned in the Table – 1, at the Delivery Destination. National & International material standards shall have to be arranged by bidders themselves.

**Table 1 : List of Items along with Quantity and Delivery Destination**

| Enquiry Sr. No. | Material Code | Material Description                        | Unit Wt. per Set, in Kg (Approx.) | Qty. in Sets | Applicable Specification Document                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------|---------------|---------------------------------------------|-----------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1               | 412420140000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M30X130 | 1.416                             | 46,500       | <b>1) Specification Document of HSS Fit Bolts with Document no. SSFIT-001 Revision - 04 Dated 29.09.2026.</b><br><br><b>2) Technical Delivery Condition (TDC) with document no. TDC:5:216/Rev.01 dt. 29.09.2026.</b><br><br><b>3) Standard Quality Plan of FIT BOLT Fasteners with Document no. SQP:FITBOLT:001 Rev 8 dated 01.10.2026 along with Heat Treatment Process Checklist.</b><br><br><b>4) Additional Technical Conditions of Contract with Document No.: BHEL:TCC:FitBolts:Rev 01 dt. 01.10.2026</b> |
| 2               | 412420100000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M30X140 | 1.472                             | 32,600       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3               | 412420150000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M30X150 | 1.528                             | 9,600        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 4               | 412420180000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X130 | 2.241                             | 3,000        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 5               | 412420110000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X220 | 2.961                             | 13,800       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 6               | 412420190000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X230 | 3.040                             | 19,400       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7               | 412420200000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X240 | 3.120                             | 18,800       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 8               | 412420120000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X250 | 3.200                             | 11,000       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9               | 412420220000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X270 | 3.360                             | 5,700        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 10              | 412420230000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X280 | 3.440                             | 7,000        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 11              | 412420250000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HDG<br>M36X300 | 3.600                             | 9,600        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

1 Set of "HSFIT BOLT+NUT+2PL.WASHER+HDG" = 1 Bolt + 1 Nut + 2 Plain washers. **Full set is coated with Hot Dip Galvanization Coating.**



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

Tender Description: Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

**Table 2 : Technical information for Fit bolt sizes which not available in document SSFIT-001 is given below:**

| Bolt Size | $l_{nom.}$                | b  | $y_{max.}$ | $l_{g \max.}$ and $l_{s \min.}$                                        | Remarks                                        |
|-----------|---------------------------|----|------------|------------------------------------------------------------------------|------------------------------------------------|
| M30       | 140 /150                  | 44 | 11.5       | $l_{g \max.} = l_{nom.} - b$<br>$l_{s \min.} = l_{g \max.} - y_{max.}$ | Refer Note-e, f of Table-1 of SSFIT-001 Rev.04 |
| M36       | 230 / 240/ 250/ 260 / 280 | 52 | 13.0       |                                                                        |                                                |

**Additional Information in reference to the Table 1 and 2 above:**

- A. Delivery Destination for all the 11 items is BHEL IVP Goindwal, Punjab.
- B. Rust preventive oil is not applicable to these HSS FIT bolts fasteners. However, if the nuts are rethreaded after galvanizing, application of rust preventive oil on the internal threads of the nuts shall be ensured. This rust preventive oil coating to be done as per attached specification with document reference no. PR:CHEM:09-04 Rev 03 dated 01.04.2009.
- C. Minimum 50% and 20% Local Content is required for qualifying as Class 1 and Class 2 Local Supplier respectively.

### **S2. PRE-QUALIFICATION CRITERIA (PQC)**

- a) Supplier shall be manufacturer of Fasteners. Offers from Traders/Dealers/Stockists/agents will be rejected. Submission of UDYAM Certificate or Declaration from bidder is required. Also, List of Machines to be submitted in order to fulfil this criterion. **This list of machines should be inline with the requirement mentioned in the Additional Technical Contract Conditions (TCC) with document no. HEL:TCC:FitBolts:Rev01 dt. 01.10.2026.**
- b) Bidder should have Minimum Average Annual Financial Turnover of **Rs. 900 Lakhs**, over any three financial years out of the **last 4 Financial years viz. FY 2022-23, 2023-24, 2024-25 and 2025-26**. To certify the same, bidder need to submit balance sheets of above stated any of the three years. Balance sheets should be audited, as applicable. The value of turnover to be considered is without Taxes. If the balance sheets are not audited, bidder need to submit CA certificate for the turnover. **Audited balance sheets/CA certificate with valid UDIN (Unique Document Identification Number) will only be considered in order of fulfill this criterion.**

$$\text{Minimum Average Annual Financial Turnover} = \frac{FY1 + FY2 + FY3}{3}$$

(In above formula, if data for any of FY1, FY2 and FY3 is not provided then it shall be taken as NIL for that FY).

**Start-ups shall be exempted** from the above pre-qualification criteria, without any relaxation in quality standards or technical parameters as per D.O. No. 5(4)/2016-BE-I dated 15.02.2017. For claiming Start-Up exemption, vendors have to submit DPIIT (Dept. of Promotion of Industry and Internal Trade)/DIPP (Department for Industrial Policy and Promotion) recognition certificates). Date of issue of Start-up Exemption certificate should be on or before tender Part-1 Bid opening date.



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

- c) Bidder has to submit one or more purchase order/s of 'similar item' from any customer with minimum cumulative value of **Rs. 95 Lakhs** along with the proof of execution like Invoice / Consignee Receipt Note / Completion Certificate, from any customer(s). PO and date of proof of execution like invoice etc. should be 01.10.2023 or afterwards till tender Part-1 bid opening date. **Further, it is mandatory to submit atleast one PO copy of HSS Fit Bolts or of Similar item of any value (as per Sl. No. 4 of Table:3).** PO value mentioned above is excluding taxes. The details of the submitted POs along with its proof of execution must be filled as per attached Annexure - P. **Also, please note that the proof of execution like Invoice / Consignee Receipt Note / Completion Certificate must include Purchase Order reference number, otherwise that PO will not be considered for the fulfilment of this tender term.**

PO and date of proof of execution like invoice etc. should be 01.10.2023 or afterwards till tender Part-1 bid opening date.

**Table 3 : "Similar item"** has been defined as "Bolts, Nuts or Washers as per standard as below:-

| S. No. | Item     | Standard                                                                                               | Equivalent                                                                                                                |
|--------|----------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1      | Bolt     | Grade 8.8 or above as per:<br>IS-1364 (Latest) part-1;<br>IS-1367 (Latest) part-3;<br>IS-3757 (Latest) | EN 14399-3 (Latest) Property Class: 8.8 or above;<br>EN ISO 898-1 for Mechanical Properties<br>Or equivalent ISO standard |
| 2      | Nut      | Grade 8 or above as per:<br>IS-6623 (Latest)<br>IS-1364 (Latest)                                       | EN 14399-3 (Latest) Property Class: 8 or above;<br>Or equivalent ISO standard                                             |
| 3      | Washer   | Grade 8 or above as per:<br>IS-6649 (Latest)                                                           | EN 14399-5 (Latest)<br>Or equivalent ISO standard                                                                         |
| 4      | Fit Bolt | --                                                                                                     | EN 14399-8 (Latest)<br>Or equivalent ISO standard                                                                         |

**Start-ups shall be exempted** from the above pre-qualification criteria, without any relaxation in quality standards or technical parameters as per D.O. No. 5(4)/2016-BE-I dated 15.02.2017. For claiming Start-Up exemption, vendors have to submit DPIIT (Dept. of Promotion of Industry and Internal Trade)/DIPP (Department for Industrial Policy and Promotion) recognition certificates.)

BHEL may carry out evaluation of bidder's capability. BHEL reserves the right to accept/reject any offer based on evaluation of bidder's capability. For verification of data presented for pre- qualification bid, BHEL may decide to visit the bidder(s) works. Any fact found deviating from bids during evaluation shall make the bidder liable to be dis-qualified.

### **S3. PART-I: TECHNO-COMMERCIAL BID**

**Techno - Commercial Bid should contain *all the documents/confirmations as per following details:***

- a) Acceptance of Techno-Commercial terms and conditions shall be attached along with bid document. This can be attached either by signing each page of terms and conditions or a confirmation statement.



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

*IF THE OFFER IS NOT ACCOMPANIED WITH ACCEPTANCE OF TERMS AND CONDITIONS, IT SHALL BE CONCLUDED THAT ALL THE TERMS AND CONDITIONS ARE ACCEPTABLE AND NO CLAIM WHATSOEVER SHALL BE ENTERTAINED LATER ON.*

*IF THERE IS ANY DEVIATION IN REFERENCE TO ANY OF THE TENDER TERM, KINDLY MENTION IN PART-I TECHNO-COMMERCIAL BID ONLY. DEVIATION SPECIFIED ELSEWHERE, WILL NOT BE CONSIDERED.*

- b) MSE vendors should submit **UDYAM Registration Certificate** for availing applicable benefits for MSE vendors as per tender terms. Validity of document shall be considered as on date of Part I opening as per the latest available notification from Government.
- c) Documents as per pre-qualification terms.
  - List of Machinery
  - Balance sheets / CA certificate.
- d) Duly filled Annexure - P (Details of Submitted PO and their Proof of Execution, as per above stated PQC term at Sr. no. S2.c))
- e) Duly filled Annexure - R (Integrity Pact)

### **S4. DELIVERY SCHEDULE**

Total Delivery Period from date of Purchase Order/ Letter of Intent is defined as per table 4 below: -

**Table 4**

| PO Quantity | Delivery Period                                      |
|-------------|------------------------------------------------------|
| First 50%   | Within 120 days from the date of Release of PO / LOI |
| Balance 50% | Within 150 days from the date of Release of PO / LOI |

In case of non-acceptance of this term, bid shall be liable for rejection.

### **S5. VALIDITY OF OFFERS**

The offers shall be kept valid for **75 days** from the actual date of techno-commercial bid (Part I) opening.

### **S6. DELIVERY DESTINATION and SCOPE OF UNLOADING**

*Delivery Destination for all the items is BHEL IVP Goindwal (Punjab) : -*

**Complete Address:** Bharat Heavy Electricals Limited  
Industrial Valves Plant  
433, Industrial Complex  
Goindwal Sahib  
Distt Tarn Taran, Punjab - 143422

**Unloading** of Material at any BHEL Unit/Project Site is in scope of BHEL.



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

### S7. PRICE BASIS

- Rates shall be quoted on rate INR per Unit basis, Exclusive of taxes & on FOR Delivery Destination Basis. Comparison shall be made on landed rate per Unit. Evaluation shall be done line item wise as per above Table -1.
- Order of enquiry item Sl. no. shall be maintained in the quotation.

### S8. REVERSE AUCTION

Reverse auction will be conducted in this tender enquiry. Guidelines for Reverse Auction is Available at the following weblink : -

<https://www.bhel.com/guidelines-reverse-auction-2024>

### S9. DIFFERENTIAL FREIGHT CLAUSE

The rates finalized against each schedule shall include cost of transporting finished products from Vendor's Works to delivery location specified in the tender.

All the consignments are normally envisaged for dispatch from Vendor's Works to specified location in the tender. However, depending upon requirement, BHEL may ask the vendor to despatch the consignments to different project sites/BHEL units or other location within India and vendor shall deliver the material at this revised destination. BHEL's decision shall be final in this regard. In such case, differential freight charges shall be deducted or paid based on applicable distance. BHEL reserves the right to change the delivery destination in already released POs on vendor or before releasing new PO.

#### **Differential Rates will be calculated as below:**

If BHEL advises to despatch material at any other location, then BHEL will calculate freight portion from vendor works to Location specified in tender (say it comes out amount 'X') and from vendor works to New location specified by BHEL (say it comes out amount 'Y'). Then differential freight cost will be calculated by subtracting both freight cost (Y-X). If it comes out to be positive, then this differential cost shall be given extra to vendor. If it comes out to be negative, then this differential amount shall be deducted from vendor. Kindly note that this extra payment to vendor/deduction from vendor shall be amended suitable in Purchase order before despatch.

For Calculation of Transportation freight, BHEL has mentioned Rate/KM/MT in INR from anywhere to anywhere in India. For calculating total cost, this needs to be multiplied by distance in KM & weight in MT.

**Rate/KM/MT from anywhere to anywhere is mentioned below:**

Table 5

| Relevant category | Freight Rate per MT per KM | Remarks                       |
|-------------------|----------------------------|-------------------------------|
| TAAA2             | 3.30                       | Anywhere to anywhere in India |

Distance shall be taken in KM as shortest distance from Google map.



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

**Example:** Suppose one vendor is located in Ludhiana (Punjab). Distance from Ludhiana to BHEL Goindwal is approx. 110 KM & distance from Ludhiana to Talcher site is approx. 1700 KM. The specified destination in tender is Talcher and the new location specified for delivery of material is Goindwal. Suppose weight of consignment is 60 MT

Then freight from Ludhiana to Goindwal (Y) comes out to be Rs.  $3.30 \times 150 \times 60 = \text{Rs. } 21,780.00$ . The freight from Ludhiana to Talcher (X) comes out to be Rs.  $3.30 \times 1900 \times 60 = 3,36,600.00$ . Now differential cost (Y-X) comes out to be Rs.  $(-)3,14,820.00$ . Hence this differential amount will be deducted from vendor.

### **S10. VENDOR REGISTRATION**

Bidders, who are not currently on registered list of BHEL IVP Goindwal Sahib, are advised to submit their application for vendor registration through online system on [www.bhel.com](http://www.bhel.com). Direct link for online supplier registration is <https://supplier.bhel.in/>. This application submission can be done separately/immediately without waiting for the tender opening.

### **S11. INSPECTION**

Bidders will submit TPI (Third party inspection) / BHEL Inspection report to BHEL IVP after inspection. Then based on Inspection report, BHEL will give dispatch clearance and then only the material shall be supplied to the respective consignee address.

BHEL will provide dispatch clearance **within 7 working days** of receipt of complete quality cleared documents. In case, BHEL is not able to provide the dispatch clearance in the above stipulated time, then the delivery date for the inspected material shall be suitably amended.

### **S12. QUANTITY VARIATION**

+ 2% Variation in the quantity is applicable for all the items.

### **S13. PACKING OF MATERIAL**

- a) Items shall be packed in Polythene lined Hessian Cloth/Bag not exceeding 25kgs and shall be put inside wooden boxes with maximum weight of 3 MT for each box & there shall be no mixing of two or more sizes in single box.
- b) Bidder shall ensure that wooden boxes are sturdy and it is able to withstand material load without any breakage/damage during transportation and loading / unloading.
- c) Wooden box shall have provision for putting nylon slings so that box can be lifted by overhead cranes.
- d) Wooden Boxes shall be sealed by minimum two numbers of M.S. strap of 19 mm width.
- e) Following information must be legibly available on each wooden box: -
  - (i) Supplier name / vendor code
  - (ii) Item description
  - (iii) Invoice no. / Date of Invoice
  - (iv) Number of Bags
  - (v) Total Quantity of item



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

### **S14. LOADING CRITERIA CUM COUNTER OFFER**

Loading shall be done as per following criteria subject to fulfilment of MSE clause:

Table - 6

| Tender Enquiry Sr. no. | Counter offer Case | Count of Items |
|------------------------|--------------------|----------------|
| 3, 4, 9, 10            | Case – I           | 04             |
| 1, 2, 5, 6, 7, 8, 11   | Case – II          | 07             |

**Case - I:** For 04 Items, as shown in table - 6 above, 100% loading will be done on L1 bidder. However, counter-offer will be given to eligible vendors, if MSE clause is not fulfilled.

**Case -II:** For 07 Items, as shown in table - 6 above, Contract will be entered with maximum two vendors for these items to meet BHEL requirements. However, number of vendors can be increased, if MSE clause is not fulfilled amongst two vendors. For this, BHEL reserves the right to give counter offer of L1 rates to other vendors, based on their ranking, except highest bidder. Loading shall be done on vendor as per below mentioned criteria, subject to acceptance of counter offered L1 rates:

| Vendor    | L1  | L2  |
|-----------|-----|-----|
| % Loading | 60% | 40% |

- If L2 does not accept the counter offer for any particular any item/items, L3 vendor will be contacted and If L3 does not accept the counter offer for any particular any item/items, L4 vendor will be contacted and so on except highest (H1) vendor.
- If no vendor accepts the counter offer for any particular any item/items, entire 100% quantity shall be loaded upon L1 vendor.
- In case loading on vendors is not meeting the MSE clause, then equal deduction will be done from the non-MSE vendors, to meet the MSE Purchase preference criteria.

Note: In case of Two qualified bidders, BHEL may give counter offer to Highest (H1) Bidder, wherever applicable.

### **S15. DETENTION CHARGES – WHILE UNLOADING AT SITE**

The detention charges shall be payable as: -

@ Rs. 800/- for Part Loads i.e. for vehicle carrying load below 5.5 MT per vehicle per day;

@ Rs.1700/- for vehicle carrying load above 5.5 MT and below 18 MT per vehicle per day and

@ Rs. 2200/- for vehicle carrying load above 18MT per vehicle per day,

detention charges shall be on each occasion subject to detention of vehicle in plant/site beyond a period defined as given below: -

| Unloading Points           | Free Period in days excluding Day of entry, day of exit, Sunday and Holiday declared at respective Project Site |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|
| Stores Wards of BHEL Units | 2                                                                                                               |
| Sites / Other Locations    | 2                                                                                                               |



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

*[Weight of material will be considered as mentioned in Lorry Receipt generated by the Transporter or as per the Packing list/ Invoice generated by the Vendor, whichever is lower]*

Day of entry, day of exit, Sunday and Holiday declared at respective Project Site shall be exclude from total detention period.

However, in such cases Supplier will have to submit proof of entry and exit day of vehicle in the plant/port/site.

Immediately on reaching the site, vendor shall have to inform the reaching/site entry date. In case they are not allowed inside the site/works, then vendor will inform through email along with GPS data / Photographs / Videos / etc. as the proof of the vehicle reaching at site. Please note that vehicle registration number and the site gate / board / etc. must be visible on the submitted photographs/ Video / etc.

**In such cases, date on which email with GPS data / Photograph/ etc., is received at BHEL IVP Goindwal will be considered as the date of arrival of vehicle at site/Stores.** The decision of BHEL in this regard shall be final.

Total detention charges shall be limited to 50% of the basic freight. For this purpose, freight shall be calculated as per Formula given in Differential freight clause (S18 of tender terms). An approval from BHEL shall be obtained for payment of detention charges more than 50% of the basic freight in exceptional cases.

For example, if the vehicle reached at site for unloading and made IN entry on 01.04.2024, the free period (2 days as per above table) will be available up to 03.04.2024. However, if the EXIT entry of the vehicle is made on 06.04.2024, then detention will be calculated excluding 06.04.2024 and free period (2 days) and two days will be eligible for detention.

### **S16. PAYMENT THROUGH TReDS PLATFORM (MANDATORY)**

All MSME payments for Goods or Services to be mandatorily settled through TReDS. A MSME Gazette Notification dated 30-06-2026 Vide D.O.No.DPE-7(4)/2007-Fin dated 03-07-2026, Gazette Notification S.O. 3507(E) dated 30-06-2026 of Ministry of Micro, Small and Medium Enterprises (MSMEs) mandating the use of Trade Receivables Discounting System (TReDS) as a transaction settlement platform by the Central Public Sector Enterprises (CPSEs).

### **S17. INTEGRITY PACT (IP)**

- a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

| Sl. no. | IEM                                  | Email ID     |
|---------|--------------------------------------|--------------|
| 1.      | Dr. Sarat Kumar Acharya, Ex-CMD, NLC | iem1@bhel.in |
| 2.      | Shri R. Mukundan, IRPS (Retd.)       | iem2@bhel.in |
| 3.      | Shri Madan Lal Meena, IAS (Retd.)    | iem3@bhel.in |



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

- b) The IP as enclosed with the tender (Annexure – R) is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two / three-part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.
- c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to the panel of IEM(s). All correspondence will the IEMs shall be done through email only.

### Note:

*No routine correspondence shall be addressed to the IEM (phone / post / email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification / issues shall be addressed directly to the tender issuing (procurement) department's official whose contact details are provided below:*

Details of contact person(s):

|                                   |                                                                             |                                                                             |
|-----------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Name</b>                       | Rajesh Kumar                                                                | Pranshu                                                                     |
| <b>Department</b>                 | Material Management                                                         | Material Management                                                         |
| <b>Address</b>                    | 433, Industrial Complex, IVP<br>Goindwal, Dist. Tarn Taran<br>Punjab 143422 | 433, Industrial Complex, IVP<br>Goindwal, Dist. Tarn Taran<br>Punjab 143422 |
| <b>Phone: (Landline / Mobile)</b> | 01859-224618 / 9888772318                                                   | 01859-224619 / 9464679705                                                   |
| <b>Email</b>                      | <a href="mailto:kumarrajesh@bhel.in">kumarrajesh@bhel.in</a>                | <a href="mailto:pranshu@bhel.in">pranshu@bhel.in</a>                        |

### S18. PERFORMANCE SECURITY (PS)

***This term will supersede the Clause no. 13 of GCC Rev 16***

Applicability:

- 1) Performance Security will not be applicable in which total PO value on vendor in one tender enquiry is less than or equal to Rs. twenty lakhs.
- 2) **(a) In case total PO value on vendor in one tender enquiry is greater than Rs. 20 Lakhs:** Successful bidder (L1 or counter-offer accepted) has to submit Performance Security (PS) @5% of PO value, **subject to maximum value of Rs. 3 Lakh**, within 21 days from the date of award of PO. PS shall be valid for a period of one year. This PS will be released to the vendor without interest after two months of completion of all supplies under the PO.
- (b) In case total PO value on vendor is equal to or greater than Rs. 2 crores, then before** the release of this PS as mentioned in clause 4 (a) above, vendor has to submit another PS of Rs. one lakh after two months of completion of all supplies under the PO. This PS shall be valid for a period of 18 months. This additional PS will be released to the vendor without interest after expiry of validity upon fulfilment of contractual obligations as per terms of contract

Vendor has to submit written request to BHEL for refund of PS well in advance before the due date. Further release of PS as mentioned in 4(a) will also be subject to submission of additional PS as mentioned in 4 (b) above if applicable.



## SPECIAL TERMS AND CONDITIONS

Tender Enquiry No. 2627-052E Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

In case of non-submission of PS for 5% of contract value, it will amount to breach of contract.

### Mode of deposit:

Performance security may be furnished in the following forms:

- 1) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.

### Account details:

|           |                     |
|-----------|---------------------|
| Bank Name | STATE BANK OF INDIA |
| BRANCH    | GOINDWAL SAHIB      |
| A/C NO    | 40179740806         |
| IFSC CODE | SBIN0010743         |

- 2) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- 3) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
- 4) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
- 5) Insurance Surety Bond.
- 6) By way of retention from dues available in the form of Bills payable to the supplier against same / other contracts in the same unit.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith).

### Forfeiture of Performance Security:

The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.

## S19. FORCE MAJEURE

***This term will supersede the Clause no. 23 of GCC Rev 16***

1. Notwithstanding the provisions contained in other clauses, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure. For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics,



## SPECIAL TERMS AND CONDITIONS

**Tender Enquiry No. 2627-052E** Dated 10.10.2026 **Due date 21.10.2026**

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management, freight embargoes and Acts of GOD.

2. If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser/Consignee in writing of such conditions and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the Purchaser/Consignee in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
3. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding NINETY days, either party may at its option terminate the contract without any financial repercussion on either side.
4. In case due to a Force Majeure event the Purchaser/Consignee is unable to fulfil its contractual commitment and responsibility, the Purchaser/Consignee will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

**These Special terms & conditions and General Contract Conditions (GCC) collectively are the part of tender terms and conditions.**



## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### **TABLE OF CONTENTS**

|                                                                                      |    |
|--------------------------------------------------------------------------------------|----|
| 1. Instruction to Bidder .....                                                       | 2  |
| 2. Scope of Supply .....                                                             | 2  |
| 3. Price Basis.....                                                                  | 3  |
| 4. Taxes & Duties .....                                                              | 3  |
| 5. Evaluation in Case of More Than One L-1 Bidder.....                               | 4  |
| 6. Inspection.....                                                                   | 4  |
| 7. Delivery Schedule.....                                                            | 5  |
| 8. Reverse Auction.....                                                              | 5  |
| 9. Payment Terms .....                                                               | 5  |
| 10. Supplied Material Adjustment.....                                                | 6  |
| 11. Treatment of cases regarding Conflict of Interest .....                          | 6  |
| 12. Validity of Offers.....                                                          | 7  |
| 13. Performance Security (PS).....                                                   | 7  |
| 14. Breach of contract, Remedies and Termination.....                                | 8  |
| 15. Acceptance of Material Supplied.....                                             | 8  |
| 16. Warrantee and Corresponding Repair / Replacement of Goods.....                   | 9  |
| 17. Preferences for Micro and Small Enterprises (MSEs).....                          | 10 |
| 18. Liquidated Damage (LD).....                                                      | 10 |
| 19. Liability Under Reverse Charge (RCM).....                                        | 11 |
| 20. Preference to Make in India.....                                                 | 11 |
| 21. Resolution of Disputes.....                                                      | 11 |
| 22. Access to Manufacturing Premises.....                                            | 13 |
| 23. Force Majeure .....                                                              | 13 |
| 24. Non-Disclosure Agreement .....                                                   | 13 |
| 25. Preventive Checks to Eliminate Suspected Cartel Formation .....                  | 14 |
| 26. Fraud Prevention Policy.....                                                     | 14 |
| 27. Suspension of Business Dealings with Suppliers / Contractors .....               | 14 |
| 28. Discrepancy in Words and Figures .....                                           | 15 |
| 29. LOI (Letter of Intent) .....                                                     | 15 |
| 30. Sub-Contract.....                                                                | 15 |
| 31. Clarifications.....                                                              | 16 |
| 32. Restrictions Under Rule 144(XI) of The General Financial Rules (GFR), 2017 ..... | 16 |
| 33. General.....                                                                     | 17 |
| 34. Treatment in Case of Dealer Acceptance .....                                     | 19 |
| 35. Enclosure .....                                                                  | 19 |

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### 1. Instruction to Bidder

Quotations shall be submitted before due date and time. Late offers are liable to be rejected, so please ensure to submit bid well within due date and time. Techno-commercial part will be opened on due date.

**Based on evaluation of techno-commercial offers, Price bids of bidders who qualify from techno-commercial evaluation shall be opened. BHEL may decide to open the Price bid same day at 1700 hrs. If not opened on the same day, all qualifying bidders shall be notified for date of opening of Price bids by email/fax/post/courier/E-procurement system generated email.**

#### 1.1 Instruction to Bidder (In case of Non-E-Procurement / Paper/ Manual/ Hard Copy based tenders)

Sealed Tenders can be dropped in the tender box labeled as 'Tender box for MM contracts.' This tender box is located at the entrance of Admin block BHEL Goindwal. Quotations can also be submitted through e-mail at **tendermm\_ivp@bhel.in**. Offers received in time shall be considered only when offers are complete in all respects. In case of bulky tenders, please handover quotation to tender issuing authority [Contact: 01859 224 615/ 618]. Bid can be sent to following address:

**BHEL, Industrial Valve Plant,  
#433, Industrial Complex,  
Goindwal Sahib, Distt. Tarn Taran,  
Punjab-143422.**

#### 1.2 Instruction to bidder (In case of E-Procurement)

1. Interested bidders / suppliers shall submit their offer through e-procurement mode at <https://eprocurebhel.co.in/>.
2. **Offers in any other mode will not be accepted.**
3. Procedure for submission of tender is available in the "Bidder Manual Kit" at e-tender portal <https://eprocurebhel.co.in/>.
4. In case of any difficulty faced while registering on BHEL's e-Procurement portal developed by NIC, queries may be addressed to 0120-4001002, 0120-4001005 and 0120-6277787; email: [support-eproc@nic.in](mailto:support-eproc@nic.in). These details are also available on 'Contact Us' page of the portal.
5. Before uploading scanned documents if any, the bidders shall sign on all the statements, documents, certificates uploaded by him, owning responsibility for their correctness / authenticity.
6. **Disclaimer clause:** Neither the Organization (Bharat Heavy Electricals Ltd.) nor the service provider is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

### 2. Scope of Supply

Material shall be supplied as per the applicable latest Technical Delivery Conditions (TDC)/ Material Standard requirements/BPS/Drawing and other requirement as given in the Tender Enquiry. National & International material Standards shall have to be arranged by vendors themselves. Latest applicable revisions of standards/procedures to be referred.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

All required tests as called in referred material standard/BHEL/TDC/drawing etc. shall be carried out by vendor at no extra cost. Material Test Certificates (MTC), inspection reports and Compliance/Guarantee Certificate are to be provided along with the supplies.

### 3. Price Basis

1. Order of enquiry item sl. no. shall be maintained in the quotation.
2. The rates quoted shall be firm and fixed. No price variation is proposed and allowed.
3. Rates quoted should be FOR BHEL Goindwal basis. The offers quoted on other than FOR Goindwal basis are liable to be rejected.

In case bidder has quoted Ex-works prices, then he/she will be given an opportunity to accept price basis as FOR Goindwal either by accepting delivery as FOR Goindwal in same quoted price or by providing loading factor on his/her quoted ex-works prices to make them FOR prices.

**Variation in GST or any other statutory levies during contractual delivery period shall be to BHEL's account.**

### 4. Taxes & Duties

Payment of GST portion will be released to vendor only upon completion of statutory requirement and further subject to following:

- a) Vendor declaring such invoice in his GSTR-1 and
- b) Receipt of goods and Tax invoice by BHEL and
- c) Confirmation of payment of GST thereon by vendor on GSTN portal.
- d) Above is subject to receipt of goods/service and tax invoice thereof along with vendor declaring invoice in his return and paying GST within timeline prescribed for availing ITC by BHEL.

Following may please be noted for availing Input Tax Credit (ITC) by BHEL:

1. Since ITC can be availed only when BHEL is in possession of GST Tax invoice and after receipt of goods. Thus, vendor to ensure timely dispatch of goods and Tax invoice. It may be noted that in case of any delay in receipt of Tax Invoice and/or receipt of goods, the ITC availment by BHEL will get delayed thus entailing additional cash outflow & may even get denied if ITC availment timelines are breached.
2. Further ITC can be availed only when vendor has declared such invoice in his outward supply Return GSTR-1 and after GST thereon has been paid by him at the time of filing of monthly Return.
3. If GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount shall be recoverable from vendor along with interest levied/leviable on BHEL.
4. Further, in case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law shall be recoverable from vendor/contractor along with interest levied/leviable on BHEL.

#### GST Law Provision in 'Bill to Ship to' Case

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

In case where delivery destination is other than BHEL IVP Goindwal, then the following clause is also applicable: -

As per the extant provisions of Sec. 12(2), read with Sec. 31(1) of CGST Act, 2017, the time limit to raise GST invoice is till the time of removal of goods (where the supply involves movement of goods).

Accordingly, it has been reiterated that customer (BHEL's Customer) billing is also to be done by BHEL at the time of vendor's billing on BHEL on removal of goods from vendor's works and GST liability is to be discharged thereof.

Hence, Vendor is required to inform BHEL at the time of billing/removal of goods. In the case where BHEL is get penalized by GST authority, due to delay in generating the invoice and the core reason for this delay is attributable to supplier, then the penalty imposed on BHEL by GST authorities will be pass on to supplier and deduction will be done from the pending dues of supplier with BHEL.

### 5. Evaluation in Case of More Than One L-1 Bidder

In the course of evaluation, if more than one bidder happens to occupy L1 status, effective L1 will be decided by soliciting discounts from the respective L1 bidders.

In case more than one bidder happens to occupy the L1 status even after soliciting discounts, the L1 bidder shall be decided by a toss / draw of lots, in the presence of the respective L1 bidder(s) or their representative(s).

Ranking will be done accordingly. BHEL's decision in such situations shall be final and binding.

### 6. Inspection

1. The seller shall give adequate notice, of 1 week or as mutually agreed period, in writing to the Purchaser about the date and place at which the goods will be ready for inspection/ testing, as provided for in the contract.
2. Purchaser or his authorized representative shall be entitled to carry out inspection of material and workmanship/Surveillance Audit at Seller's premises or at his sub-contractor's premises at all reasonable times during execution of contract; Such inspection, examination and testing, if made, shall not absolve the Seller from his obligations under the contract. No additional charges shall be claimed for such inspections. Moreover, all required infrastructure (testing, tools etc) have to be arranged by supplier.
3. Any inspection carried out before supply by vendor/incoming stage at BHEL notwithstanding, if any defect/non-conformity is noted during processing, the same shall be attended/replaced by vendor at no extra cost.
4. BHEL representative from unit or CQ is authorized to carry out audits along with TPIA at vendor's works before clearing the items for dispatch.
5. Necessary tooling including thread gauges etc. have to be arranged by vendor. Only in exceptional cases, based on BHEL discretions item/nature, BHEL may consider request to provide gauges if available with BHEL. But in no case this shall be linked with delivery of material.
6. In case of following points, visit charges to be paid to Third Party Inspection Agency (TPIA) shall be imposed as penalty on Supplier:

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- a) Nothing/NIL material is offered during Inspection (whilst physical visit of Inspection Engineer at Supplier's work) with respect to "Offered Quantity" mentioned in raised Inspection Call.
- b) Lapses on the account of supplier has led to rejection of offered material (as per approved QAP/ Technical Specifications/ Other pertinent requirement), while carrying out Inspection.
- c) Less Quantity/ Short Quantity is offered during Inspection (whilst physical visit of Inspection Engineer at Supplier's work) with respect to "Offered Quantity" mentioned in raised Inspection Call for any of the line(s) item, leading to re-visit of Inspection Engineer.

## 7. Delivery Schedule

Supplies shall be affected and completed as per schedule mentioned in special terms and conditions. Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.

In case of non-acceptance of delivery schedule, supplier bid is liable to be rejected.

## 8. Reverse Auction

In case, it is declared in special terms & conditions of tender enquiry that RA is applicable for the NIT, then RA will be conducted as per following clause:

BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on <https://www.bhel.com/>) for this tender. RA shall be conducted among the techno-commercially qualified bidders as per RA guidelines.

Price bids of all techno-commercially qualified bidders shall be opened and same shall be considered for RA. In case any bidder(s) do(es) not participate in online Reverse Auction, their sealed envelope price bid along with applicable loading, if any, shall be considered for ranking.

## 9. Payment Terms

1. Payments shall be made to the Seller (MSE / Non MSE) within the mentioned days (as per below table) from the Payment Due date. Vehicle entry date at BHEL Units / Sites / other delivery destinations as mentioned on Lorry Receipt (LR) copy shall be taken as Payment due date.

| Type of Bidder                   | Payment Terms (Number of days) |
|----------------------------------|--------------------------------|
| Micro & Small Enterprises (MSEs) | 45 days                        |
| Medium Enterprises               | 60 days                        |
| Non MSME                         | 90 days                        |

In case there is shortfall in documents/deficiency in material as per the tender terms/purchase orders, the same shall be notified by BHEL to supplier. Payment due date shall be revised accordingly considering submission of all documents/removal of deficiency by supplier.

For availing MSE benefits, latest copy of Udyam certificate shall be submitted.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### **MSME bidders can avail benefits of payment through TReDS (Trade Receivable e Discounting System).**

In case of any deviation from standard payment term mentioned above, BHEL shall load on the item price at "Base rate of SBI (as applicable on the date of bid opening; Techno-commercial bid opening) + 6% for the period of relaxation sought by bidders.

#### **2. Documents to be submitted (if applicable)**

- i) Tax invoice (Invoice shall be GST compliant and should contains all the required information such as GST No, HSN code etc.)
- ii) Transporter copy along with material/consignment. In case material is delivered at location other than BHEL Goindwal, then LR receipt/acknowledgement is required.
- iii) Material Test Certificates (MTC) and
- iv) Compliance Certificate.

Any additional document required shall be mentioned in special terms & conditions.

#### **3. GST registration number is to be submitted by qualified vendor as per GST law.**

#### **4. It is mandatory to mention proper material codes in the invoices and separate invoices to be raised for different POs.**

#### **5. BHEL releases payment through EFT mode ONLY. Necessary details may please be submitted by filling required format before release of payment.**

### **10. Supplied Material Adjustment**

Item/s pending in previous PO has to be billed in previous PO only. Otherwise, BHEL will be free to adjust the supplies in previous PO. Any implication of tax will be on supplier's account. For this it is desirable that vendor should reconcile the pending PO statement every month/frequently with BHEL. Vendor can also view these details at Portal (<https://trichy.bhel.com/mm/index.jsp>).

### **11. 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:

- 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 Authorized distributor (with/ or without the OEM). from quoting equipment manufactured by an Original Equipment Manufacturer (OEM) in procurements under a Proprietary Article Certificate.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- 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.

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.

It has to be signed by the authorized signatory of the bidder.

### 12. Validity of Offers

The offers shall be kept open for acceptance 'for number of days mentioned in special terms and conditions' from the date of opening of the tender. In case of tender extension, the bid validity shall be considered from the date of tender opening.

### 13. Performance Security (PS)

Applicability:

- 1) Performance Security will not be applicable in which total PO value on vendor in one tender enquiry is less than or equal to Rs. twenty lakhs.
- 2) **(a) In case total PO value on vendor in one tender enquiry is greater than Rs. 20 Lakhs:**  
Successful bidder (L1 or counter-offer accepted) has to submit Performance Security (PS) @5% of PO value within 21 days from the date of award of PO. PS shall be valid for a period of one year. This PS will be released to the vendor without interest after two months of completion of all supplies under the PO.

**(b) In case total PO value on vendor is equal to or greater than Rs. 2 crores, then before** the release of this PS as mentioned in clause 2 (a) above, vendor has to submit another PS of Rs. one lakh after two months of completion of all supplies under the PO. This PS shall be valid for a period of 18 months. This additional PS will be released to the vendor without interest after expiry of validity upon fulfilment of contractual obligations as per terms of contract

Vendor has to submit written request to BHEL for refund of PS well in advance before the due date. Further release of PS as mentioned in 2 (a) will also be subject to submission of additional PS as mentioned in 2 (b) above if applicable.

In case of non-submission of PS for 5% of contract value, it will amount to breach of contract.

**Mode of deposit:**

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

Performance security may be furnished in the following forms:

- 1) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL.

#### Account details:

|           |                     |
|-----------|---------------------|
| Bank Name | STATE BANK OF INDIA |
| BRANCH    | GOINDWAL SAHIB      |
| A/C NO    | 40179740806         |
| IFSC CODE | SBIN0010743         |

- 2) Bank Guarantee from Scheduled Banks / Public Financial Institutions as defined in the Companies Act. The Bank Guarantee format should have the approval of BHEL.
- 3) Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL).
- 4) Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL).
- 5) Insurance Surety Bond.
- 6) By way of retention from dues available in the form of Bills payable to the supplier against same / other contracts in the same unit.

(Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith).

#### Forfeiture of Performance Security:

The performance security will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.

### 14. Breach of contract, Remedies and Termination

In case of breach of contract, wherever the value of security instruments like performance bank guarantee available with BHEL against the said contract is 10% of the contract value or more, such security instruments to the extent of 10% contract value will be encashed. In case the value of the security instruments available is less than 10% of the contract value, the balance amount be recovered in all or any of the following manners:

- from dues available in the form of Bills payable to defaulted supplier against the same contract.
- from the dues payable to defaulted supplier against other contracts in the same Region/Unit /any other region/unit.
- In-case recoveries are not possible with any of the above available options, Legal action shall be initiated for recovery against defaulted supplier.

Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.

### 15. Acceptance of Material Supplied

1. The supply shall strictly as per the specifications in the tender /purchase order.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

2. Delivery of the ordered items as per the delivery terms in the Purchase Order does not automatically constitute acceptance of the delivered items.
3. Acceptance of the materials supplied will be based on the inspection and certification documents by the supplier as stipulated in the Purchase order. However, BHEL reserves the right to test the material supplied, if required, at BHEL Lab or any other approved/accredited lab and the result will be binding on the supplier.
4. The acceptance or otherwise of the delivered items will be separately communicated to the supplier by BHEL through B2B portal within 15 days from the delivery of items or delivery of the required test certificates /other documents whichever is later.
5. In case of rejection of the delivered items, either part or full, the vendor shall replace the rejected items as per the specification in the Purchase order/tender at their cost within 30 days of communication of rejection to the supplier. The supplier shall be given maximum two opportunities to replace the rejected items.
6. After the clearance of the 1st lot, in case of rejection of the delivered items, either part or full, if the supplier fails to replace the rejected items within 30 days of communication of the rejection, the same shall be treated as failure to execute the contract and actions as per the Guidelines for Suspension of Business Dealings with Suppliers /Contractors available in the webpage: <https://www.bhel.com> would be taken against such supplier.

#### 16. Warrantee and Corresponding Repair / Replacement of Goods

Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, vendor shall give a warrantee against design & manufacturing defects for a period of 18 months from the date of receipt. In case of non-acceptance of this term, bid shall be liable for rejection.

If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation. Corresponding quantity shall be treated as unsupplied against respective purchase order till replacement is received at BHEL. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including repair / replenish rejected goods, at the cost of the seller as per contractual obligations.

All incidental charges like freight, insurance and customs duty in respect of return of defective items are to vendor's account only. BHEL will inform related invoice, quantity etc. to supplier. Supplier has to give advance intimation / plan (Transporter, Vehicle details) for the lifting of material. Further supplier has to provide requisite documents (such as Credit Note, e-Way Bill etc.) to lift the rejected material. Material should be lifted within one month from date of intimation. After one-month, BHEL will not be responsible for rejected material and BHEL shall have the right to dispose off such rejected material.

The defective parts and components shall be collected by your Indian agent or / authorized person, only after completing the replacement / repairs. If the supplier fails to replace / rectify the defective/ damaged items on free of cost within one month of reporting from our end, the same shall be treated as failure to execute the contract and actions as per the Guidelines for Suspension of Business Dealings with Suppliers /Contractors available in the webpage: <https://www.bhel.com> would be taken against such

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

supplier without prejudice to the other remedies available to BHEL under the contract and law in this regard.

### 17. Preferences for Micro and Small Enterprises (MSEs)

Preferences as mentioned in “Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012” & “Public Procurement Policy for Micro and Small Enterprises (MSEs) Amendment Order, 2018”, or as per latest guidelines issued by government shall be given to Micro and Small enterprises.

Main points which are mentioned in the above orders are as follows:

- 25% Procurement of the tender value shall be made from MSE (Micro, Small Enterprises) firms.
- 25% of the 25% quantity (i.e. 6.25% of the tender quantity) offered to the MSE's shall be reserved for MSE's owned by SC/STs. Failure to participate by any MSE owned by SC/ST's; this 6.25% quantity shall be procured from other MSEs.
- 3% from within the 25% quantity offered to the MSE's shall be reserved for women owned MSE's. Failure to participate by any MSE owned by women; this 3% quantity shall be procured from other MSEs.
- EMD shall be exempted for MSE's. All these benefits are subject to production of all statutory documents
- In tender, participating Micro and Small Enterprises quoting price within price band of L1+15 per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise and such Micro and Small Enterprise shall be allowed to supply up to 25 per cent of total tendered value. In case of more than one such Micro and Small Enterprise, the supply shall be shared proportionately (to tendered quantity).

MSE suppliers can avail the intended benefits only if they submit **Udyam Registration Certificate** along with the offer. No other document shall be considered for availing MSE benefits. Non-submission of such document will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is not cleared before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required document is to be uploaded on the portal.

*Note: It may however be noted that MSE guidelines as on date (Date of Technical Bid Opening Part-1) shall prevail.*

### 18. Liquidated Damage (LD)

1. Time is the essence of the contract.
2. The ordered items shall be delivered as per the delivery period mentioned in the Purchase Order.
3. In case the supplier supplies the ordered items beyond the delivery period specified, Liquidated Damages -LD - as detailed below shall be levied from the supplier without prejudice to any other relief /compensation available to BHEL, Punjab under any other condition of the contract/applicable legal provisions.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

4. Failure to dispatch the materials in the time as per the delivery mentioned in our Purchase Order (PO) would make the supplier liable to an un-conditional LD at the rate of 0.5% of the undelivered order value per week of the delay or part thereof subject to a maximum of 10% of the undelivered order value.
5. Indigenous: In case of Ex-works delivery terms, the document date (Invoice/Challan date) in Goods Receipt (GR) document shall be reckoned for LD deduction. In case of FOR Delivery terms, Vehicle entry date at BHEL Units / Sites / other delivery destinations as mentioned on Lorry Receipt (LR) copy shall be taken as basis for LD calculations.
6. Import: For CFR terms, BL date will be considered for LD calculation.

BHEL reserves the right to receive or not receive the material after the due date of PO. Applicable GST shall also be recovered from suppliers/contractors on LD amount. For this Debit note will be issued by BHEL indicating the respective supply invoice number.

### 19. Liability Under Reverse Charge (RCM)

Any GST liability arising on BHEL under Reverse Charge (RCM) before actual receipt of goods and/ or Invoice thereof would be subject to recovery of Interest leviable for the period between the date of such liability and actual date of eligibility of ITC based on receipt of goods, receipt of Invoices and other conditions specified in GST Law as applicable.

### 20. Preference to Make in India

This procurement shall be governed by notification no. P-45021/2/2017-PP (BE-II) dated 16.09.2020 of Government of India issued by DPIIT and subsequent circulars issued afterwards. Accordingly, the minimum local content, the margin of purchase preference and the procedure for purchase preference to make in India shall be adhered.

### 21. Resolution of Disputes

The Parties agree that if at any time (whether before, during or after the arbitral or judicial proceedings), any Disputes (which term shall mean and include any dispute, difference, question or disagreement arising in connection with construction, meaning, operation, effect, interpretation or breach of the contract/tender which the Parties are unable to settle mutually), arise inter-se the Parties, the same may, be referred by either party to Conciliation to be conducted through Independent Experts Committee to be appointed by competent authority of BHEL from the BHEL Panel of Conciliators.

Notes:

1. No serving or a retired employee of BHEL/Administrative Ministry of BHEL shall be included in the BHEL Panel of Conciliators.
2. Any other person(s) can be appointed as Conciliator(s) who is/are mutually agreeable to both the parties from outside the BHEL Panel of Conciliators.

The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided in Annexure-X to this GCC.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

The Annexure-X together with its appendices will be treated as if the same is part and parcel hereof and shall be as effectual as if set out herein in this GCC.

Except as provided elsewhere in this Contract, in case amicable settlement is not reached between the parties, in respect of any dispute or difference; arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the Parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, then, either Party may, by a notice in writing to other Party, refer such dispute or difference to sole arbitration of an arbitrator appointed as per the Arbitration and Conciliation Act, 1996 (India) or statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force.

The Arbitrator shall pass a reasoned award and the award of the Arbitrator shall be final and binding upon the parties.

This contract shall be governed, construed and interpreted in accordance with the laws of India.

Subject as aforesaid, the provisions of Arbitration & Conciliation Act 1996 (India) or statutory modification or re-enactment thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceeding under this clause.

The seat of arbitration shall be Tarn Taran, Punjab, India.

The cost of arbitration shall be borne as per the award of the Arbitrator.

Subject to arbitration in terms of clause above, the Courts at Tarn Taran, Punjab, India shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.

Notwithstanding the existence or any dispute or difference and/or reference for the arbitration, the vendor/contractor shall proceed with and continue without hindrance the performance of its obligation under this Contract with due diligence and expedition in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

**In Case of Contract with Public Sector Enterprise (PSE) or a Government Department, the following shall be applicable:**

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs)/Port Trusts inter se and also between CPSEs and Government Departments/Organizations (Excluding disputes concerning Railways, Income Tax, Customs & Excise Departments, such dispute or difference shall be taken up by either party for its resolution through AMRCD as mentioned in DPE OM No.05/003/2019-FTS-10937 dated 14<sup>th</sup> December, 2022 and the decision of AMRCD on the said dispute will be binding on both the parties.”





## General Conditions of Contract (GCC) of MM Tenders

### BHARAT HEAVY ELECTRICALS LIMITED

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

Set off : BHEL shall have the right to recover any money which in the sole opinion of BHEL is due from the supplier from any money due to the supplier under this Contract or any other contract or from the Security Deposit/BG furnished by the supplier under this Contract or any other contract.

## 22. Access to Manufacturing Premises

While Purchase Orders placed on the vendor are under execution, authorized representatives of BHEL shall be allowed free access to the manufacturing facilities for the purpose of inspection or monitoring the progress of purchase orders. This access will also be extended to representatives of BHEL's customers accompanying the authorized representative/s of BHEL (which shall be intimated in advance), if our contractual requirements with our customers call for the same.

## 23. Force Majeure

1. Notwithstanding the provisions contained in other clauses, the supplier shall not be liable for imposition of any such sanction so long the delay and/or failure of the supplier in fulfilling its obligations under the contract is the result of an event of Force Majeure. For purposes of this clause, Force Majeure means an event beyond the control of the supplier and not involving the supplier's fault or negligence and which is not foreseeable and not brought about at the instance of the party claiming to be affected by such event and which has caused the non – performance or delay in performance. Such events may include, but are not restricted to, wars or revolutions, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics, quarantine restrictions, strikes excluding by its employees, lockouts excluding by its management, freight embargoes and Acts of GOD.
2. If a Force Majeure situation arises, the supplier shall promptly notify the Purchaser/Consignee in writing of such conditions and the cause thereof within twenty-one days of occurrence of such event. Unless otherwise directed by the Purchaser/Consignee in writing, the supplier shall continue to perform its obligations under the contract as far as reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
3. If the performance in whole or in part or any obligation under this contract is prevented or delayed by any reason of Force Majeure for a period exceeding sixty days, either party may at its option terminate the contract without any financial repercussion on either side.
4. In case due to a Force Majeure event the Purchaser/Consignee is unable to fulfil its contractual commitment and responsibility, the Purchaser/Consignee will notify the supplier accordingly and subsequent actions taken on similar lines described in above sub-paragraphs.

## 24. Non-Disclosure Agreement

All Drawing and technical documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

***BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.***

### **25. Preventive Checks to Eliminate Suspected Cartel Formation**

The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). 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, suitable action shall be taken by BHEL as per extant policies/ guidelines.

### **26. Fraud Prevention Policy**

The Bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <https://www.bhel.com/> and shall immediately bring to the notice of BHEL management about any fraud or suspected fraud as soon as it comes to their notice.

### **27. Suspension of Business Dealings with Suppliers / Contractors**

The offers of the bidders who are under suspension and also the offers of the bidders, who engage the services of the firms debarred across BHEL, shall be rejected. The list of firms debarred across BHEL is available on BHEL web site <https://www.bhel.com/>.

## **INTEGRITY COMMITMENT, PERFORMANCE OF THE CONTRACT AND PUNITIVE ACTION THEREOF:**

### **27.1. Commitment by BHEL:**

BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all Bidder(s) in a transparent and fair manner, and with equity.

### **27.2. Commitment by Bidder/ Supplier/ Contractor:**

27.2.1. The bidder/ supplier/ contractor commits to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India.

27.2.2. The bidder/ supplier/ contractor will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to relevant guidelines issued from time to time by Govt. of India/ BHEL.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

27.2.3. The bidder/ supplier/ contractor will perform/ execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/ money/ reputation, to BHEL.

If any bidder/ supplier/ contractor during pre-tendering/ tendering/ post tendering/ award/ execution/ post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India, then, action may be taken against such bidder/ supplier/ contractor as per extant guidelines of the company available on <https://www.bhel.com/> and/or under applicable legal provisions.

### 28. Discrepancy in Words and Figures

1. If, in the price structure quoted for the required goods/ services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity}, the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.
2. If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
3. If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above.
4. If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
5. Bids should be free from correction, overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else shall be liable for rejection.
6. All overwriting/cutting, etc will be numbered by bid opening officials and announced during bid opening.

### 29. LOI (Letter of Intent)

BHEL may issue LOI prior to the PO for any reason whatsoever. The LOI in such cases is to be treated as PO for all practical purposes and all the Terms & Conditions of the tender shall be applicable from the date of issue of LOI.

### 30. Sub-Contract

The purchase order or any part thereof shall not be sub-contracted, assigned or otherwise transferred without previously obtaining the BHEL's consent in writing.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### 31. Clarifications

The correspondence exchanged against the tender from both tenderer and BHEL through email/e-procurement are considered as valid document legally though it is not signed. It is treated as valid confirmations made on behalf of the respective company and very much comes under the legal ambit of the business transaction and hence it is binding on both the parties to the business. Any transaction pertaining to the tender from both the parties of business done round the clock irrespective of the office or business hours of the companies, are valid legally and binding on both the parties. This applies to the extent only in such cases where deadline time for transaction is not specifically declared by either or both the parties to the business.

### 32. Restrictions Under Rule 144(XI) of The General Financial Rules (GFR), 2017

Restrictions on procurement from a bidder of a country which shares a land border with India

- I. a) Any bidder from a country which shares a land border with India will be eligible to bid in this tender, whether of goods or services (including consultancy services and non-consultancy services), only if the bidder is registered with the Competent Authority.  
b) Further, any bidder (including an Indian bidder) who has a Specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India will be eligible to bid in any procurement whether of goods or services (including consultancy services and non-consultancy services) only if the bidder is registered with the Competent Authority. *This clause shall be applicable only in the tenders which attract restrictions due to specified ToT.*
- II. "Bidder" (Seller / Service Provider) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.
- III. "Bidder (or entity) from a country which shares a land border with India" for the purpose of the Order means:
  - a) An entity incorporated, established, or registered in such a country; or
  - b) A subsidiary of an entity incorporated, established, or registered in such a country; or
  - c) An entity substantially controlled through entities incorporated, established, or registered in such a country; or
  - d) An entity whose beneficial owner is situated in such a country; or
  - e) An Indian (or other) agent of such an entity; or
  - f) A natural person who is a citizen of such a country; or
  - g) A consortium or joint venture where any member of the consortium or joint venture falls under any of the above
- IV. The beneficial owner for the purpose of (iv) above will be as under
  1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.  
Explanation—

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

- a) "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent. of shares or capital or profits of the company;
  - b) "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements;
  2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
  3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
  4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
  5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.
- V. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.
- VI. The registration shall be valid at the time of submission of bid and at the time of acceptance of bid.
- VII. If the bidder was validly registered at the time of acceptance / placement of order, registration shall not be a relevant consideration during contract execution.
- VIII. "Transfer of Technology" means dissemination and transfer of all forms of commercially usable knowledge such as transfer of know-how, skills, technical expertise, designs, processes and procedures, trade secrets, which enables the acquirer of such technology to perform activities using the transferred technology independently.

Any false declaration and non-compliance of the above would be a ground for debarment and further legal action in accordance with law.

### **Bidder has to submit a certificate certifying following along with offer:**

"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be Attached]."

### **33. General**

1. BHEL will not be bound by any power of attorney granted by the vendors or by changes in the composition of the firm made subsequent to the execution of the contract. They may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the vendor concerned.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

2. BHEL reserves the right to extend the due date of opening, which shall be informed. Validity of offer shall be deemed to be revised accordingly.
3. BHEL reserves the right to accept or reject any part or whole of the tender of a bidder by assigning a valid reason thereof. BHEL reserves the right to cancel the tender without assigning any reason thereof and without any obligation before any commitment.
4. Acceptance of all terms and conditions, in the form of signed copy of T&C or confirmation separately written, shall be submitted along with quotation. If nothing is mentioned, it shall be concluded that these terms and conditions are acceptable.
5. BHEL may increase/decrease item/s based on BHEL requirement before price bid opening. Suitable price implication may be asked from suppliers.
6. BHEL may drop item/items from tender at any stage of tender before placing PO. BHEL may also delete PO with consent with supplier within delivery date of PO.
7. After releasing PO, it is assumed that supplier has accepted PO if we do not receive acknowledgement from supplier within 5 days of date of PO.
8. In case of unscheduled holiday on opening day of tender, the next working day will be treated as scheduled prescribed day of opening of tender.
9. On the due date of tender opening, only technical bids will be opened. The opened technical bids will be evaluated by us and clarifications required, if any, will be called for from the bidders on technical and commercial points. If no reply is received from the vendor for the clarification raised by BHEL within the final cut-off date, those vendors offer will be processed with the documents available / submitted against this tender. Offers not meeting the required specification and technical condition will be summarily rejected. The price bids of technically suitable bidders will be opened on a later date with prior intimation to techno-commercially suitable bidders.
10. Ranking L-1, L-2 etc. shall be done for individual item for the techno-commercially acceptable offers on landed cost to BHEL, IVP Goindwal basis and BHEL reserves the right to place order for individual items with different vendors.
11. BHEL reserves the right to negotiate with L1 vendor or re-float the tender for items where, L1 price is not the lowest acceptable price; BHEL reserves the right to increase or decrease the tender quantity.
12. If supplier is mentioning delivery destination within state/ outside state depending upon his location of factory, Free on Road etc. these are assumed as on FOR Goindwal. If supplier is wishing to give delivery on Ex works basis, then he has to clearly mention about it.
13. The bidder has to keep track of any changes by viewing the addendum(s) / Corrigendum(s) issued by the Purchaser on time-to- time basis in the E-Procurement platform. The Company calling for tenders shall not be responsible for any claims/problems arising out of this.
14. Unregistered suppliers, who are techno-commercially qualified against the open tender, are requested to register with BHEL as permanent supplier by submitting the Supplier Registration Form (SRF) in online supplier registration portal (<https://supplier.bhel.in/>).
15. The General Conditions of Contract and the Special Conditions in each enquiry and the resulting purchase order constitute the entire contract between the parties. In case of any discrepancy between the provisions of General Conditions of Contract and Special Conditions of the Tender, the provisions in Special Conditions of the Tender shall prevail and interpretation of BHEL of such condition/clause will be final and binding on both the parties.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### 34. Treatment in Case of Dealer Acceptance

Whether dealers/agents in tender are acceptable that will be mentioned in tender special terms. In case of acceptance of dealers/agents in tender, below criteria is applicable.

#### For manufacturers

In case manufacturer insists on engaging a dealer / agent / reseller, such dealer / agent / reseller is not allowed to represent more than one manufacturer for same item. In case more than one dealers/agent of a company quote for same item, then bid of both dealers/agents shall be considered. In case OEM has authorized a particular dealer specific to any tender, then bid of any other dealer of same OEM shall be rejected.

#### For dealer / agent / reseller:

In case of dealers / agents / reseller, valid authorized dealer certificate is required from original manufacturer (OEM). In case bids are received from dealer / agent and manufacturer both, bid submitted by dealer will be rejected. A dealer representing more than one manufacturer for same item will be rejected. Kindly quote for single make only. Dealer has to provide contact details (like name, e-mail id, telephone no & address) of OEM office issuing "Dealer Authorization Certificate".

### 35. Enclosure

- Annexure-1: Declaration regarding Insolvency/ Liquidation/ Bankruptcy Proceedings
- Annexure-2: Declaration reg. minimum local content in line with revised public procurement
- Annexure-3: Proforma of Bank Guarantee for Performance Security.
- Annexure-4: List of Consortium Bank.
- Annexure-X: Brief Procedure for Conduct of Conciliation Proceedings
- Appendix-I of Annexure-X
- Appendix-II of Annexure-X
- Appendix-III of Annexure-X





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Annexure-1

(To be Typed & submitted in the Letter Head of the Company/Firm of Bidder)

To  
Bharat Heavy Electrical Limited  
Industrial Valves Plant  
Goindwal  
Punjab-143422

Dear Sir,

Subject: DECLARATION REGARDING INSOLVENCY/ LIQUIDATION/  
BANKRUPTCY PROCEEDINGS

Ref: 1) Tender Enquiry No.

I/We, \_\_\_\_\_ declare that, I/We am/are not  
admitted under insolvency resolution process or liquidation under Insolvency and Bankruptcy  
Code, 2016, as amended from time to time or under any other law as on date, by NCLT or  
any adjudicating authority/authorities.

Yours faithfully,

(Signature, date & seal of authorized representative of the bidder)

Date:

Place:





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Annexure-2

DECLARATION REGARDING MINIMUM LOCAL CONTENT IN LINE WITH  
REVISED PUBLIC PROCUREMENT (PREFERENCE TO MAKE IN INDIA), ORDER  
2017 DATED 04TH JUNE, 2020 AND SUBSEQUENT ORDER(S)  
(To be Typed & submitted in the Letter Head of the Company/Firm of Bidder)

To  
Bharat Heavy Electrical Limited  
Industrial Valves Plant  
Goindwal  
Punjab-143422

Dear Sir,

Sub: Declaration reg. minimum local content in line with Public Procurement (Preference to Make in India), Order 2017-Revision, dated 04<sup>th</sup> June, 2020 and subsequent order(s).

Ref: 1) Tender Enquiry No.

We hereby certify that the items/works/services offered by M/s \_\_\_\_\_  
(Name of of bidder) has a local content of \_\_\_\_% and this meets the local content requirement  
for **Class-1 Local supplier/ Class-2 Local supplier** \*\* as defined in Public  
Procurement (Preference to Make in India), Order 2017-Revision dated 04.06.2020 issued  
by DPIIT and subsequent order(s).

The details of the location(s) at which the local value addition is made are as follows:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
- ...

Thanking you,  
Yours faithfully,

(Signature, Date & seal of Authorized Signatory of the Bidder)

\*\* - Strike out whichever is not applicable.





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

Note:

1. Bidders to note that above format, duly filled & signed by authorized signatory, shall be submitted along with the techno-commercial offer.
2. In case the bidders quoted value is in excess of Rs 10 Crores , the authorized signatory of this declaration shall necessarily be the statutory auditor or cost auditor of the company (in the case of companies) or a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies).
3. In the event of false declaration, actions as per the above order and as per BHEL Guidelines shall be initiated against the bidder





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Annexure-3

#### BANK GUARANTEE FOR PERFORMANCE SECURITY (On non-Judicial paper of appropriate value)

Bank Guarantee No.  
Date.

To  
Bharat Heavy Electrical Limited  
Industrial Valves Plant  
Goindwal  
Punjab-143422

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office BHEL House, Siri Fort New Delhi through its Unit at BHEL, IVP, Goindwal having awarded to.....  
(Name of the Vendor / Contractor / Supplier) with its registered office at..... hereinafter referred to as the 'Vendor / Contractor / Supplier', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No..... valued at Rs. .... (Rupees .....)  
and the Vendor / Contractor / Supplier having agreed to provide a contract performance bank guarantee, equivalent to ... % (... percent) of the said value of the contract to the employer for the faithful performance of the Contract.

We, ....., (here in after referred to as the Bank), having registered/Head office at .....and inter alia a branch at .....being the Guarantor under this Guarantee, hereby irrevocably and unconditionally undertake to forthwith and Immediate pay to the Employer any sum or sums upto a maximum amount of Rs .....  
(Rupees in words .....) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs.....

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We the.....Bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/ satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till all the dues of the employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

We.....Bank further agree that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor /Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor/ Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor /Contractor / Supplier 's liabilities.

This Performance Bank Guarantee shall remain in force upto..... and including and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

Unless a demand or claim under this guarantee is made on us in writing on or before the.....we shall be discharged from all liabilities under this guarantee thereafter.

This Bank Guarantee shall be governed, construed and interpreted in accordance with the laws of India.

Courts at ..... shall alone have exclusive jurisdiction over any matter arising out of or in connection with this bank guarantee.

We ..... Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this guarantee shall not exceed-----
- b) This Guarantee shall be valid up to -----
- c) Unless the Bank is served a written claim or demand on or before..... all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, ..... Bank have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of  
(Name of the Bank)

Date:

Place of Issue:

Notes:

1. The BG should be on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp

Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/estamp paper shall be purchased in the name of Contractor/sub-contractor /vendor/ Bank issuing the guarantee.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Annexure-4

#### LIST OF CONSORTIUM BANKS

| Sl. No. | NAME OF THE BANK                              |
|---------|-----------------------------------------------|
| 1       | State Bank of India                           |
| 2       | Canara Bank                                   |
| 3       | IDBI Bank Limited                             |
| 4       | ICICI Bank Limited                            |
| 5       | HDFC Bank Limited                             |
| 6       | Axis Bank                                     |
| 7       | IndusInd Bank Limited                         |
| 8       | Bank of Baroda                                |
| 9       | Exim Bank                                     |
| 10      | Indian Bank                                   |
| 11      | Punjab National Bank                          |
| 12      | Union Bank of India                           |
| 13      | Yes Bank Limited                              |
| 14      | RBL Bank Ltd.                                 |
| 15      | Standard Chartered Bank                       |
| 16      | Indian Overseas Bank                          |
| 17      | Kotak Mahindra Bank Limited                   |
| 18      | Federal Bank Limited                          |
| 19      | Hongkong and Shanghai Banking Corporation Ltd |

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Annexure-X

#### **BRIEF PROCEDURE FOR CONDUCT OF CONCILIATION PROCEEDINGS**

1. The proceedings of Conciliation shall broadly be governed by Part-III of the Arbitration and Conciliation Act 1996 or any statutory modification thereof and as provided herein:
2. The party desirous of resorting to Conciliation shall send an invitation/notice in writing to the other party to conciliate specifying all points of Disputes with details of the amount claimed. The party concerned shall not raise any new issue thereafter. Parties shall also not claim any interest on claims/counter-claims from the date of notice invoking Conciliation till the conclusion of the Conciliation proceedings.
3. The party receiving the invitation/notice for Conciliation shall within 30 days of receipt of the notice of Conciliation intimate its consent for Conciliation along with its counter-claims, if any.
4. The Conciliation in a matter involving claim or counter-claim (whichever is higher) up to Rs 5 crores shall be carried out by sole Conciliator nominated by BHEL while in a matter involving claim or counter-claim (whichever is higher) of more than Rs 5 crores Conciliation shall be carried out by 3 Conciliators nominated by BHEL.
5. The Parties shall be represented by only their duly authorized in-house executives/officers and neither Party shall be represented by a Lawyer.
6. The first meeting of the IEC shall be convened by the IEC by sending appropriate communication/notice to both the parties as soon as possible but not later than 30 days from the date of his/their appointment. The hearings in the Conciliation proceeding shall ordinarily be concluded within two (2) months and, in exceptional cases where parties have expressed willingness to settle the matter or there exists possibility of settlement in the matter, the proceedings may be extended by the IEC by a maximum of further 2 months with the consent of the Parties subject to cogent reasons being recorded in writing.
7. The IEC shall thereafter formulate recommendations for settlement of the Disputes supported by reasons at the earliest but in any case, within 15 days from the date of conclusion of the last hearing. The recommendations so formulated along with the reasons shall be furnished by the IEC to both the Parties at the earliest but in any case, within 1 month from the date of conclusion of the last hearing.
8. Response/modifications/suggestions of the Parties on the recommendations of the IEC are to be submitted to the IEC within time limit stipulated by the IEC but not more than 15 days from the date of receipt of the recommendations from the IEC.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

9. In the event, upon consideration, further review of the recommendations is considered necessary, whether by BHEL or by the other Party, then, the matter can be remitted back to the IEC with request to reconsider the same in light of the issues projected by either/both the Parties and to submit its recommendations thereon within the following 15 days from the date of remitting of the case by either of the Parties.
10. Upon the recommendations by the Parties, with or without modifications, as considered necessary, the IEC shall be called upon to draw up the Draft Settlement Agreement in terms of the recommendations.
11. When a consensus can be arrived at between the parties only in regard to any one or some of the issues referred for Conciliation the draft Settlement Agreement shall be accordingly formulated in regard to the said Issue(s), and the said Settlement Agreement, if signed, by the parties, shall be valid only for the said issues. As regards the balance issues not settled, the parties may seek to resolve them further as per terms and conditions provided in the contract.
12. In case no settlement can be reached between the parties, the IEC shall by a written declaration, pronounce that the Conciliation between the parties has failed and is accordingly terminated.
13. Unless the Conciliation proceedings are terminated in terms of para 22 (b), (c) & (d) herein below, the IEC shall forward his/its recommendations as to possible terms of settlement within one (1) month from the date of last hearing. The date of first hearing of Conciliation shall be the starting date for calculating the period of 2 months.
14. In case of 3 members IEC, 2 members of IEC present will constitute a valid quorum for IEC and meeting can take place to proceed in the matter after seeking consent from the member who is not available. If necessary, videoconferencing may be arranged for facilitating participation of the members. However, the IEC recommendations will be signed by all members. Where there is more than one (1) Conciliator, as a general rule they shall act jointly. In the event of differences between the Members of IEC, the decision/recommendations of the majority of the Members of IEC shall prevail and be construed as the recommendation of the IEC.
15. The Draft Settlement Agreement prepared by the IEC in terms of the consensus arrived at during the Conciliation proceedings between the Parties shall be given by the IEC to both the parties for putting up for approval of their respective Competent Authority.
16. Before submitting the draft settlement agreement to BHEL's Competent Authority viz. the Board Level Committee on Alternative Dispute Resolution (BLCADR) for approval, concurrence of the other party's Competent Authority to the draft settlement agreement shall be obtained by the other party and informed to BHEL within 15 days of receipt of the final draft settlement agreement by it. Upon approval by the Competent Authority, the Settlement Agreement would thereafter be signed by the authorized representatives of both the Parties and authenticated by the members of the IEC.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

17. In case the Draft Settlement Agreement is rejected by the Competent Authority of BHEL or the other Party, the Conciliation proceedings would stand terminated.
18. A Settlement Agreement shall contain a statement to the effect that each of the person(s) signing thereto (i) is fully authorized by the respective Party(ies) he/she represents, (ii) has fully understood the contents of the same and (iii) is signing on the same out of complete freewill and consent, without any pressure, undue influence.
19. The Settlement Agreement shall thereafter have the same legal status and effect as an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal passed under section 30 of the Arbitration and Conciliation Act, 1996.
20. Acceptance of the Draft Settlement Agreement/recommendations of the Conciliator and/or signing of the Settlement Agreement by BHEL shall however, be subject to withdrawal/closure of any arbitral and/or judicial proceedings initiated by the concerned Party in regard to such settled issues.
21. Unless otherwise provided in the agreement, contract or the Memorandum of Understanding, as the case may be, in the event of likelihood of prolonged absence of the Conciliator or any member of IEC, for any reason/incapacity, the Competent Authority/Head of Unit/Division/Region/Business Group of BHEL may substitute the Conciliator or such member at any stage of the proceedings. Upon appointment of the substitute Conciliator(s), such reconstituted IEC may, with the consent of the Parties, proceed with further Conciliation into the matter either de-novo or from the stage already reached by the previous IEC before the substitution.
22. The proceedings of Conciliation under this Scheme may be terminated as follows:
- On the date of signing of the Settlement agreement by the Parties; or,
  - By a written declaration of the IEC, after consultation with the parties, to the effect that further efforts at conciliation are no longer justified, on the date of the declaration; or,
  - By a written declaration of the Parties addressed to the IEC to the effect that the Conciliation proceedings are terminated, on the date of the declaration; or,
  - By a written declaration of a Party to the other Party and the IEC, if appointed, to the effect that the Conciliation proceedings are terminated, on the date of the declaration.
  - On rejection of the Draft Settlement Agreement by the Competent Authority of BHEL or the other Party.





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

23. The Conciliator(s) shall be entitled to following fees and facilities:

| Sr. No. | Particulars                                                                                                                                       | Amount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | Sitting fees                                                                                                                                      | Each Member shall be paid a Lump Sum fee of Rs 75,000/- for the whole case payable in terms of paragraph No. 27 herein below.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 2       | Towards drafting of settlement agreement                                                                                                          | <p>In cases involving claim and/or counter-claim of up to Rs 5crores.<br/>Rs 50,000/- (Sole Conciliator)</p> <p>In cases involving claim and/or counter-claim of exceeding Rs 5 crores but less than Rs 10 crores.<br/>Rs. 75,000 (per Conciliator)</p> <p>In cases involving claim and/or counter-claim of more than Rs 10 crores.<br/>Rs 1,00,000/- (per Conciliator)</p> <p>Note: The aforesaid fees for the drafting of the Settlement Agreement shall be paid on Signing of the Settlement Agreement after approval of the Competent Authority or Rejection of the proposed Settlement Agreement by the Competent Authority of BHEL.</p> |
| 3       | Secretarial expenses                                                                                                                              | <p>Rs 10,000/- (one time) for the whole case for Conciliation by a Sole Member IEC.</p> <p>Where Conciliation is by multi member Conciliators –Rs 30,000/- (one time)- to be paid to the IEC</p>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 4       | Travel and transportation and stay at outstation                                                                                                  | As per entitlement of the equivalent officer (pay scale wise) in BHEL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|         | <p>i Retired Senior Officials of other Public Sector Undertakings (pay scale wise equivalent to or more than E-8 level of BHEL)</p> <p>Others</p> | As per the extant entitlement of whole time Functional Directors in BHEL.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

|   |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5 | Venue for meeting | Unless otherwise agreed in the agreement, contract or the Memorandum of Understanding, as the case may be, the venue/seat of proceedings shall be the location of the concerned Unit / Division / Region / Business Group of BHEL. Without prejudice to the seat/venue of the Conciliation being at the location of concerned BHEL Unit / Division / Region / Business Group, the IEC after consulting the Parties may decide to hold the proceedings at any other place/venue to facilitate the proceedings. Unless, Parties agree to conduct Conciliation at BHEL premises, the venue is to be arranged by either Party alternately. |
|---|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

24. The parties will bear their own costs including cost of presenting their cases/evidence/witness(es)/expert(s) on their behalf. The parties agree to rely upon documentary evidence in support of their claims and not to bring any oral evidence in IEC proceedings.

25. If any witness(es) or expert(s) is/are, with the consent of the parties, called upon to appear at the instance of the IEC in connection with the matter, then, the costs towards such witness(es)/expert(s) shall be determined by the IEC with the consent of the Parties and the cost so determined shall be borne equally by the Parties.

26. The other expenditures/costs in connection with the Conciliation proceedings as well as the IEC's fees and expenses shall be shared by the Parties equally.

27. Out of the lump sum fees of Rs 75,000/- for Sitting Fees, 50% shall be payable after the first meeting of the IEC and the remaining 50% of the Sitting Fees shall be payable only after termination of the conciliation proceedings in terms of para 22 hereinabove.

28. The travelling, transportation and stay at outstation shall be arranged by concerned Unit as per entitlements as per Serial No. 3 of the Table at para 23 above, and in case such arrangements are not made by the BHEL Unit, the same shall be reimbursed to the IEC on actuals limited to their entitlement as per Serial No. 4 of the Table at Para 23 above against supporting documents. The IEC Member(s) shall submit necessary invoice for claiming the fees/reimbursements.

29. The Parties shall keep confidential all matters relating to the conciliation proceedings. Confidentiality shall extend also to the settlement agreement, except where its disclosure is necessary for purposes of its implementation and enforcement or as required by or under a law or as per directions of a Court/Governmental authority/ regulatory body, as the case may be.

Signature Not Verified

AMAN SHARMA





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

30. The Parties shall not rely upon or introduce as evidence in any further arbitral or judicial proceedings, whether or not such proceedings relate to the Disputes that is the subject of the Conciliation proceedings:
- Views expressed or suggestions made by the other party in respect of a possible settlement of the Disputes;
  - admissions made by the other party in the course of the Conciliator proceedings;
  - proposals made by the Conciliator;
  - The fact that the other Party had indicated his willingness to accept a proposal for settlement made by the Conciliator.
31. The Parties shall not present the Conciliator(s) as witness in any Alternative Dispute Resolution or Judicial proceedings in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
32. None of the Conciliators shall act as an arbitrator or as a representative or counsel of a Party in any arbitral or judicial proceeding in respect of a Disputes that is/was the subject of that particular Conciliation proceeding.
33. The Parties shall not initiate, during the Conciliation proceedings, any arbitral or judicial proceedings in respect of a Disputes that is the subject matter of the Conciliation proceedings except that a Party may initiate arbitral or judicial proceedings where, in his opinion, such proceedings are necessary for preserving his rights including for preventing expiry of period of limitation. Unless terminated as per the provisions of this Scheme, the Conciliation proceedings shall continue notwithstanding the commencement of the arbitral or judicial proceedings and the arbitral or judicial proceedings shall be primarily for the purpose of preserving rights including preventing expiry of period of limitation.
34. The official language of Conciliation proceedings under this Scheme shall be English unless the Parties agree to some other language.





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Appendix-I of Annexure-X

#### **FORMAT FOR SEEKING CONSENT FOR REFERRING THE DISPUTES TO CONCILIATION THROUGH IEC**

To,

M/s. (Stakeholder's name)

**Sub: Resolution of the Disputes through conciliation by Independent Expert Committee (IEC).**

Ref: Contract No/MoU/Agreement/LOI/LOA& date \_\_\_\_\_.

Sir,

With reference to above referred Contract/MoU/Agreement/LOI/LOA, you have raised certain Disputes/claims. Vide your letter dated\_\_\_\_ you have requested BHEL to refer the Disputes/claims to IEC for Conciliation.

We are enclosing herewith Format (3) for giving consent and the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. You are requested to give your unconditional consent to the said terms and conditions of the Scheme by returning the same duly sealed and signed on each page. On receipt of your consent, matter will be put to the Competent Authority for consideration and decision.

Please note that BHEL has also certain claims against you (if applicable). BHEL reserves its right to agree or not to agree conciliation of the said disputes through BHEL and this letter is being issued without prejudice to BHEL's rights and contentions available under the contract and law.

Yours faithfully,

**Representative of BHEL**





## General Conditions of Contract (GCC) of MM Tenders

**BHARAT HEAVY ELECTRICALS LIMITED**

Industrial Valve Plant: 433, Industrial Complex,  
Goindwal Sahib, Dist. Tarn Taran,  
Punjab-143422 (INDIA)

### Appendix-II of Annexure-X

**FORMAT FOR GIVING CONSENT BY  
CONTRACTOR/VENDOR/CUSTOMER/COLLABORATOR/CONSORTI  
UM PARTNERSFOR REFERRING THE DISPUTES TO CONCILIATION  
THROUGH IEC**

To,

BHEL

.....

**Sub: Resolution of Disputes through Conciliation by Independent Expert Committee (IEC).**

Ref: Contract/MoU/Agreement/LOI/LOA No

& date\_\_\_\_\_

With reference to above referred contract, our following bills/invoices/claims submitted to BHEL are still unpaid giving rise to Disputes:

| SL.<br>no. | Claim<br>Description | Bill<br>submitted to<br>BHEL<br>(no.<br>and date) | Amount of the<br>bill/claim | Amount<br>received from<br>BHEL | Outstanding<br>Amount |
|------------|----------------------|---------------------------------------------------|-----------------------------|---------------------------------|-----------------------|
|            |                      |                                                   |                             |                                 |                       |
|            |                      |                                                   |                             |                                 |                       |
|            |                      |                                                   |                             |                                 |                       |

Accordingly, we request you to kindly refer the Disputes in respect of above claims to IEC for Conciliation.

We hereby agree and give our unconditional consent to the terms and conditions of BHEL Conciliation Scheme, 2018 governing conciliation through IEC. We have signed the same on each page and enclosed it for your consideration.

Yours faithfully,

**(Signature with stamp)**

**Authorized Representative of Contractor  
Name, with designation Date**



**Appendix-III of Annexure-X**

**STATEMENT OF CLAIMS/COUNTER CLAIMS TO BE SUBMITTED TO THE  
IEC BY BOTH THE PARTIES**

1. Chronology of the Disputes
2. Brief of the Contract/MoU/Agreement/LOI/LOA
3. Brief history of the Disputes:
4. Issues:
5. Details of Claim(s)/Counter Claim(s):

| SI. No. | Description of claim(s)/Counter Claim | Amount (in INR) Or currency applicable in the contract | Relevant contract clause |
|---------|---------------------------------------|--------------------------------------------------------|--------------------------|
|         |                                       |                                                        |                          |
|         |                                       |                                                        |                          |
|         |                                       |                                                        |                          |

6. Basis/Ground of claim(s)/counter claim(s) (along with relevant clause of contract)

**Note**– The Statement of Claims/Counter Claims may ideally be restricted to maximum limit of 20 pages. Relevant documents may be compiled and submitted along with the statement of Claims/Counter Claims. The statement of Claims/Counter Claims is to be submitted to all IEC members and to the other party by post as well as by email.



**Tender Enquiry No.** 2627-052E Dated 10.10.2026 **Due date** 21.10.2026

**Tender Description:** Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

**(Annexure - P)**

| Pre-Qualification Criteria – As per Tender Special Term S2.c |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
|--------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| S.N.                                                         | Required executed order value as per NIT (Net of Taxes) (INR) | Executed order value (Net of Taxes) as per bidder (INR) | Purchase order no. and date [PO date should be on or after 01.10.2023 till tender Part-1 bid opening date] | Purchase Order issued by (Client name) M/s | Item description as per PO | Documents submitted against completion /execution proof of the afore mentioned PO (Invoice / Consignee Receipt Note / Completion Certificate) [Document date should be on or after 01.10.2023 till tender Part-1 bid opening date] | Full address of the client and contact person (Name & Details i.e. Mail ID, Mobile No. etc) |
| 1                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
| 2                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
| 3                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
| 4                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
| 5                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
| 6                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |
| 7                                                            |                                                               |                                                         |                                                                                                            |                                            |                            |                                                                                                                                                                                                                                    |                                                                                             |

More lines can be added, if required.

Notes :-

1. It is mandatory to submit atleast one PO copy of HSFG Fit Bolts or of Similar item of any value.
2. Kindly attach all the above stated documents in the Quotation.
3. All proof of execution like Invoice / Consignee Receipt Note / Completion Certificate must include the Purchase Order reference number, otherwise that PO will not be considered for the fulfilment of this tender term.

**INTEGRITY PACT**

**Between**

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

**and**

\_\_\_\_\_, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

**Preamble**

The Principal intends to award, under laid-down organizational procedures, contract/s for \_\_\_\_\_ Tender No. 2627-052E Dt. 10.10.2026 Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers) \_\_\_\_\_ (hereinafter referred to as "Contract"). The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint panel of Independent External Monitor(s) (IEMs), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

**Section 1- Commitments of the Principal**

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles: -
  - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
  - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Bharatiya Nyaya Sanhita (BNS) 2023 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

**Section 2 - Commitments of the Bidder(s)/ Contractor(s)**

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commits himself to observe the following principles during participation in the tender process and during the contract execution.

- 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. 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.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Bharatiya Nyaya Sanhita (BNS) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.
- 2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and shall await their decision in the matter.

### Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process, terminate the contract, if already awarded, exclude from future business dealings and/ or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

### Section 4 - Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder (s) from the tender process before award / order acceptance according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- 4.2 If the Principal is entitled to terminate the Contract according to Section 3, or terminates the Contract in application of Section 3 above, the Bidder(s)/ Contractor (s) transgression through a violation of Section 2 above shall be construed breach of contract and the Principal shall be entitled to demand and recover from the Contractor an amount equal to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher, as damages, in addition to and without prejudice to its right to demand and recover compensation for any other loss or damages specified elsewhere in the contract.

### Section 5 - Previous Transgression

Two handwritten signatures in blue ink are present at the bottom left of the page. The first signature is a cursive-style name, and the second is a more stylized signature, possibly reading 'Raj Kumar'.

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 (three) years (to be reckoned from date of bid submission) with any other company in any country conforming to the anti-corruption approach in India that could justify his exclusion from the tender process. The date of such transgression, for the purpose of disclosure by the bidders in this regard, would be the date on which cognizance of the said transgression was taken by the competent authority. The transgression(s), for which cognizance was taken even before the said period of three years, but are pending conclusion, shall also be reported by the bidders.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason or action can be taken as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

#### **Section 6 - Equal treatment of all Bidder (s)/ Contractor (s) / Sub-contractor (s)**

- 6.1 The Principal will enter into Integrity Pacts with identical conditions as this Integrity Pact with all Bidders and Contractors.
- 6.2 In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact. In case of Sub-contracting, the Principal Contractor shall be solely responsible for the adherence to the provisions of IP by the sub-contractor(s).
- 6.3 The Principal will disqualify from the tender process all Bidders who do not sign this Integrity Pact or violate its provisions.

#### **Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors**

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

#### **Section 8 -Independent External Monitor(s)**

- 8.1 The Principal appoints competent and credible panel of Independent External Monitor (s) (IEMs) for this Integrity Pact. The task of the IEMs is to review independently and objectively, whether and to what extent the parties comply with the obligations under this Integrity Pact on receipt of any complaint by them from the bidder(s).
- 8.2 The IEMs are not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The IEMs shall be provided access to all documents/ records pertaining to the Contract, for which a complaint or issue is raised before them as and when warranted. However, the documents/records/information having National Security implications and those documents which have been classified as /Top Secret are not to be disclosed.
- 8.4 The Principal will provide to the IEMs sufficient information about all meetings among the parties related to the Contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the IEMs the option to participate in such meetings.
- 8.5 The role of IEM is advisory and the advice of IEM is non- binding on the Organization. However, as IEMs are invariably persons with rich experience who have retired as senior functionaries of the government, their advice would help in proper implementation of the IP.

- 8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of the tendering process, the matter should be examined by the full panel of IEMs jointly, who would look into the records, conduct an examination, and submit their joint recommendations to the Management. In case the full panel is not available due to some unavoidable reasons, the available IEM(s) will conduct examination of the complaints. Consent of the IEM(s), who may not be available, shall be taken on record.
- 8.7 The IEMs shall examine all the representations/grievances/ complaints received by them from the bidders or their authorized representative related to any discrimination on account of lack of fair play in modes of procurement and bidding systems, tendering method, eligibility conditions, bid evaluation criteria, commercial terms & conditions, choice of technology/ specifications etc.
- 8.8 The CMD, BHEL shall decide the compensation to be paid to the IEMs and its terms and conditions.
- 8.9 IEMs should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the Principal should be looked into by the CVO of the Principal.
- 8.10 If the IEMs have reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Bharatiya Nyaya Sanhita (BNS)/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the IEMs may also transmit this information directly to the Central Vigilance Commissioner, Government of India.
- 8.11 After award of work, the IEMs shall look into any issue relating to execution of Contract, if specifically raised before them. As an illustrative example, if a Contractor who has been awarded the Contract, during the execution of Contract, raises issue of delayed payment etc. before the IEMs, the same shall be examined by the panel of IEMs.
- 8.12 However, the IEMs may suggest systemic improvements to the management of the Principal, if considered necessary, to bring about transparency, equity and fairness in the system of procurement.
- 8.13 The word 'Monitor' would include both singular and plural.

#### Section 9 - Pact Duration

- 9.1 This Integrity Pact shall be operative from the date this Integrity Pact is signed by both the parties. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.
- 9.2 If any claim is made/ lodged during currency of this Integrity Pact, the same shall be binding and continue to be valid despite the lapse of this Pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

#### Section 10 - Other Provisions

- 10.1 This Integrity Pact is subject to Indian Laws and exclusive jurisdiction shall be of the competent Courts as indicated in the Tender or Contract, as the case may be.
- 10.2 Changes and supplements as well as termination notices need to be made in writing.

- 10.3 If the Bidder(s)/ Contractor(s) is a partnership or a consortium or a joint venture, this Integrity Pact shall be signed by all partners of the partnership or joint venture or all consortium members.
- 10.4 Should one or several provisions of this Integrity Pact turn out to be invalid, the remainder of this Integrity Pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.
- 10.5 Only those bidders / contractors who have entered into this Integrity Pact with the Principal would be competent to participate in the bidding. In other words, entering into this Integrity Pact would be a preliminary qualification.
- 10.6 In the event of any dispute between the Principal and Bidder(s)/ Contractor(s) relating to the Contract, in case, both the parties are agreeable, they may try to settle dispute through Mediation before the panel of IEMs in a time bound manner. If required, the Principal may adopt any mediation rules for this purpose. However, not more than five meetings shall be held for a particular dispute resolution. The fees/expenses on dispute resolution shall be equally shared by both the parties. In case, the dispute remains unresolved even after mediation by the panel of IEMs, either party may take further action as the terms & conditions of the Contract.

For & On behalf of the Principal  
(Office Seal)

Place GOINDWAL, SANGRUR

Date 10/10/26

Witness: Rajesh Kumar  
(Name & Address) Rajesh Kumar  
SM/ BHEL GOINDWAL, SANGRUR

**राजेश कुमार/Rajesh Kumar**  
(आर्थिक नया विकास क्षेत्र)/(Comm. New Growth Area)  
भारत हेवी इलेक्ट्रिकल्स लिमिटेड  
**BHARAT HEAVY ELECTRICALS LIMITED**  
(भारत सरकार का उपक्रम/A Govt. of India Undertaking)  
इंडस्ट्रियल वाल्व प्लांट/433, Industrial Valves Plant,  
गोइंदवाल (तारन तारन)/Goindwal (Tarn Taran)

**प्रांशु/PRANSHU**  
प्रबंधक/Manager/सामग्री प्रबंधक/Material Management  
भारत हेवी इलेक्ट्रिकल्स लिमिटेड  
**BHARAT HEAVY ELECTRICALS LIMITED**  
भारत सरकार का उपक्रम/A Govt. of India Undertaking  
इंडस्ट्रियल वाल्व प्लांट/433, Industrial Valves Plant,  
गोइंदवाल (तारन तारन)/Goindwal (Tarn Taran)

For & On behalf of the Bidder/ Contractor  
(Office Seal)

Witness: \_\_\_\_\_  
(Name & Address) \_\_\_\_\_

**PART-I (TECHNO-COMMERCIAL BID)**

(To be filled by bidder &amp; submit with offer as pdf file only)

**Tender Enquiry No. & Date****2627-052E Dated 10.10.2026 Due date 21.10.2026****Tender Description****Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)**

Bidder must note following points:

1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder.
2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet.
3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection.
4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. **Bidders are advised to submit duly filled & signed 'PDF' file as techno-commercial (Part-I) bid**. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation.
5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.

**BIDDER's DETAILS**

| Sr. No. | Elements                                                                                                                                                                     | Remarks                         |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 1       | Name of the Firm / Company                                                                                                                                                   |                                 |
| 2       | Registered Address                                                                                                                                                           |                                 |
| 3       | Quotation reference no. & date                                                                                                                                               |                                 |
| 4       | Contact person                                                                                                                                                               | Name / Designation              |
|         | Details                                                                                                                                                                      | Contact Number                  |
|         |                                                                                                                                                                              | Email ID (can be more than one) |
| 5       | Bidder Type (Indian / Foreign):                                                                                                                                              |                                 |
| 6       | Type of Ownership                                                                                                                                                            | Select from drop down list      |
| 7       | Company's Nature of Business                                                                                                                                                 | Select from drop down list      |
| 8       | Year of commencement of Business                                                                                                                                             |                                 |
| 9       | Company registration No. & Incorporation Certificate                                                                                                                         |                                 |
| 10      | PF No.                                                                                                                                                                       |                                 |
| 11      | ESIC No.                                                                                                                                                                     |                                 |
| 12      | PAN No.                                                                                                                                                                      |                                 |
| 13      | GST No.                                                                                                                                                                      |                                 |
| 14      | Name of major / reputed Companies where the vendor is registered                                                                                                             |                                 |
| 15      | Whether company is registered under MSMED Act 2006 as Micro / Small / Medium Enterprise category.<br>(If yes, please attach valid certificate as per latest MSME guidelines) | Select from drop down list      |
|         | If Yes, Please specify the Enterprise Category                                                                                                                               | Select from drop down list      |
|         | Ownership status of MSE Bidder                                                                                                                                               | Select from drop down list      |

If yes, mention UDYAM registration number Here

**TECHNICAL CONDITION DETAIL**

| Sr. No. | Elements                                                                                                                                                                                                   | Response                   | Remarks |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------|
| I       | Technical Documents Applicable :<br>Specification Document of HSS Fit Bolts with Document no. SSFIT-001 Revision - 04 Dated 29.09.2026.<br>[16 pages Document]                                             | Select from drop down list |         |
| II      | Technical Documents Applicable :<br>Technical Delivery Condition (TDC) with document no. TDC:5:216/Rev.01 dt. 29.09.2026.<br>[8 pages Document]                                                            | Select from drop down list |         |
| III     | Technical Documents Applicable :<br>Standard Quality Plan of FIT BOLT Fasteners with Document no. SQP:FITBOLT:001 Rev 8 dated 01.10.2026 along with Heat Treatment Process Checklist<br>[7 pages Document] | Select from drop down list |         |

**PART-I (TECHNO-COMMERCIAL BID)**

(To be filled by bidder &amp; submit with offer as pdf file only)

**Tender Enquiry No. & Date****2627-052E Dated 10.10.2026 Due date 21.10.2026****Tender Description****Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)**

Bidder must note following points:

1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder.
2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet.
3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection.
4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. **Bidders are advised to submit duly filled & signed 'PDF' file as techno-commercial (Part-I) bid**. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation.
5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.

**IV**Technical Documents Applicable :

Additional Technical Conditions of Contract with  
Document No.: BHEL:TCC:FitBolts:Rev01 dt. 01.10.2026  
[1 page Document]

I thoroughly read this document and will comply all the requirements  
of Additional Technical Conditions of Contract with Document No.:  
BHEL:TCC:FitBolts:Rev01 dt. 01.10.2026. Following are the  
Confirmations Required as below : - (From Sr. No. **IV.1 to IV.4**)

**IV.1**

Refer Condition 1.1 : Bidder to confirm the availability of of following Facilities IN-HOUSE: -  
a) Production Facilities: -  
i. Cold / Hot Forging Facility  
ii. CNC machining for Fit bolts  
iii. Thread rolling machines  
iv. Controlled heat treatment furnace / Facility  
b) Testing Facility: All equipment must have valid NABL calibration certification: -  
i. Universal Testing Machine (UTM)  
ii. Spectrometer  
iii. Hardness tester (Rockwell & Vickers)  
iv. Metallurgical Microscope  
v. Torque testing facility  
vi. Coating Thickness gauge  
If testing facility is not available in house, testing shall be witnessed at NABL approved lab only. However, Chemistry including incidental elements on the raw material and final product shall be checked in NABL Lab/supplier's own lab (ISO/IEC 17025:2017 accreditation)..

Select from drop down list

**IV.2**

Refer Condition 1.2 : Hot dip galvanization (HDG) preferably in-house. If HDG is outsourced, a valid MoU/Agreement with the HDG sub-supplier shall be submitted.

Select from drop down list

In case of MoU, Please share the name of MoU partner

**IV.3**

Refer Condition 2.0 : Bidder to Confirm : **Source of Steel** - Input steel for all fit bolt assemblies shall be sourced exclusively from original steel producers having valid BIS licence for IS 5517 or from their authorised dealers, stockist, channel partners with current validity. The fastener manufacturer itself cannot self-certify input steel.

Select from drop down list

**IV.4**

Refer Condition 3.0 : Bidder to Confirm that they shall have **one qualified full time QC Engineer on company rolls**

Select from drop down list

**COMMERCIAL CONDITIONS & DETAILS**

| Sr. No. | Elements                                                   | Response                   | Remarks (if any) |
|---------|------------------------------------------------------------|----------------------------|------------------|
| 1       | GST / Taxes Applicable                                     | Select from drop down list |                  |
| 2       | Delivery Destination (refer tender special term S1 and S6) | Select from drop down list |                  |

## PART-I (TECHNO-COMMERCIAL BID)

(To be filled by bidder & submit with offer as pdf file only)

**Tender Enquiry No. & Date**

**2627-052E Dated 10.10.2026 Due date 21.10.2026**

**Tender Description**

**Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)**

Bidder must note following points:

1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder.
2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet.
3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection.
4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. **Bidders are advised to submit duly filled & signed 'PDF' file as techno-commercial (Part-I) bid**. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation.
5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                            |  |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--|
| 3  | Self Declaration by Bidder : It is hereby declared that Bidder is 'manufacturer of Fasteners' and submitted the List of Machinery (Refer special terms S2.a).                                                                                                                                                                                                                                                                                                     | Select from drop down list |  |
| 4  | Bidder should have Minimum Average Annual Financial Turnover of Rs. 900 Lakhs, over any three financial years out of the last 4 Financial years viz. FY 2022-23, 2023-24, 2024-25 and 2025-26 (Refer special term S2.b).                                                                                                                                                                                                                                          | Select from drop down list |  |
| 5  | Bidder has to submit one or more purchase order/s of 'similar item' (refer Table 3 of tender Special terms) from any customer with minimum cumulative value of Rs. 95 Lakhs along with proof of execution like Invoice / Consignee Receipt Note / Completion Certificate (Refer special term S2.c).                                                                                                                                                               | Select from drop down list |  |
|    | Bidder has to submit atleast one PO copy of HSS Fit Bolts or of Similar item of any value (as per Sl. No. 4 of Table:3) along with proof of execution (Refer special term S2.c).                                                                                                                                                                                                                                                                                  | Select from drop down list |  |
| 6  | Delivery Schedule: 120/150 Days from date of placement of PO / LOI (refer tender special term S4)                                                                                                                                                                                                                                                                                                                                                                 | Select from drop down list |  |
| 7  | Validity: 75 days from techno commercial bid opening. (refer tender special term S5)                                                                                                                                                                                                                                                                                                                                                                              | Select from drop down list |  |
| 8  | Unloading (refer tender special term S6)                                                                                                                                                                                                                                                                                                                                                                                                                          | Select from drop down list |  |
| 9  | Differential Freight Clause (Refer special terms S9)                                                                                                                                                                                                                                                                                                                                                                                                              | Select from drop down list |  |
| 10 | Packing of Material should be inline with tender requirements (Refer special terms S13)                                                                                                                                                                                                                                                                                                                                                                           | Select from drop down list |  |
| 11 | Detention Charges - while unloading at site (Refer special terms S15)                                                                                                                                                                                                                                                                                                                                                                                             | Select from drop down list |  |
| 12 | Compliance to Integrity Pact : Bidder has to attach the undertaking along with offer as per <b>Annexure-R</b> (Refer special term S17). Also checked the following while submitting Annexure - R.<br>i) Name of the Bidder in Page -1 of the Integrity Pact.<br>ii) Name, Signature, Address and stamp of the bidder in the Page-5 (last page) of Integrity Pact.<br>iii) Signature, Name and address of the Witness in the Page-5 (last page) of Integrity Pact. | Select from drop down list |  |
| 13 | Performance Security (PS) :<br>Successful bidders (L1 or counter-offer accepted, wherever applicable) are required to submit performance security of upto 5% of the contract value, <b>subject to maximum value of Rs. 3 Lakh</b> , within 21 days from the award of PO/LOI. (Refer special terms S18)                                                                                                                                                            | Select from drop down list |  |
| 14 | Payment term: (Refer Clause 9 of General Contract Conditions (GCC)).                                                                                                                                                                                                                                                                                                                                                                                              | Select from drop down list |  |

## PART-I (TECHNO-COMMERCIAL BID)

(To be filled by bidder & submit with offer as pdf file only)

**Tender Enquiry No. & Date**

**2627-052E Dated 10.10.2026 Due date 21.10.2026**

**Tender Description**

**Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)**

Bidder must note following points:

1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder.
2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet.
3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection.
4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. **Bidders are advised to submit duly filled & signed 'PDF' file as techno-commercial (Part-I) bid**. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation.
5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.

|    |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                            |  |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--|
| 15 | Treatment of cases regarding Conflict of Interest (Refer clause no. 11 of General Contract conditions (GCC))                                                                                          | 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. | Select from drop down list |  |
| 16 | Breach of contract and Termination (Refer clause no. 14 of General Contract conditions (GCC))                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Select from drop down list |  |
| 17 | <b>Warranty Period:</b> Supplier shall give a warrantee for a period of 18 months from the date of receipt. In case of non-acceptance of this term bid will be rejected. (Refer clause no. 16 of GCC) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Select from drop down list |  |
| 18 | LD clause: Penalty for late delivery will be applicable @ 0.5% per week or part thereof subject to a maximum of 10.0 %. (Refer clause no. 18 of General Contract conditions (GCC)).                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Select from drop down list |  |
| 19 | Make in India (MII) (Refer clause no. 20 of GCC)                                                                                                                                                      | Local Content Declaration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Select from drop down list |  |
|    |                                                                                                                                                                                                       | Details of location at which local value addition will be made is as follows:                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Select from drop down list |  |
| 20 | Certificate regarding Restrictions Under Rule 144(XI) of The GFR, 2017 (Refer clause no. 32 of GCC)                                                                                                   | I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered.                                                                                                                                                                           | Select from drop down list |  |

## PART-I (TECHNO-COMMERCIAL BID)

(To be filled by bidder & submit with offer as pdf file only)

**Tender Enquiry No. & Date**

**2627-052E Dated 10.10.2026 Due date 21.10.2026**

**Tender Description**

**Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)**

Bidder must note following points:

1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder.
2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet.
3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection.
4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. **Bidders are advised to submit duly filled & signed 'PDF' file as techno-commercial (Part-I) bid**. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation.
5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.

|    |                                                                                                                                                                     |                                                                                                                                                                                                                                          |                            |  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--|
| 21 | Declaration regarding Insolvency/ Liquidation/ Bankruptcy proceedings (Refer clause no. 35 of GCC)                                                                  | Bidder is not admitted under insolvency resolution process or liquidation under Insolvency and Bankruptcy Code, 2016, as amended from time to time or under any other law as on date, by NCLT or any adjudicating authority/authorities. | Select from drop down list |  |
| 22 | I have thoroughly gone through the attached tender terms & conditions and understood the above techno-commercial requirements                                       |                                                                                                                                                                                                                                          | Select from drop down list |  |
| 23 | Rates quoted are Exclusive of taxes & FOR DESTINATION basis                                                                                                         |                                                                                                                                                                                                                                          | Select from drop down list |  |
| 24 | If there is any deviation in reference to any of the tender term, kindly mention it <b>HERE</b> only. <b>Deviation specified elsewhere, will not be considered.</b> |                                                                                                                                                                                                                                          | Select from drop down list |  |

### Item detail

| Item Sl. no. | Material Code | Description                                  | Quantity, in Sets<br>(1 Set = 1 Bolt + 1 Nut + 2 Plain washers) | Quoted / not quoted        | Remarks (if any) |
|--------------|---------------|----------------------------------------------|-----------------------------------------------------------------|----------------------------|------------------|
| 1            | 412420140000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M30X130 | 46,500                                                          | Select from drop down list |                  |
| 2            | 412420100000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M30X140 | 32,600                                                          | Select from drop down list |                  |
| 3            | 412420150000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M30X150 | 9,600                                                           | Select from drop down list |                  |
| 4            | 412420180000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X130 | 3,000                                                           | Select from drop down list |                  |
| 5            | 412420110000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X220 | 13,800                                                          | Select from drop down list |                  |
| 6            | 412420190000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X230 | 19,400                                                          | Select from drop down list |                  |
| 7            | 412420200000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X240 | 18,800                                                          | Select from drop down list |                  |
| 8            | 412420120000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X250 | 11,000                                                          | Select from drop down list |                  |
| 9            | 412420220000  | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X270 | 5,700                                                           | Select from drop down list |                  |

## PART-I (TECHNO-COMMERCIAL BID)

(To be filled by bidder & submit with offer as pdf file only)

Tender Enquiry No. & Date

2627-052E Dated 10.10.2026 Due date 21.10.2026

Tender Description

Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

Bidder must note following points:

1. This workbook is protected, except for cells where comments / confirmation is to be given by bidder.
2. Bidder is advised not to unprotect / tamper the sheet / alter the terms mentioned in the sheet.
3. Any alteration to terms mentioned by BHEL will be considered as tampering and bidder's offer shall be liable for rejection.
4. Bidders are advised to only fill the unprotected cells (shaded cells) by dropdown or writing the comments as applicable as their confirmation. **Bidders are advised to submit duly filled & signed 'PDF' file as techno-commercial (Part-I) bid**. Failure on the part of bidder in not returning this duly filled-up techno-commercial bid and / or submitting incomplete replies may lead to rejection of bidder's quotation.
5. All the commercial terms and conditions shall be indicated by vendor in this format only and nowhere else in his quotation. However, in case the space for vendor's reply is not sufficient against a particular question, the vendor shall furnish same by way of separate annexure / sheet attached to this questionnaire, indicating cross-reference of respective clauses.

|    |              |                                              |       |                            |  |
|----|--------------|----------------------------------------------|-------|----------------------------|--|
| 10 | 412420230000 | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X280 | 7,000 | Select from drop down list |  |
| 11 | 412420250000 | HSFIT<br>BOLT+NUT+2PL.WASHER+HD<br>G M36X300 | 9,600 | Select from drop down list |  |

[Validate](#)[Print](#)[Help](#)**Item Wise BoQ**

Tender Inviting Authority: BHEL IVP Goindwal Sahib

Name of Work: Purchase of HDG FIT BOLTS Fasteners in Sets (Bolts, Nuts and Washers)

Contract No: 2627-052E dated 10.10.2026

Name of the  
Bidder/ Bidding  
Firm / Company  
:**PRICE SCHEDULE**

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only )

| NUMBER # | TEXT #           | TEXT #                                | NUMBER # | TEXT # | NUMBER #                                                         |
|----------|------------------|---------------------------------------|----------|--------|------------------------------------------------------------------|
| Sl. No.  | Item Code / Make | Item Description                      | Quantity | Units  | BASIC RATE In Figures To be entered by the Bidder in Rs. Per Set |
| 1        | 2                | 3                                     | 4        | 5      | 7                                                                |
| 1        | 412420140000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M30X130 | 46500    | Sets   |                                                                  |
| 2        | 412420100000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M30X140 | 32600    | Sets   |                                                                  |
| 3        | 412420150000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M30X150 | 9600     | Sets   |                                                                  |
| 4        | 412420180000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X130 | 3000     | Sets   |                                                                  |
| 5        | 412420110000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X220 | 13800    | Sets   |                                                                  |
| 6        | 412420190000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X230 | 19400    | Sets   |                                                                  |
| 7        | 412420200000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X240 | 18800    | Sets   |                                                                  |
| 8        | 412420120000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X250 | 11000    | Sets   |                                                                  |
| 9        | 412420220000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X270 | 5700     | Sets   |                                                                  |
| 10       | 412420230000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X280 | 7000     | Sets   |                                                                  |
| 11       | 412420250000     | HSFIT BOLT+NUT+2PL.WASHER+HDG M36X300 | 9600     | Sets   |                                                                  |

**BHARAT HEAVY ELECTRICALS LIMITED**  
**TIRUCHIRAPPALLI-620 014**

**SUPPORTING STRUCTURES/PE(FB)**



**Title Sheet**

**Specification for**

**HEXAGON FIT BOLT, NUT ASSEMBLIES AND WASHERS**

**Specification Number: SSFIT-001**

**Revision No. 04**

|                 |                      |                                                                                 |                               |
|-----------------|----------------------|---------------------------------------------------------------------------------|-------------------------------|
| 04              | 29.09.2026           | Part of Clause-6.5 and Clause-8 shifted to TDC:5:216 and Note added at the end. | HK/VSrk/JEYARAM               |
| 03              | 30.07.2026           | Clause 8.0 - Raw material requirements (Critical) added                         | HK/VSrk/JEYARAM               |
| 02              | 28.02.2026           | Clause 1.0, 5.0 & 6.0 revised; Clause 7.0 added                                 | HK/KRG/VSrk                   |
| 01              | 20.09.2025           | Ref. standard for clause 5.0 is revised to BS EN 14399-9                        | HK/KRG/VSrk                   |
| <b>Rev. No.</b> | <b>Revision Date</b> | <b>Revision Statement</b>                                                       | <b>Checked &amp; Approved</b> |

|                 | <i>Name</i>   | <i>Signature</i> | <i>Date</i> |
|-----------------|---------------|------------------|-------------|
| <b>Prepared</b> | HARIKRISHNA.T |                  | 04-06-2015  |
| <b>Checked</b>  | D.VISWANATHAN |                  | 05-06-2015  |
| <b>Approved</b> | N.MURUGAN     |                  | 06-06-2015  |

## HEXAGON FIT BOLT, NUT ASSEMBLIES AND WASHERS

### 1.0 SCOPE

Covers the requirements of Hexagon fit bolt, Nut and Washers

| Type / Category        | Consists of                                  |
|------------------------|----------------------------------------------|
| Bolt Assembly          | 1 Bolt + 1 Nut + 2 Plain washers             |
| Bolt Assembly with DTI | 1 Bolt + 1 Nut + 1 DTI + 1 Bolt face washers |

The Bolt Assembly / Bolt Assembly with DTI shall be obtained from a single vendor source.

### 2.0 REFERRED STANDARD FOR HEXAGON FIT BOLT (CURRENT VERSION IS APPLICABLE)

BS EN 14399-8: Latest Rev. High-strength structural bolting assemblies for preloading – Part 8: System HV – Hexagon fit bolt and nut assemblies

#### 2.1 DIMENSIONS OF FIT BOLTS

Dimensions see Figure 1 and Table 1, clamp length see Figure 2 and Table 2

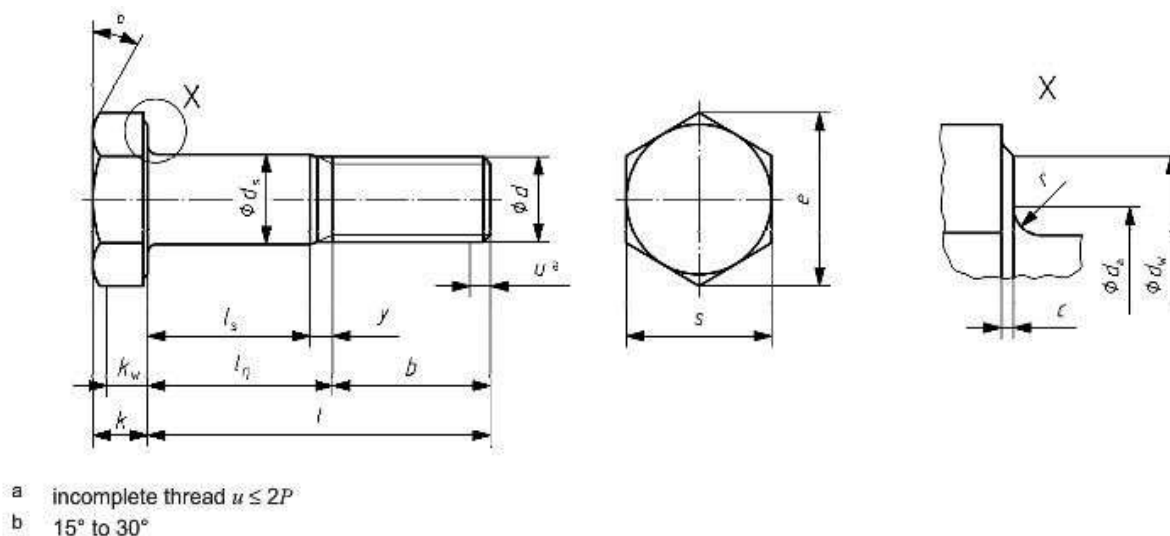


Figure 1 — Dimensions of fit bolts

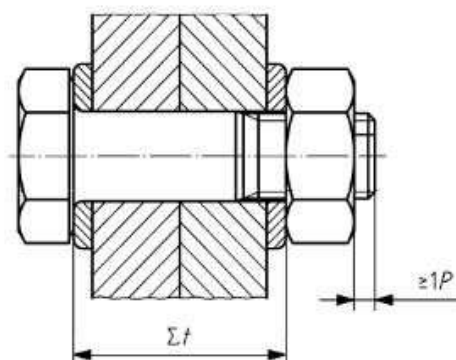


Figure 2 — Clamp length  $\Sigma t$

Table 1 --- Dimensions of fit bolts <sup>a</sup>

| Dimensions in millimetres |                   |       |       |       |       |       |       |       |       |
|---------------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Thread <i>d</i>           |                   | M12   | M16   | M20   | M22   | M24   | M27   | M30   | M36   |
| <i>p<sub>b</sub></i>      |                   | 1,75  | 2     | 2,5   | 2,5   | 3     | 3     | 3,5   | 4     |
| <i>b</i>                  | (ref.)            | 23    | 28    | 33    | 34    | 39    | 41    | 44    | 52    |
| <i>c</i>                  | min.              | 0,4   | 0,4   | 0,4   | 0,4   | 0,4   | 0,4   | 0,4   | 0,4   |
|                           | max.              | 0,6   | 0,6   | 0,8   | 0,8   | 0,8   | 0,8   | 0,8   | 0,8   |
| <i>d<sub>a</sub></i>      | max.              | 15,2  | 19,2  | 24    | 26    | 28    | 32    | 35    | 41    |
| <i>d<sub>s</sub></i>      | nom.              | 13    | 17    | 21    | 23    | 25    | 28    | 31    | 37    |
|                           | min. <sup>c</sup> | 12,74 | 16,74 | 20,71 | 22,71 | 24,71 | 27,71 | 30,67 | 36,67 |
|                           | max. <sup>c</sup> | 12,85 | 16,85 | 20,84 | 22,84 | 24,84 | 27,84 | 30,83 | 36,83 |
| <i>d<sub>w</sub></i>      | min.              | 20,1  | 24,9  | 29,5  | 33,3  | 38,0  | 42,8  | 46,6  | 55,9  |
|                           | max.              | d     | d     | d     | d     | d     | d     | d     | d     |
| <i>e</i>                  | min.              | 23,91 | 29,56 | 35,03 | 39,55 | 45,20 | 50,85 | 55,37 | 66,44 |
| <i>k</i>                  | nom.              | 8     | 10    | 13    | 14    | 15    | 17    | 19    | 23    |
|                           | min.              | 7,55  | 9,25  | 12,1  | 13,1  | 14,1  | 16,1  | 17,95 | 21,95 |
|                           | max.              | 8,45  | 10,75 | 13,9  | 14,9  | 15,9  | 17,9  | 20,05 | 24,05 |
| <i>k<sub>w</sub></i>      | min.              | 5,28  | 6,47  | 8,47  | 9,17  | 9,87  | 11,27 | 12,56 | 15,36 |
| <i>r</i>                  | min.              | 1,2   | 1,2   | 1,5   | 1,5   | 1,5   | 2     | 2     | 2     |
| <i>s</i>                  | max.              | 22    | 27    | 32    | 36    | 41    | 46    | 50    | 60    |
|                           | min.              | 21,16 | 26,16 | 31    | 35    | 40    | 45    | 49    | 58,8  |
| <i>y</i>                  | max.              | 6,5   | 7,5   | 8,5   | 8,5   | 10,0  | 10,0  | 11,5  | 13,0  |

**Table 1 (continued)**

Dimensions in millimetres

| Tread <i>d</i> |        |        | M12                                        |                             | M16                          |                              | M20                          |                              | M22                          |                              | M24                          |                              | M27                          |                              | M30                          |                              | M36                          |                              |
|----------------|--------|--------|--------------------------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <i>l</i>       |        |        | <i>l<sub>s</sub> f and l<sub>g</sub> e</i> |                             |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| nom.           | min.   | max.   | <i>l<sub>s</sub></i><br>min.               | <i>l<sub>g</sub></i><br>max | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. | <i>l<sub>s</sub></i><br>min. | <i>l<sub>g</sub></i><br>max. |
| 50             | 48,75  | 51,25  | 20,5                                       | 27                          |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| 55             | 53,5   | 56,5   | 25,5                                       | 32                          |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| 60             | 58,5   | 61,5   | 30,5                                       | 37                          |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| 65             | 63,5   | 66,5   | 35,5                                       | 42                          | 29,5                         | 37                           |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| 70             | 68,5   | 71,5   | 40,5                                       | 47                          | 34,5                         | 42                           |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| 75             | 73,5   | 76,5   | 45,5                                       | 52                          | 39,5                         | 47                           | 33,5                         | 42                           |                              |                              |                              |                              |                              |                              |                              |                              |                              |                              |
| 80             | 78,5   | 81,5   | 50,5                                       | 57                          | 44,5                         | 52                           | 38,5                         | 47                           | 37,5                         | 46                           |                              |                              |                              |                              |                              |                              |                              |                              |
| 85             | 83,25  | 86,75  | 55,5                                       | 62                          | 49,5                         | 57                           | 43,5                         | 52                           | 42,5                         | 51                           |                              |                              |                              |                              |                              |                              |                              |                              |
| 90             | 88,25  | 91,75  | 60,5                                       | 67                          | 54,5                         | 62                           | 48,5                         | 57                           | 47,5                         | 56                           | 41                           | 51                           |                              |                              |                              |                              |                              |                              |
| 95             | 93,25  | 96,75  | 65,5                                       | 72                          | 59,5                         | 67                           | 53,5                         | 62                           | 52,5                         | 61                           | 46                           | 56                           | 44                           | 54                           |                              |                              | 30                           | 43                           |
| 100            | 98,25  | 101,75 |                                            |                             | 64,5                         | 72                           | 58,5                         | 67                           | 57,5                         | 66                           | 51                           | 61                           | 49                           | 59                           |                              |                              | 35                           | 48                           |
| 105            | 103,25 | 106,75 |                                            |                             | 69,5                         | 77                           | 63,5                         | 72                           | 62,5                         | 71                           | 56                           | 66                           | 54                           | 64                           | 49,5                         | 61                           | 40                           | 53                           |
| 110            | 108,25 | 111,75 |                                            |                             | 74,5                         | 82                           | 68,5                         | 77                           | 67,5                         | 76                           | 61                           | 71                           | 59                           | 69                           | 54,5                         | 66                           |                              |                              |
| 115            | 113,25 | 116,75 |                                            |                             | 79,5                         | 87                           | 73,5                         | 82                           | 72,5                         | 81                           | 66                           | 76                           | 64                           | 74                           | 59,5                         | 71                           |                              |                              |
| 120            | 118,25 | 121,75 |                                            |                             | 84,5                         | 92                           | 78,5                         | 87                           | 77,5                         | 86                           | 71                           | 81                           | 69                           | 79                           | 64,5                         | 76                           |                              |                              |
| 125            | 123    | 127    |                                            |                             | 89,5                         | 97                           | 83,5                         | 92                           | 82,5                         | 91                           | 76                           | 86                           | 74                           | 84                           | 69,5                         | 81                           | 60                           | 73                           |
| 130            | 128    | 132    |                                            |                             |                              |                              | 88,5                         | 97                           | 87,5                         | 96                           | 81                           | 91                           | 79                           | 89                           | 74,5                         | 86                           | 65                           | 78                           |

NOTE The popular lengths are defined in terms of lengths *l<sub>s</sub>* min and *l<sub>g</sub>* max.

- <sup>a</sup> For hot-dip galvanized bolts, the dimensions apply before galvanizing.
- <sup>b</sup> *P* is the pitch of thread. <sup>c</sup> Corresponding to tolerance class
- b11. <sup>d</sup>  $d_w \max = S_{\text{actual}}$  <sup>e</sup>  $l_g \max. = l_{\text{nom.}} - b$  <sup>f</sup>  $l_s \min. = l_g \max.$
- $y_{\max}$

**Table 2 – Clamp length  $\sum t$  <sup>a</sup>**

Dimension in  
millimeters

| Tread d  |        |        | M12                                         |     | M16  |      | M20  |      | M22  |      | M24  |      | M27  |      | M30  |      | M36  |      |
|----------|--------|--------|---------------------------------------------|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <i>l</i> |        |        | $\Sigma t_{\min b}$ and $\Sigma t_{\max c}$ |     |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| nom.     | min.   | max.   | min.                                        | max | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. | min. | max. |
| 50       | 48,75  | 51,25  | 31                                          | 36  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 55       | 53,5   | 56,5   | 36                                          | 41  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 60       | 58,5   | 61,5   | 41                                          | 46  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 65       | 63,5   | 66,5   | 46                                          | 51  | 42   | 47   |      |      |      |      |      |      |      |      |      |      |      |      |
| 70       | 68,5   | 71,5   | 51                                          | 56  | 47   | 52   |      |      |      |      |      |      |      |      |      |      |      |      |
| 75       | 73,5   | 76,5   | 56                                          | 61  | 52   | 57   | 48   | 53   |      |      |      |      |      |      |      |      |      |      |
| 80       | 78,5   | 81,5   | 61                                          | 66  | 57   | 62   | 53   | 58   | 52   | 57   |      |      |      |      |      |      |      |      |
| 85       | 83,25  | 86,75  | 66                                          | 71  | 62   | 67   | 58   | 63   | 57   | 62   |      |      |      |      |      |      |      |      |
| 90       | 88,25  | 91,75  | 71                                          | 76  | 67   | 72   | 63   | 68   | 62   | 67   | 59   | 64   |      |      |      |      |      |      |
| 95       | 93,25  | 96,75  | 76                                          | 81  | 72   | 77   | 68   | 73   | 67   | 72   | 64   | 69   | 61   | 66   |      |      | 51   | 60   |
| 100      | 98,25  | 101,75 |                                             |     | 77   | 82   | 73   | 78   | 72   | 77   | 69   | 74   | 66   | 71   |      |      | 56   | 65   |
| 105      | 103,25 | 106,75 |                                             |     | 82   | 87   | 78   | 83   | 77   | 82   | 74   | 79   | 71   | 76   | 69   | 74   | 61   | 70   |
| 110      | 108,25 | 111,75 |                                             |     | 87   | 92   | 83   | 88   | 82   | 87   | 79   | 84   | 76   | 81   | 74   | 79   |      |      |
| 115      | 113,25 | 116,75 |                                             |     | 92   | 97   | 88   | 93   | 87   | 92   | 84   | 89   | 81   | 86   | 79   | 84   |      |      |
| 120      | 118,25 | 121,75 |                                             |     | 97   | 102  | 93   | 98   | 92   | 97   | 89   | 94   | 86   | 91   | 84   | 89   |      |      |
| 125      | 123    | 127    |                                             |     | 102  | 107  | 98   | 103  | 97   | 102  | 94   | 99   | 91   | 96   | 89   | 94   | 83   | 88   |
| 130      | 128    | 132    |                                             |     |      |      | 103  | 108  | 102  | 107  | 99   | 104  | 96   | 101  | 94   | 99   | 88   | 93   |

NOTE The popular lengths are defined in terms of lengths  $\sum t_{\min}$  and  $\sum t_{\max}$ .

<sup>a</sup> For proper function of the proloaded bolted joint the following condition for the clamp length  $\sum t$  shall be fulfilled:

$(l_{g \max} + 2P) < \sum t < (l_{\min} - P - m_{\max})$ , where  $P$  is the pitch of thread and  $m_{\max}$  is the maximum nut height according to Table 5.

The values of  $\sum t_{\min}$  and  $\sum t_{\max}$  specified in Table 3 are within this range.

The  $\sum t_{\max}$  values are specified on the condition that the minimum bolt protrusion beyond the unloaded nut face shall be 1  $P$ .

## 2.2 SPECIFICATION FOR BOLTS AND REFERENCE STANDARDS

Hexagon fit bolt shall be hot dip galvanized.

Table 3 --- Specifications for bolts and reference standards

|                                                                                                                                                                                                                                                                           |                            |                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------|
| <b>Material</b>                                                                                                                                                                                                                                                           |                            | Steel                                                                                             |
| <b>General requirements</b>                                                                                                                                                                                                                                               |                            | EN 14399-1 <sup>a</sup>                                                                           |
| <b>Thread</b>                                                                                                                                                                                                                                                             | <b>Tolerance</b>           | 6g <sup>b</sup>                                                                                   |
|                                                                                                                                                                                                                                                                           | International Standards    | ISO 261, ISO 965-2                                                                                |
| <b>Mechanical properties</b>                                                                                                                                                                                                                                              | Property class             | 10.9                                                                                              |
|                                                                                                                                                                                                                                                                           | European Standard          | EN ISO 898-1                                                                                      |
| <b>Impact strength</b>                                                                                                                                                                                                                                                    | Value                      | $K_{V,min} = 27 \text{ J at } -20^{\circ}\text{C}$                                                |
|                                                                                                                                                                                                                                                                           | Test specimen <sup>c</sup> | ISO 148-1                                                                                         |
|                                                                                                                                                                                                                                                                           | Test                       | EN 10045-1                                                                                        |
| <b>Tolerances</b>                                                                                                                                                                                                                                                         | Product grade              | C except:<br>dimension $c$<br><br>Tolerance for lengths $\geq 155 \text{ mm}$ : $+17$<br>$-0,517$ |
|                                                                                                                                                                                                                                                                           | International Standard     | EN ISO 4759-1                                                                                     |
| <b>Surface finish<sup>d</sup></b>                                                                                                                                                                                                                                         | normal                     | as processed <sup>e</sup>                                                                         |
|                                                                                                                                                                                                                                                                           | hot dip galvanized         | EN ISO 10684                                                                                      |
|                                                                                                                                                                                                                                                                           | others                     | to be agreed <sup>f</sup>                                                                         |
| <b>Surface discontinuities</b>                                                                                                                                                                                                                                            |                            | Limits for surface discontinuities are covered in EN 26157-1.                                     |
| <b>Acceptability</b>                                                                                                                                                                                                                                                      |                            | For acceptance procedure, see EN ISO 3269.                                                        |
| <sup>a</sup> For the time being EN 14399-1 refers only to EN 14399-3 and EN 14399-4 as far as dimensions and mechanical characteristics of the components and functional characteristics of the assemblies are concerned. Such references shall also apply to EN 14399-8. |                            |                                                                                                   |
| <sup>b</sup> The tolerance class specified applies without surface finish. Hot-dip galvanized bolts are intended for assembly with oversize tapped nuts.                                                                                                                  |                            |                                                                                                   |
| <sup>c</sup> The preparation of the test specimens with V-notch in the fastener shall be as specified in EN ISO 898-1.                                                                                                                                                    |                            |                                                                                                   |
| <sup>d</sup> Attention is drawn to the need to consider the risk of hydrogen embrittlement in the case of bolts of property class 10.9, when selecting an appropriate surface treatment process (e.g. cleaning and coating), see the relevant coating standards.          |                            |                                                                                                   |
| <sup>e</sup> "As processed" means the normal finish resulting from manufacture with a light coating of oil.                                                                                                                                                               |                            |                                                                                                   |
| <sup>f</sup> Other coatings may be negotiated between the purchaser and the manufacturer provided they do not impair the mechanical properties or the functional characteristics. Coatings of cadmium or cadmium alloys are not permitted.                                |                            |                                                                                                   |

## 2.3 MARKING OF HEXAGON FIT BOLTS

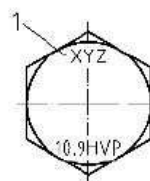
High-strength structural bolts according to this specification shall be marked with:

- Property class marking in accordance with EN ISO 898-1 and the letters HVP.

### EXAMPLE 1 10.9 HVP

- b) The identification mark of the manufacturer of the assembly.  
It is permissible for the marking to be either embossed or indented on the top surface of the head.

EXAMPLE 2 of bolt marking (see Figure 3):



#### Key

1 identification mark of the manufacturers of the assembly

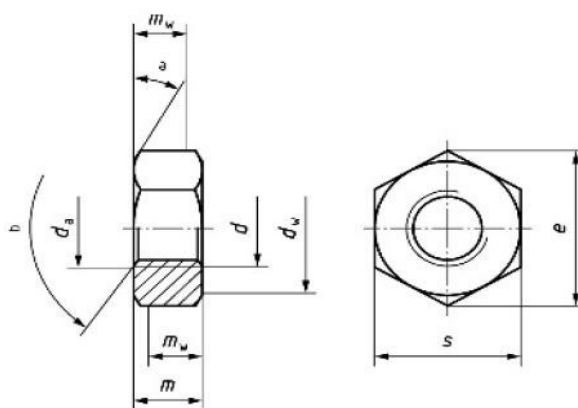
Figure 3 — Example for marking of a bolt

## 3.0 REFERRED STANDARD FOR NUT ASSEMBLIES (CURRENT VERSION IS APPLICABLE)

BS EN 14399-4: Latest Rev. High-strength structural bolting assemblies for preloading – Part 4: System HV – Hexagon bolt and nut assemblies.

### 3.1 DIMENSIONS OF NUTS

Dimensions see Figure 4 and Table 4.



#### Key

a 15° to 30°

b 110° to 130°

Figure 4 --- Dimensions of nuts

**Table 4 --- Dimensions of nuts <sup>a</sup>**

Dimensions in millimetres

| Thread ( <i>d</i> )                                                                                                  |             | M12          | M16          | M20          | M22          | M24          | M27          | M30          | M36          |
|----------------------------------------------------------------------------------------------------------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <i>P</i> <sup>a</sup>                                                                                                |             | 1,75         | 2            | 2,5          | 2,5          | 3            | 3            | 3,5          | 4            |
| <i>d</i> <sub>a</sub>                                                                                                | max.        | 13,0         | 17,3         | 21,6         | 23,7         | 25,9         | 29,1         | 32,4         | 38,9         |
|                                                                                                                      | min.        | 12           | 16           | 20           | 22           | 24           | 27           | 30           | 36           |
| <i>d</i> <sub>w</sub>                                                                                                | max.        | <sup>b</sup> | <sup>b</sup> | <sup>b</sup> | <sup>b</sup> | <sup>b</sup> | <sup>b</sup> | <sup>b</sup> | <sup>b</sup> |
|                                                                                                                      | min.        | 20,1         | 24,9         | 29,5         | 33,3         | 38,0         | 42,8         | 46,6         | 55,9         |
| <i>e</i>                                                                                                             | min.        | 23,91        | 29,56        | 35,03        | 39,55        | 45,20        | 50,85        | 55,37        | 66,44        |
| <i>m</i>                                                                                                             | nom. = max. | 10           | 13           | 16           | 18           | 20           | 22           | 24           | 29           |
|                                                                                                                      | min.        | 9,64         | 12,30        | 14,90        | 16,90        | 18,70        | 20,70        | 22,70        | 27,70        |
| <i>m</i> <sub>w</sub>                                                                                                | min.        | 7,71         | 9,84         | 11,92        | 13,52        | 14,96        | 16,56        | 18,16        | 22,16        |
| <i>s</i>                                                                                                             | max.        | 22           | 27           | 32           | 36           | 41           | 46           | 50           | 60           |
|                                                                                                                      | min.        | 21,16        | 26,16        | 31,00        | 35,00        | 40,00        | 45,00        | 49,00        | 58,80        |
| <sup>a</sup> <i>P</i> is the pitch of thread.<br><sup>b</sup> <i>d</i> <sub>w,max</sub> = <i>s</i> <sub>actual</sub> |             |              |              |              |              |              |              |              |              |

### 3.2 SPECIFICATION FOR NUTS AND REFERENCE STANDARDS

Nut assemblies shall be hot dip galvanized.

**Table 5 --- Specification for nuts and reference standards**

| Material              |                            | Steel                                                             |                    |                               |
|-----------------------|----------------------------|-------------------------------------------------------------------|--------------------|-------------------------------|
| General requirements  |                            | EN 14399-1 and EN 14399-2                                         |                    |                               |
| Thread                | Coating of the bolt        | Uncoated                                                          | Hot dip galvanized | Others                        |
|                       | Tolerance class of the nut | 6H                                                                | 6AZ                | 6H <sup>a</sup>               |
|                       | International Standards    | ISO 261, ISO 965-2                                                | ISO 261, ISO 965-5 | ISO 261, ISO 965-2, ISO 965-5 |
| Mechanical properties | Property class             | 10                                                                |                    |                               |
|                       | European Standard          | EN ISO 898-2                                                      |                    |                               |
| Tolerances            | Product grade              | B                                                                 |                    |                               |
|                       | European Standard          | EN ISO 4759-1                                                     |                    |                               |
| Finish — Coating      | Uncoated                   | As processed <sup>b</sup>                                         |                    |                               |
|                       | Hot dip galvanized         | EN ISO 10684                                                      |                    |                               |
|                       | Others                     | to be agreed <sup>c</sup>                                         |                    |                               |
| Surface integrity     |                            | Limits for surface discontinuities as specified in EN ISO 6157-2. |                    |                               |
| Acceptability         |                            | For acceptance procedure, see EN ISO 3269.                        |                    |                               |

<sup>a</sup> For other coatings that need an increased fundamental deviation and according to the relevant standard, oversize tapped nuts with a thread tolerance class up to 6AZ may be used.

<sup>b</sup> “As processed” means the normal finish resulting from manufacture with a light coating of oil.

<sup>c</sup> Other coatings may be negotiated between the purchaser and the manufacturer provided they do not impair the mechanical properties or the functional characteristics. Coatings of cadmium or cadmium alloys are not permitted.

### 3.3 DECARBURIZATION OF THE NUT THREAD

The decarburization of the nut thread, when measured in analogy to external threads as given in EN ISO 898-1, shall not exceed  $G = 0,015\text{mm}$ .

### 3.4 MARKING OF NUTS

High-strength structural nuts according to this specification shall be marked with:

- a) Property class marking in accordance with EN 20898-2 and the letters HV.

EXAMPLE 1      10 HV

- b) The identification mark of the manufacturer of the assembly.

The marking shall be indented on either bearing face.

EXAMPLE 2      of nut marking (see Figure 5):

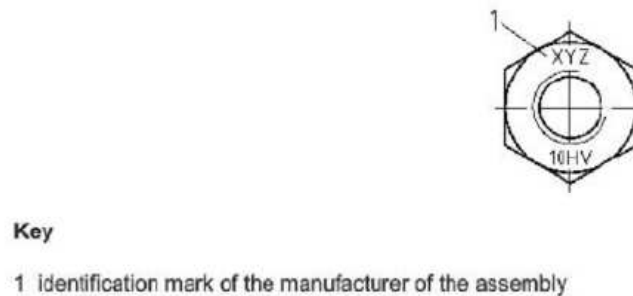


Figure 5 — Example for marking of a nut

## 4.0 DESIGNATION OF THE FIT BOLT / NUT ASSEMBLY

EXAMPLE 1      Designation of an assembly for high strength structural bolting, system HV, consisting of a hexagon fit bolt with large width across flats, with thread M16, nominal length  $l = 80\text{ mm}$  and property class 10.9 and a hexagon nut with large width across flats, with thread M16 and property class 10:

**Hexagon fit bolt/nut assembly EN 14399-8 --- M16 x 80 --- 10.9/10 --- HVP**

If surface finishes other than “as processed” are required, the specified surface finish shall be added to the designation.

EXAMPLE 2      Designation of a hexagon fit bolt with large width across flats, with thread M16, nominal length  $l = 80\text{ mm}$  and property class 10.9:

**Hexagon fit bolt EN 14399-8 --- M16 x 80 --- 10.9 --- HVP**

## 5 REFERRED STANDARD FOR PLAIN CHAMFERED WASHERS (CURRENT VERSION IS APPLICABLE)

BS EN 14399-6: Latest Rev High-strength structural bolting assemblies for preloading  
– Part 6: Plain chamfered washers

### 5.1 DIMENSIONS OF PLAIN CHAMFERED WASHERS

Dimensions see Figure 6 and Table 6.

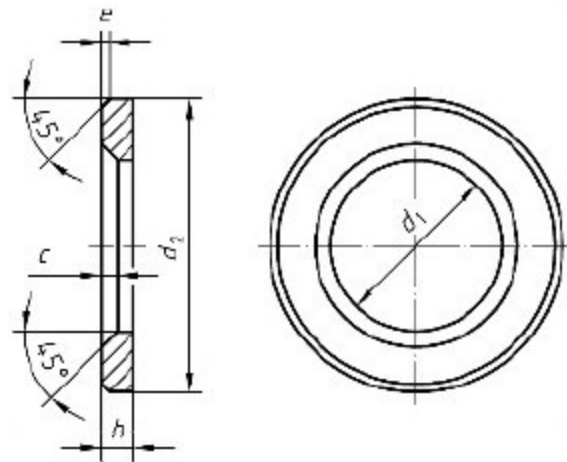


Figure 6 --- Dimensions

For coated washers the above dimensions apply prior to coating.

Table 6 --- Dimensions

Dimensions in millimetres

| Nominal size<br>$d$<br>(nominal thread<br>diameter of associated<br>bolts) |             | 12    | (14) <sup>a</sup> | 16    | (18) <sup>a</sup> | 20    | 22    | 24    | 27    | 30    | 36    |
|----------------------------------------------------------------------------|-------------|-------|-------------------|-------|-------------------|-------|-------|-------|-------|-------|-------|
| $d_1$                                                                      | min.        | 13    | 15                | 17    | 19                | 21    | 23    | 25    | 28    | 31    | 37    |
|                                                                            | max.        | 13,27 | 15,27             | 17,27 | 19,33             | 21,33 | 23,33 | 25,33 | 28,52 | 31,62 | 37,62 |
| $d_2$                                                                      | min.        | 23,48 | 27,48             | 29,48 | 33,38             | 36,38 | 38,38 | 43,38 | 49,00 | 54,80 | 64,80 |
|                                                                            | max.        | 24    | 28                | 30    | 34                | 37    | 39    | 44    | 50    | 56    | 66    |
| $h$                                                                        | nom.        | 3     | 3                 | 4     | 4                 | 4     | 4     | 4     | 5     | 5     | 6     |
|                                                                            | min.        | 2,7   | 2,7               | 3,7   | 3,7               | 3,7   | 3,7   | 3,7   | 4,4   | 4,4   | 5,4   |
|                                                                            | max.        | 3,3   | 3,3               | 4,3   | 4,3               | 4,3   | 4,3   | 4,3   | 5,6   | 5,6   | 6,6   |
| $e$                                                                        | nom. = min. | 0,5   | 0,5               | 0,75  | 0,75              | 0,75  | 0,75  | 0,75  | 1     | 1     | 1,25  |
|                                                                            | max.        | 1,0   | 1,0               | 1,5   | 1,5               | 1,5   | 1,5   | 1,5   | 2,0   | 2,0   | 2,5   |
| $c$                                                                        | min.        | 1,6   | 1,6               | 1,6   | 2,0               | 2,0   | 2,0   | 2,0   | 2,5   | 2,5   | 2,5   |
|                                                                            | max.        | 1,9   | 1,9               | 1,9   | 2,5               | 2,5   | 2,5   | 2,5   | 3,0   | 3,0   | 3,0   |

<sup>a</sup> Sizes in brackets are non-preferred sizes.

## 5.2 SPECIFICATION AND REFERENCE STANDARDS FOR PLAIN CHAMFERED WASHERS

Plain chamfered washers shall be hot dip galvanized.

**Table 7 --- Specification and reference standards for plain chamfered washers**

|                               |                    |                                                                                                                           |
|-------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------|
| Material                      |                    | Steel                                                                                                                     |
| General requirements          |                    | EN 14399-1 and EN 14399-2                                                                                                 |
| Mechanical properties         | Hardness range     | 300 HV to 370 HV                                                                                                          |
| Tolerances                    | Product grade      | A                                                                                                                         |
|                               | European Standard  | EN ISO 4759-3                                                                                                             |
| Finish — Coating <sup>a</sup> | Uncoated           | as processed <sup>b</sup>                                                                                                 |
|                               | Hot dip galvanized | EN ISO 10664                                                                                                              |
|                               | Others             | to be agreed <sup>c</sup>                                                                                                 |
| Workmanship                   |                    | Parts shall be uniform and free of irregularities or detrimental defects. No protruding burrs shall appear on the washer. |
| Acceptability                 |                    | For acceptance procedure, see EN ISO 3269.                                                                                |

<sup>a</sup> Attention is drawn to the need to consider the risk of hydrogen embrittlement when selecting an appropriate surface treatment process (e.g. cleaning and coating), see the relevant coating standards.

<sup>b</sup> "As processed" means the normal finish resulting from heat treatment with a light coating of oil.

<sup>c</sup> Other coatings may be negotiated between the purchaser and the manufacturer provided they do not impair the mechanical properties or the functional characteristics. Coatings of cadmium or cadmium alloys are not permitted.

## 5.3 DESIGNATION

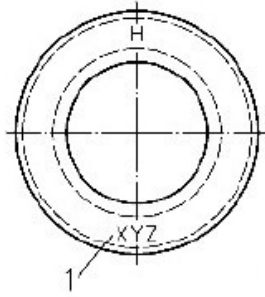
**EXAMPLE** A hardened and tempered chamfered plain washer for high-strength structural bolting for preloading, of nominal size  $d = 16$  mm, with hot dip galvanized coating(tZn), is designated as follows:

**Washer EN 14399-6 --- 16 --- tZn**

## 5.4 MARKING

Hardened and tempered chamfered washers shall be marked with at least the manufacturer's trade (identification) mark and the letter H. The manufacturer may decide to mark washers with HR or HV (instead of H marking) when they are supplied as component of bolting assemblies of system HR or HV respectively.

The marking shall be indented on the non-chamfered side.



**Key**

- 1 identification mark of the manufacturer of the assembly

**Figure 7 --- Example of marking**

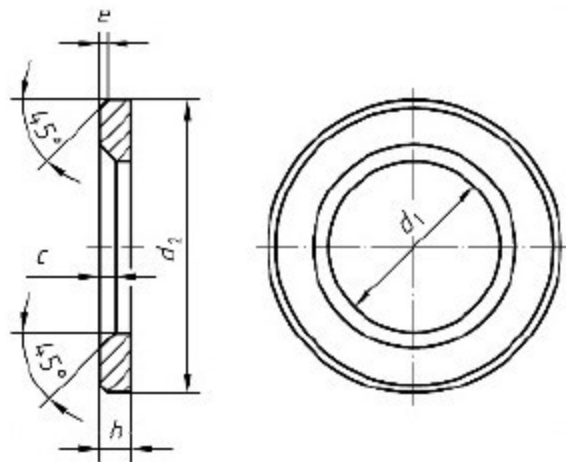
## 6.0 REFERRED STANDARD FOR BOLT FACE WASHERS FOR BOLT AND NUT ASSEMBLIES (CURRENT VERSION IS APPLICABLE)

BS EN 14399-9: Latest Rev High-strength structural bolting assemblies for preloading - System HR or HV.

Direct tension indicators for bolt and nut assemblies

### 6.1 DIMENSIONS OF BOLT FACE WASHERS (HB)

Dimensions see Figure 6 and Table 6.



**Figure 6 --- Dimensions of bolt face washers (HB)**

For coated washers the above dimensions apply prior to coating.

**Table 7 — Dimensions of bolt face washers (HB)**

Dimensions in millimetres

| Nominal size<br><i>d</i><br>(nominal thread<br>diameter of<br>associated bolt) | Internal<br>diameter          |       | External<br>diameter          |      | Thickness        |      | Inside<br>chamfer |      | Outside<br>chamfer |      |
|--------------------------------------------------------------------------------|-------------------------------|-------|-------------------------------|------|------------------|------|-------------------|------|--------------------|------|
|                                                                                | <i>d</i> <sub>1</sub><br>min. | max.  | <i>d</i> <sub>2</sub><br>min. | max. | <i>h</i><br>min. | max. | <i>c</i><br>min.  | max. | <i>e</i><br>min.   | max. |
| <b>M12</b>                                                                     | 13                            | 13,27 | 23,48                         | 24   | 2,7              | 3,3  | 1,6               | 1,9  | 0,50               | 1,0  |
| <b>M16</b>                                                                     | 17                            | 17,27 | 29,48                         | 30   | 3,7              | 4,3  | 1,6               | 1,9  | 0,75               | 1,50 |
| <b>M20</b>                                                                     | 21                            | 21,33 | 36,38                         | 37   | 3,7              | 4,3  | 2,0               | 2,5  | 0,75               | 1,50 |
| <b>M22</b>                                                                     | 23                            | 23,33 | 38,38                         | 39   | 3,7              | 4,3  | 2,0               | 2,5  | 0,75               | 1,50 |
| <b>M24</b>                                                                     | 25                            | 25,33 | 43,38                         | 44   | 3,7              | 4,3  | 2,0               | 2,5  | 0,75               | 1,50 |
| <b>M27</b>                                                                     | 28                            | 28,52 | 49                            | 50   | 4,4              | 5,6  | 2,5               | 3,0  | 1,0                | 2,0  |
| <b>M30</b>                                                                     | 31                            | 31,62 | 54,80                         | 56   | 4,4              | 5,6  | 2,5               | 3,0  | 1,0                | 2,0  |
| <b>M36</b>                                                                     | 37                            | 37,62 | 64,80                         | 66   | 5,4              | 6,6  | 2,5               | 3,0  | 1,25               | 2,50 |

## 6.2 SPECIFICATION AND REFERENCE STANDARDS FOR WASHERS

Bolt face washers shall be Sherardized / Zinc flake coating

**Table 8 — Specifications and reference standards for nut face washers (HN) and bolt face washers (HB)**

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------|
| <b>Material</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   | Steel                                            |
| <b>General requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   | EN 14399-1 and EN 14399-2                        |
| <b>Heat treatment</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   | hardened and tempered                            |
| <b>Hardness <sup>a</sup></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Rockwell hardness | 38 HRC to 45 HRC                                 |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | European Standard | EN ISO 6508-1                                    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Vickers hardness  | 372 HV30 to 448 HV30                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | European Standard | EN ISO 6507-1                                    |
| <b>Tolerances</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Product grade     | C <sup>b</sup>                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Standard          | EN ISO 4759-3                                    |
| <b>Finish — Coating <sup>c</sup></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Uncoated          | as processed <sup>d</sup>                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Sherardized       | EN ISO 17668                                     |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Others            | to be agreed <sup>e</sup>                        |
| <b>Associated bolts and nuts</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   | EN 14399-3, EN 14399-4, EN 14399-7 or EN 14399-8 |
| <b>Associated washers</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   | EN 14399-5 or EN 14399-6                         |
| <b>Acceptability</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   | For acceptance procedure, see EN ISO 3269:2000.  |
| <sup>a</sup> In case of dispute, the Vickers hardness test shall be the referee test method.<br><sup>b</sup> Except as otherwise specified in Tables 6 and 7.<br><sup>c</sup> These washers shall not be electroplated or subjected to any process that could result in hydrogen embrittlement.<br><sup>d</sup> "As processed" means the normal finish resulting from manufacture with a light oil coating.<br><sup>e</sup> Other coatings may be negotiated between the purchaser and the manufacturer providing they do not impair the mechanical properties or functional characteristics. Coatings of cadmium or cadmium alloys are not permitted. |                   |                                                  |

### 6.3 DESIGNATION

Example 1: A bolt face washer (HB) for high-strength structural bolting assemblies, of nominal size  $d = 20$  mm, processed, is designated as follows:

**Washer HB EN 14399-9 — M20**

### 6.4 MARKING

Bolt face washers (HB) shall be marked with the identification mark of the manufacturer of the bolting assembly and the letters HB. The marking shall be indented into one face.

### 6.5 COATING

| Type / Category        | Consists of                 | Coating                         |
|------------------------|-----------------------------|---------------------------------|
| Bolt Assembly          | 1 Bolt + 1 Nut              | Hot Dip Galvanization           |
|                        | 2 Plain washers             |                                 |
| Bolt Assembly with DTI | 1 Bolt + 1 Nut              | Hot Dip Galvanization           |
|                        | 1 DTI + 1 Bolt face washers | Sherardized / Zin Flake Coating |

## 7.0 FUNCTIONAL CHARACTERISTICS OF THE BOLT/NUT/WASHERS ASSEMBLY

The Bolt Assembly / Bolt Assembly with DTI shall be obtained from a single vendor source.

The nut of the bolting assembly shall be suitably lubricated in the as delivered condition, to ensure that seizure will not take place during tightening of the assembly and that the required preload is obtained.

The manufacturer of the bolting assemblies shall state the suitable methods for tightening in accordance with EN 1090-2 in relation the declared k-class. The necessary information for at least one relevant tightening method as mentioned in the below Table shall be stated on the label or packaging.

**Information related to tightening methods for the required preload,  $F_{p,C} = 0.7f_u b A_s$**

| Tightening method according to EN 1090-2 | Minimum information to be supplied                                                                           | k-class         |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------|
| Torque method                            | $k_m = \dots\dots\dots$<br>1 <sup>st</sup> step: Torque = ..... Nm<br>2 <sup>nd</sup> step: Torque = .....Nm | K2              |
| Combined method                          | 1 <sup>st</sup> step: Torque = ..... Nm<br>2 <sup>nd</sup> step: Further rotation                            | K1 <sup>a</sup> |

|                                                                                                   |   |                 |
|---------------------------------------------------------------------------------------------------|---|-----------------|
| Direct tension indicator method                                                                   | - | K0 <sup>b</sup> |
| <sup>a</sup> K2 can also be used.<br><sup>b</sup> K1 or K2 could also be used, but declared as K0 |   |                 |

where

$f_{ub}$  is the nominal ultimate tensile strength of the bolt material

$A_s$  is the nominal stress area of the bolt

Eg: For M30 10.9 grade bolt

$$f_{ub} = 1000 \text{ MPa}; A_s = 561 \text{ mm}^2$$

Required preload  $F_{p,C} = 393 \text{ kN}$

## 7.1 INDIVIDUAL VALUES OF THE k-factor ( $k_i$ ), MEAN VALUE OF THE k-factor ( $k_m$ ) AND COEFFICIENT OF THE k-factor ( $V_k$ )

### 7.1.1 Individual values of the k-factor ( $k_i$ ) for k-class K1

For k-class K1, the  $k_i$  values shall be within the range of  $0.1 \leq k_i \leq 0.16$

### 7.1.2 Mean value of the k-factor ( $k_m$ ) and coefficient of the k-factor ( $V_k$ ) for k-class K2

The mean value ( $k_m$ ) of the k-factor shall be calculated as follows:

$$k_m = \frac{\sum_{i=1}^n k_i}{n}$$

with

$$k_i = \frac{M_{pi}}{F_{p,C} \times d}$$

where

$M_{pi}$  is the individual value of the applied torque;

$F_{p,C}$  is the required preload;

$d$  is the nominal bolt diameter

The coefficient of variation of the k-factor ( $V_k$ ) shall be calculated as follows:

$$V_k = S_k / k_m$$

where

$s_k$  is the standard deviation

$$s_k = \sqrt{\frac{\sum (k_i - k_m)^2}{n-1}}.$$

For  $k_m$  and  $V_k$  the following values apply:

$$0.1 \leq k_m \leq 0.23$$

$$V_k \leq 0.06$$

**NOTE:** Technical Delivery Conditions Doc No: TDC:5: 216 latest Rev is to be followed.

|                                                                                                                     |                                                                                                                               |                                                                                               |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                    | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: <b>29/09/2026</b><br>Page: <b>1 of 8</b> |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders ( <b>Property class Bolt 10.9/ Nut 10</b> ) |                                                                                                                               |                                                                                               |

#### Revision record:

Rev 00: Dt 25/08/26 – Fresh issue

Rev:01 Dt 29/09/26 - Clause 2 Steel making route IF added, MTC requirements included,  
DFT thickness updated, clause 5, point 3 updated

#### 1. SCOPE:

This technical delivery condition document covers the requirements for the High strength Hexagon Fit bolts, Nuts and Washers applicable for Ceiling Girders and shall be procured from the BHEL approved manufacturers only. The mandatory requirements, test methods and procedures from the applicable EN standards to confirm a product to its relevant latest EN standard shall be met with. TDC is in addition to specification.

**Size, Specification and Qty:** As per BHEL Purchase order (PO) /specification. The bolts, nuts and washers shall be supplied in Hot-Dip Galvanized (HDG) Fit Bolt Assemblies conforming to:

- EN 14399-1, EN 14399-2, EN 14399-8 (Fit Bolts)
- EN 14399-8(Nuts)
- EN 14399-6 (Washers)
- EN ISO 898-1 (Mechanical Properties)
- ISO 10684 (HDG Fasteners)
- BHEL specification SS-FIT-01

#### 2. RAW MATERIAL & STEEL MAKING:

- Bolts and Nuts: Rolled/Forged bar of IS5517. Washer: as per IS 1571 Part 2 (Latest)
  - Chemical composition: Shall be checked on receipt of raw material at supplier works for every heat
  - Bolts: Alloy steel quenched and tempered for Class 10.9 – As per Table 3 of EN 14399-8. **For bolt diameters M30 and above, the manufacturer shall ensure enhanced alloying to guarantee through-hardening and prevent brittle “snapping” in the core.**
  - Nuts: As per Table 5 of EN 14399-8.
  - Washers: As per Table 3 of EN 14399-6. Sulphur, Phosphorous <0.06% in check analysis
- DTI Washers/Nut face washers/Bolt face washers: As per EN 14399-9, if applicable as per PO.

The chemical composition requirements are mandatory and shall be evidenced by actual numerical values on the Material Test Certificate (MTC) issued by the steel producer for every heat of steel received. pass/ Fail statements are not acceptable. For the materials of the property classes: 10.9, there shall be a sufficient hardenability to ensure a structure consisting of approximately 90 % martensite in the core of the threaded sections for the fasteners in the “as-hardened” condition before tempering.

#### Accepted Steelmaking Routes and Applicable Conditions:

- Electric Arc Furnace (EAF) + Ladle Refining Furnace (LRF)+ Continuous Casting (CC)  
OR
- Basic Oxygen Furnace (BOF)+LRF+CC  
OR
- Induction Furnace (IF)+LRF+CC.

#### Applicable conditions for class 10.9 bolts of diameter M24 and above:

- Vacuum Degassing (VD) is mandatory. The MTC shall confirm vacuum degassing was applied to that specific heat
- For steel processed via the VD routes the Hydrogen H<sub>2</sub> content' shall be measured and reported in the MTC. Hydrogen Content shall be ≤2 ppm
- The free-ferrite decarburization depth on the incoming bar or rod shall not exceed 0.05 mm absolute and shall be reported in MTC (applicable for all sizes of 10.9 grade)

|                                                                                                            |                                                                                                                               |                                                                                               |
|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                           | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: <b>29/09/2026</b><br>Page: <b>2 of 8</b> |
| <b>Product: Hexagon Fit bolts, Nuts and Washers for Ceiling Girders (Property class Bolt 10.9/ Nut 10)</b> |                                                                                                                               |                                                                                               |

MTC of raw material shall be issued by the steel producer's Authorised inspector. The fastener manufacturer shall not re-issue, reproduce, re- certify the steel MTC under any circumstances. The MTC shall mandatorily contain following data:

- Steel making route
- Standard grade designation
- Chemical composition (C, Mn, Si, Cr, Mo, Ni, P, S, B, Al, V, Cu as applicable). The limits for Sulphur (S), Phosphorus (P) and Boron (B) content be strictly maintain as per IS 1367-3 (latest)
- Non-metallic inclusion rating per IS 4163 / ISO 4967 - numerical ratings for series A, B, C, D (thin and thick)
- Decarburization depth - total decarburization and free-ferrite depth in mm
- Mechanical properties (UTS, YS, elongation, reduction of area) where applicable
- Free-ferrite depth in mm
- Hydrogen Content  $\leq 2$  ppm (for class 10.9 bolts of diameter M24 and above)
- Ultrasonic Testing (UT) for all alloy steel bars of diameter 30 mm and above. The UT test result — 'Done OK' or equivalent with defect classification — shall be reported on the MTC or on a separate UT certificate cross-referenced to the MTC heat number.

#### Manufacturing process requirements

##### Heat treatment

- Oil quenching with agitation control
- Hardness monitoring per batch

##### Threading

- Thread rolling before heat treatment
- No laps, cracks, or thread defects

Hot-Dip Galvanizing as per ISO 10684 and clause 6.5 of specification SSFIT-01.

Strict process control for:

- Cleaning and pickling shall be alkaline or mechanical process, avoid acid cleaning.
- Pickling time – to avoid potential hydrogen embrittlement
- Galvanizing temperature shall be as per clause 5.5 of ISO 10684.
- Nuts tapped oversize to tolerance class 6AZ after coating as per clause 6.2.2 of ISO 10684. Nuts tapped oversize shall be marked with the letter Z immediately after the property class
- Nuts (tapped to 6AZ tolerance) must be supplied with factory applied lubricant. Based on the lot size, additional lubricant should be supplied to site along with bolt assembly.
- Zinc coating thickness shall be minimum of 50  $\mu\text{m}$  and **maximum of 150  $\mu\text{m}$ .**
- Bath temperature – to avoid potential LME
- Fluxing
- Mandatory de-embrittlement baking:  
200°C  $\pm$  10°C for minimum 4 hours  
Within 1 hour of pickling/ galvanizing (log sheet/ reports to be submitted to substantiate the same

Hot-Dip Galvanizing procedure to be submitted by supplier and approved by BHEL

For Bolt face washers -Sherardized coating ISO 17668 and for Zin flake coating ISO 10683 to be followed.

|                                                                                                                     |                                                                                                                               |                                                                                               |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                    | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: <b>29/09/2026</b><br>Page: <b>3</b> of 8 |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders ( <b>Property class Bolt 10.9/ Nut 10</b> ) |                                                                                                                               |                                                                                               |

### 3. DIMENSIONS AND TOLERANCES:

- **Process:** Cold/Hot Forging with Dies and tools clean of loose scale and sheet particles.
- Threads on the bolts shall be checked with a properly calibrated ring gauge with a tolerance class 6g. Threads on the nuts shall be checked with a properly calibrated plug gauge with tolerance class 6H in an NABL accredited LAB. Dimensions and tolerances as per specification SSFIT-01.

**Note:** The washers shall be flat with a maximum deviation not exceeding 0.25 mm from the straight edge laid along a line passing through the center of the hole. The hole of the washer shall be concentric with the outside dimensions within 0.50 mm. washers are required to be clipped to provide clearance, the clipped edge shall not be closer to the center of the washer than 0.9 of the bolt diameter.

### 4. Post Forming Heat Treatment (HT):

- **Bolt:** After forming shall be quenched (HT at AC 3 temperature, with soaking time 30minutes per inch followed by quenching) and tempered (at 425°C min, 60 minutes per inch). There should be a sufficient hardenability to ensure a structure consisting of approximately 90 % martensitic in the core of the threaded sections for the fasteners in the as-hardened condition before tempering.
- **Nut:** Shall be hardened and then tempered (at a temperature of 425°C minimum).
- **Washer:** Shall be hardened and tempered. Carburized washers are not permitted.

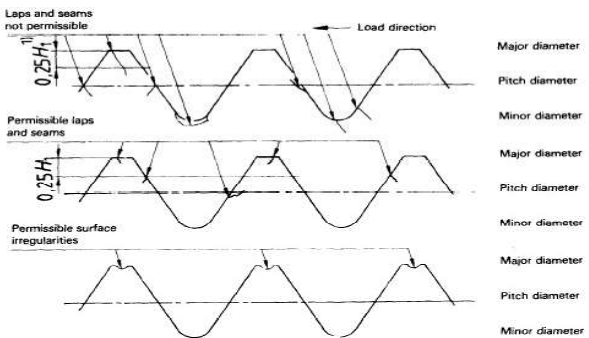
### 5. CHEMICAL & MECHANICAL & NDE: (on Heat Treated finished product)

Sample Size for Mechanical test: & NDE: As per Sampling Plan

#### BOLT :

| Sl | Test                                                                                      | Test Method - As per Table 3 of ISO: 898 Part 1 (Latest)                                                                                                                                                                                                                                                                                                           | Acceptance                                                                                                                          |
|----|-------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Chemistry                                                                                 | Spectro / Wet Analysis Method – One sample for every heat Of raw material and One sample/HT batch on product                                                                                                                                                                                                                                                       | As per Cl 2.0 of this TDC                                                                                                           |
| 2  | Hardness Test                                                                             | Note: Surface hardness shall not be more than 30 Vickers above the measured core Hardness on the product when readings of both surface and core are carried out at HV 0.30.                                                                                                                                                                                        | 10.9- Min 320 HV Max 380 HV<br>27 J min                                                                                             |
|    | Impact Strength                                                                           | Values are determined at a test temperature of –20 °C                                                                                                                                                                                                                                                                                                              |                                                                                                                                     |
| 3  | Minimum Tensile Strength, Yield,%Elongation on 5.65√A, % Reduction in Area after fracture | Axial tensile test must be performed and witnessed by BHEL along with graph from UTM.<br><b>In case of samples not feasible as per IS 1369 P3, during manufacturing of these sizes, few extended-length test specimens (qty. as per BHEL's sampling plan) from the same heat, wire rod, forming process, and heat-treatment batch for testing as per IS 898-1.</b> | 10.9-1040N/mm <sup>2</sup> , 9 min, 48% min                                                                                         |
| 4  | Proof Load Test                                                                           | <b>10.9</b> – Proof Load of M20 (203KN), M24 (293KN), M30 (466KN), M36 (678)KN                                                                                                                                                                                                                                                                                     | Length of the bolt after loading shall be the same as before loading within a tolerance of ± 12.5 µm allowed for measurement error. |
| 5  | Strength under Wedge load test                                                            | ISO: 898-1 (Latest)                                                                                                                                                                                                                                                                                                                                                | 10.9– 1040 N/mm <sup>2</sup>                                                                                                        |
| 6  | Decarburization Test at 200X min magnification                                            | Determination of the following by MICROSCOPIC Method<br>a) Minimum Height of non decarburized thread zone – E<br>b) Maximum depth of complete decarburization – G                                                                                                                                                                                                  | E = 2/3 H1<br>G = 0.015 mm                                                                                                          |
| 7  | Hardness after Retempering                                                                | ISO: 898-1(Latest)<br>test not mandatory, to be applied in case of dispute only                                                                                                                                                                                                                                                                                    | Reduction of hardness 20 HV max.                                                                                                    |

|                                                                                                                     |                                                                                                                               |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
|                                    | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: <b>29/09/2026</b><br>Page: <b>4</b> of <b>8</b> |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders ( <b>Property class Bolt 10.9/ Nut 10</b> ) |                                                                                                                               |                                                                                                      |

|    |                                                                    |                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | NDE for material soundness                                         | <b>before machining –</b><br>For bar Diameter $\geq 30$ mm: UT as per ASTM A388.<br>For bar Diameter $< 30$ mm: MPI as per ASTM E 709<br><b>After machining –</b><br>MPI as per ASTM E 709 or as per ISO 6157 Part 3 (Latest) | UT – ASME SEC-VIII.<br>Div-II Part: 3.3.4 (Latest).<br><br>MPI – Linear indications like cracks, folds & other injurious defects are not acceptable.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 9  | Micro Examination for Surface Integrity – Laps at threaded region. | Laps at thread region and defect if any can be determined by micro examination. Laps shall be checked before Hot dip galvanisation.<br><br> | Max depth of laps in thread = 0.41 mm<br>Laps of any depth or length are not permitted in the following places: <ul style="list-style-type: none"> <li>at the root of the thread</li> <li>at the loaded flank of screw thread below the pitch diameter, even if they start beyond the pitch diameter.</li> </ul> The following laps are permissible : <ul style="list-style-type: none"> <li>laps in the crest of the threads of 0.25 H1 max.;</li> <li>crest of the threads not entirely rolled out, maximum half a turn on one thread;</li> <li>laps below the pitch diameter, if they run on the non-loaded flank towards the major diameter and not deeper than 0.25 H1 and not longer than half a turn on one thread.</li> </ul> |
| 10 | Torque—Tension (k.-factor) test                                    | As per EN 14399-2, EN 14399-8 and EN 1090-2, minimum tension to be achieved<br>Each lot shall be tested.<br>k factor to be furnished by the vendor, along with the tightening method                                          | Refer CL:7 of EN 14399-8<br>For k-class K1, the $k_i$ values shall be within the range of $0.1 \leq k_i \leq 0.16$<br>For k-class K2,<br>$0.1 \leq k_m \leq 0.23$<br>$V_k \leq 0.06$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 11 | Additional Mandatory tests                                         | Non-metallic inclusion rating as per ISO 4967<br>Hydrogen embrittlement as per ISO15330<br>Hydrogen content (for large dia bolts M 30 and above)<br>Microstructure documentation.                                             | Non-metallic inclusion - numerical ratings:<br>Maximum 1 for type series A, B, C, D (thin)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

|                                                                                                                     |                                                                                                                               |                                                                                               |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                    | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: <b>29/09/2026</b><br>Page: <b>5</b> of 8 |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders ( <b>Property class Bolt 10.9/ Nut 10</b> ) |                                                                                                                               |                                                                                               |

**NUT: (on Heat Treated finished product)**

| Sl | Test                      | Test Method                                                                                                      | Acceptance Value                                                                                                                         |
|----|---------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1. | Chemistry                 | Spectro / Wet Analysis Method – For every heat of raw material and, One sample/HT batch on product               | As per Cl 2.0 of this TDC                                                                                                                |
| 2. | Hardness Test             | Hardness of the test mandrel shall be minimum 45 HRC.                                                            | Min 272 HV Max 353 HV                                                                                                                    |
| 3. | Proof Load Test           | <b>10HV</b> M30 (595KN), M36 (866KN) shall be applied axially to the nut in a tensile testing machine for 15sec. | The nut shall resist the load without failure by stripping or rupture, and shall be removable by the fingers after the load is released. |
| 4. | NDE for Surface Integrity | Before coating, as per ISO 6157-2 Cl 4.2 (Latest)                                                                | Linear indications like cracks, folds & Other injurious defects are not acceptable.                                                      |

**WASHER:** The washers shall be free from cracks, burrs, pits and other defects. All sharp edges shall be removed.

| Sl | Test                                        | Test Method                                                                                        | Acceptance Value          |
|----|---------------------------------------------|----------------------------------------------------------------------------------------------------|---------------------------|
| 1. | Chemistry                                   | Spectro / Wet Analysis Method – For every heat of raw material and one sample/HT batch on product. | As per Cl 2.0 of this TDC |
| 2. | Hardness Test for plain chamfered washer    | EN 14399-6 (latest)                                                                                | Min 300 HV<br>Max 370 HV  |
| 3. | Hardness Test for DTI washer                | EN 14399-9 (latest)                                                                                | Max 380 HV                |
| 4. | Hardness Test for Nut face/Bolt face washer | EN 14399-9 (latest)                                                                                | Min 372 HV<br>Max 448 HV  |

**6. MARKING, PRESERVATION AND PACKING:**

The following to be hot stamped or embossed on the top surface of the bolt and nut:

**Bolt-** Manufacturer's Identification Symbol and, 10.9 HVP, Raw material Heat number (last 4 digits) and marking as indicated in specification is to be embossed/indented.

**Nut-** Manufacturer's Identification Symbol and, 10HV (as embossing is not allowed).

**Washer-** Marking as per specification Shall be identified by – the provision of 2 nibs and manufacturers identification symbol being placed as near to the outer edge as possible

The supplier shall maintain records of raw materials, manufacturing, heat treatment, testing and inspection, along with a Raw Material Heat Number Ledger. BHEL may verify these records by conducting audits during execution of the order

The following details shall be clearly indicated in the tags tied to the bundle:

1) Customer Name 2) Manufacturer's Name 3) Vendor Code 4) Purchase Order No and Supplier Internal W.O No 5) Quantity and Weight 6) BHEL Material Code 7) Item Description with diameter, length 8) Torque value, K factor, Raw material Heat no to be indicated on TAG with packing. Torque value and K factor to be witnessed by BHEL

**Colour coding:** To be done only on bolt head as per BHEL drawing as indicated in the Purchase order.

Bolts shall be packed in Polythene lined Hessian Cloth/Bag not exceeding 25kgs and shall be put inside wooden boxes with maximum weight of 3 MT for each box & there shall be no mixing of two or more sizes in single box.

|                                                                                                                   |                                                                                                                               |                                                                                               |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                  | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: <b>29/09/2026</b><br>Page: <b>6 of 8</b> |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders <b>(Property class Bolt 10.9/ Nut 10)</b> |                                                                                                                               |                                                                                               |

## 7. INSPECTION AND CERTIFICATION:

All the finished components shall be visually and dimensionally inspected as per sampling plan. All the test results shall be documented and maintained. Products to be inspected at works & test certificates (in English) shall be submitted with the following details counter signed by BHEL/BHEL Authorized Inspection agency as indicated in the PO. Manufacturers Test certificate (MTC) shall contain the following:

- 1) Purchase Order No. (BHEL), TDC No, Specification and Grade.
- 2) Name of raw material bar supplier.
- 3) Bolt manufacturing process flow
- 4) Dimensional reports for each product (Annexure).
- 5) Chemistry including incidental elements on the raw material and final product checked in NABL lab/ suppliers own lab (ISO/IEC 17025:2017 accreditation).
- 6) HT details of materials temperature, soaking time, ROH/ROC medium, Time-Temperature charts for quenching and tempering etc.
- 7) All Mechanical test result report including tensile strength, yield, % Elongation, % RA, hardness & Impact strength.
- 8) MPI/ UT, Micro examination and decarburization test report with the reference & acceptance standard.
- 9) TC of raw material from a original steel producer as per Clause 2, UT/MPI report done on raw material shall accompany the MTC.
- 10) Torque-tension test results with Torque value and K factor for the specific lot.
- 11) Non-metallic inclusion rating numerical rating as per IS 4163 /ISO 4967
- 12) Report for 90% martensite in the core of the threaded section before tempering.
- 13) Process Qualification Record (PQR) as per the BHEL approved procedure for HDG shall be submitted along with MTC
- 14) The detail reports for the tests conducted to be enclosed as Annexures with MTC.

## 8. AUDITS AT BHEL:

BHEL reserve the right to reject any item found to be not meeting the requirements during tests at supplier works or during subsequent processing at BHEL.

|                                                                                                                     |                                                                                                                               |                                                                                 |
|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                    | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: 29/09/2026<br>Page: 7 of 8 |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders ( <b>Property class Bolt 10.9/ Nut 10</b> ) |                                                                                                                               |                                                                                 |

## TEST SAMPLING PLAN FOR HEXAGON FIT BOLTS, NUTS & WASHERS FOR BHEL TDC: 5: 216

| Lot Size<br>(In nos.)       | SAMPLE SIZE      |                       |               |                 |                    |                                       |                      |                      |                               |     |     |                                                     |                      |                  |                             | Remarks                        |
|-----------------------------|------------------|-----------------------|---------------|-----------------|--------------------|---------------------------------------|----------------------|----------------------|-------------------------------|-----|-----|-----------------------------------------------------|----------------------|------------------|-----------------------------|--------------------------------|
|                             | Visual<br>(nos.) | Dimensional<br>(nos.) | MPI<br>(nos.) | Physical Test   |                    |                                       |                      |                      |                               |     |     |                                                     |                      |                  |                             |                                |
|                             |                  |                       |               | Total<br>(nos.) | Hardness<br>(nos.) | Hardness after Re-Tempering<br>(nos.) | Proof Load<br>(nos.) | Wedge Load<br>(nos.) | Min Tensile Strength<br>(nos) | %EL | %RA | Minimum stress at 0.2 % non-proportional elongation | Impact test<br>(nos) | Decarb<br>(nos.) | Coating Thickness<br>(nos.) |                                |
| Upto 100                    | 20               | 8                     | 15            | 5               | 5                  | 5                                     | 2                    | 2                    | 2                             |     |     | 2                                                   | 1                    | 2                | 2                           |                                |
| 101 to 300                  | 32               | 13                    | 15            | 5               | 5                  | 5                                     | 2                    | 2                    | 2                             |     |     | 2                                                   | 1                    | 2                | 2                           |                                |
| 301 to 500                  | 50               | 20                    | 15            | 5               | 5                  | 5                                     | 2                    | 2                    | 2                             |     |     | 2                                                   | 1                    | 2                | 2                           |                                |
| 501 to1000                  | 80               | 32                    | 15            | 5               | 5                  | 5                                     | 2                    | 2                    | 2                             |     |     | 2                                                   | 1                    | 2                | 2                           |                                |
| 1001 to 3000                | 125              | 50                    | 25            | 8               | 8                  | 8                                     | 2                    | 4                    | 2                             |     |     | 2                                                   | 1                    | 4                | 4                           | Upto 1500 nos 15 nos. for MPI  |
| 3001 to 10000               | 200              | 80                    | 50            | 13              | 13                 | 13                                    | 2                    | 6                    | 2                             |     |     | 2                                                   | 1                    | 6                | 6                           | Upto 5000 nos 25 nos. for MPI  |
| 10001 to 35000              | 315              | 125                   | 75            | 20              | 20                 | 20                                    | 4                    | 8                    | 4                             |     |     | 4                                                   | 2                    | 10               | 10                          | Upto 15000 nos 50 nos. for MPI |
| 35000 to 70000              | 500              | 200                   | 100           | 32              | 32                 | 32                                    | 6                    | 12                   | 5                             |     |     | 6                                                   | 3                    | 15               | 15                          | Upto 50000 nos 75 nos. for MPI |
| Inspection by BHEL/BHEL AIA | W                | W                     | W             | W               | W                  | W                                     | W                    | W                    | W                             |     |     | W                                                   | W                    | W                | W                           |                                |

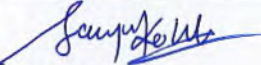
|                                                                                                                   |                                                                                                                               |                                                                                 |
|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|                                  | <b>BHEL – Tiruchirappalli - 620014, India.</b><br><b>Quality Assurance Department</b><br><b>TECHNICAL DELIVERY CONDITIONS</b> | DOC No: <b>TDC:5: 216</b> Rev: 01<br>Effective Date: 29/09/2026<br>Page: 8 of 8 |
| <b>Product:</b> Hexagon Fit bolts, Nuts and Washers for Ceiling Girders <b>(Property class Bolt 10.9/ Nut 10)</b> |                                                                                                                               |                                                                                 |

Remarks:

1. Acceptance Number is zero. If the sample is having deviations in Visual, Dimensional and MPI then the entire lot shall be 100% inspected. In case of deviations in Physical tests a second sample of twice the sample size of initial sample shall be taken. The lot will get rejected if the second sample fails.
2. Inspection by BHEL/BHEL AIA shown as "W" shall be witnessed for the sample size indicated against the lot size
3. Any quantity offered above 70000 nos, will be considered as a new lot and sampling plan shall be reapplied for them.
4. In physical test minimum one number per heat of raw material used to be covered.

|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| Dr. T Sriharsha<br>SM/QA                                                          | M. Jeyaram<br>SM /QA                                                              | B Sriram<br>Manager/MM                                                            | V Saravanakumar<br>DGM/Engg                                                       | Ravi Tirkey<br>SM/QC                                                               | Dr. Ramesh Avvari<br>Sr. DGM/QA                                                     |
| <b>Prepared</b>                                                                   | <b>Reviewed</b>                                                                   |                                                                                   |                                                                                   |                                                                                    | <b>Approved</b>                                                                     |

|  |                                                | BHEL: IVP Goindwal                                                   |                           | STANDARD QUALITY PLAN                              |                                       |                 | QP No            | SQP:FITBOLT:001 |   |                                                               |
|----------------------------------------------------------------------------------|------------------------------------------------|----------------------------------------------------------------------|---------------------------|----------------------------------------------------|---------------------------------------|-----------------|------------------|-----------------|---|---------------------------------------------------------------|
|                                                                                  |                                                | Quality Assurance                                                    |                           | Item: FIT BOLT Fasteners (Bolts, Nuts and Washers) |                                       |                 | Rev              | 8               |   |                                                               |
|                                                                                  |                                                |                                                                      |                           |                                                    |                                       |                 | Date             | 01.10.2026      |   |                                                               |
|                                                                                  |                                                |                                                                      |                           |                                                    |                                       |                 | Page             | 1 of 3          |   |                                                               |
| SN                                                                               | Component & Operation                          | Characteristics                                                      | Type of Check             | Quantum of check                                   | Reference Document                    | Acceptance Norm | Format of Record | Agency          |   | Remarks                                                       |
|                                                                                  |                                                |                                                                      |                           |                                                    |                                       |                 |                  | M               | B |                                                               |
| 1.0                                                                              | Raw material                                   |                                                                      |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
| 1.1                                                                              | Raw Material                                   | Chemical, Mechanical etc.                                            | TC verification           | 100%                                               | BHEL Specification, TDC, Drawing & PO |                 | TC & Report      | V               | V | Format as per BHEL TDC                                        |
| 2.0                                                                              | In Process                                     |                                                                      |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
| 2.1                                                                              | Raw Material Testing                           | Chemical & NDE                                                       | Report Review             | 100%                                               | DO                                    |                 | R                | P               | V | NDE in Raw Material: As per TDC<br>For Chemical: Refer Note 2 |
| 2.2                                                                              | Manufacturing & Heat Treatment process         | Dimensions, Temperature, Time, Medium, HT Chart                      | Report Review             | 100%                                               | DO                                    |                 | R                | P               | V | Refer Note 3 & 4                                              |
| 2.3                                                                              | Thread laps and Micro Examination (before HDG) | Thread Laps and Microstruture                                        | Report Review             | 1 per HT batch                                     | DO                                    |                 | R                | P               | V | Refer Note 5 & 6                                              |
| 2.4                                                                              | Hot Dip Galvanising (HDG)                      | Method of Cleaning and Zinc Bath temperature                         | Procedure & Report Review | 100%                                               | DO                                    |                 | R                | P               | V | HDG procedure to be submitted by supplier                     |
| 2.5                                                                              | Hydrogen Embrittlement Test                    | Hydrogen Embrittlement                                               | Report Review             | Minimum 2 Tests per lot                            | DO                                    |                 | R                | P               | V | As per EN ISO 15330 (latest). BHEL can randomly witness.      |
| 3.0                                                                              | Final Inspection (*)                           |                                                                      |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
| 3.1                                                                              | Visual & Dimension                             | Visual, Dimension, Thread & Marking (Identification & Colour Coding) | Measurement/ Thread Gauge | Sampling plan (*)                                  | DO                                    |                 | R                | P               | W |                                                               |
| 3.2                                                                              | Mechanical Testing (#)                         | Hardness                                                             | Testing                   | DO                                                 | DO                                    | R               | P                | W               |   |                                                               |
|                                                                                  |                                                | Strength under Wedge Load Test till Fracture                         |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
|                                                                                  |                                                | Minimum Tensile Strength                                             |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
|                                                                                  |                                                | %EL, %RA                                                             |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
|                                                                                  |                                                | Minimum Stress at 0.2 % Non-proportional Elongation                  |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
|                                                                                  |                                                | Proof Load Test                                                      |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
|                                                                                  |                                                | Impact Test                                                          |                           |                                                    |                                       |                 |                  |                 |   |                                                               |
|                                                                                  |                                                | Decarburization Test                                                 |                           |                                                    |                                       |                 |                  |                 |   |                                                               |

  
 Prepared By  
 Sanju Kohli  
 Sr. Manager (QM)

  
 Approved By  
 Shelley Kohli  
 SDGM (QM and BE)

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       | <b>BHEL: IVP Goindwal</b><br><br><b>Quality Assurance</b> |               | <b>STANDARD QUALITY PLAN</b><br><br><b>Item: FIT BOLT Fasteners (Bolts, Nuts and Washers)</b> |                                                       |                 | QP No            | SQP:FITBOLT:001 |   |                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------|------------------|-----------------|---|------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |                                                           |               |                                                                                               |                                                       |                 | Rev              | 8               |   |                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |                                                           |               |                                                                                               |                                                       |                 | Date             | 01.10.2026      |   |                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |                                                           |               |                                                                                               |                                                       |                 | Page             | 2 of 3          |   |                                                                              |
| SN                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Component & Operation | Characteristics                                           | Type of Check | Quantum of check                                                                              | Reference Document                                    | Acceptance Norm | Format of Record | Agency          |   | Remarks                                                                      |
| 3.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Torque Value          | Torque to tighten the Bolt Assembly                       | Testing       | DO                                                                                            | Minimum tension to be achieved as per IS 4000 table 3 |                 | R                | P               | W | Refer Note no 7                                                              |
| 3.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Chemical              | Chemical Composition                                      | Testing       | DO                                                                                            | BHEL Specification, TDC, Drawing & PO                 |                 | R                | P               | W | Spectro analysis at NABL Lab only— One sample for every heat of raw material |
| 3.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NDE                   | Surface Quality                                           | MPI           | DO                                                                                            | DO                                                    |                 | R                | P               | W | Not applicable for <u>Washers</u>                                            |
| 3.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Coating               | Hot Dip Galvanizing                                       | Testing       | DO                                                                                            | As per ISO-10684                                      |                 | R                | P               | W | Thickness to be checked                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       | Zinc Flake                                                |               |                                                                                               | As per ISO-10683                                      |                 | R                | P               | W |                                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       | Sherardized                                               |               |                                                                                               | As per EN ISO 17668                                   |                 | R                | P               | W |                                                                              |
| 3.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Packing               | Packing and Marking                                       | Verification  |                                                                                               | BHEL Specification, TDC, Drawing & PO                 |                 | R                | P               | V | Refer Note 8                                                                 |
| <b>Legends:</b><br>M-Manufacturer/Sub contractor, B-BHEL/Authorised inspection agency, V-Verification, W-Witness, P-Perform, R-Report, C-Customer, CHP- Customer Hold point, TC- Test Certificates                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                                                           |               |                                                                                               |                                                       |                 |                  |                 |   |                                                                              |
| (*) BHEL/BHEL TPIA will witness final inspection in supplier works or NABL approved Lab<br>(#) For <u>Nuts</u> : Hardness and Proof load test only, while for <u>Washers</u> : Hardness test only<br>Note: 1. This QP shall be read along with relevant PO, TDC, applicable standards and drawings. Requirements shall be compiled.<br>2. NABL report per Heat of used Raw material conforming its chemical properties wrt to mill TCs.<br>3. Calibration certificates of all instruments and machines used during testing to be provided along with calibration certificate of furnace and thermocouple (For quenching, Tempering furnaces).<br>4. Heat Treatment process to be qualified & witness by BHEL as per BHEL format (for one size of Bolt during manufacturing of First Lot)<br>5. Internal inspection report from supplier for grade 8.8 and above, regarding sufficient hardenability to ensure a structure consisting of approximately 90 % martensite in the core of the threaded sections for the fasteners in the “as-hardened” condition before tempering as per point f of table 2 of ISO 898-1<br>6. Internal inspection reports confirming that Thread laps are within permissible limits, as described by TDC.<br>7. Torque values, K factor to be witnessed as per BHEL specification<br>8. A standardized tag format shall be attached to every gunny bag as per tender terms and conditions |                       |                                                           |               |                                                                                               |                                                       |                 |                  |                 |   |                                                                              |



Prepared By  
Sanju Kohli  
Sr. Manager (QM)



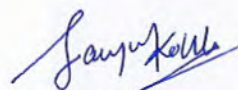
Approved By  
Shelley Kohli  
SDGM (QM and BE)

|                                                                                   |                       |                                                                                       |       |                 |
|-----------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------|-------|-----------------|
|  | BHEL: IVP<br>Goindwal | <b>STANDARD QUALITY PLAN</b><br>Item: FIT BOLT Fasteners (Bolts,<br>Nuts and Washers) | QP No | SQP:FITBOLT:001 |
|                                                                                   |                       |                                                                                       | Rev   | 8               |
|                                                                                   |                       |                                                                                       | Date  | 01.10.2026      |
|                                                                                   |                       |                                                                                       | Page  | 3 of 3          |

| Lot Size<br>(In nos.)           | SAMPLE SIZE      |                       |               |                 |                    |                                              |                         |                         |                                     |     |     |                                                                  |                         |                  |                                | Remarks                           |
|---------------------------------|------------------|-----------------------|---------------|-----------------|--------------------|----------------------------------------------|-------------------------|-------------------------|-------------------------------------|-----|-----|------------------------------------------------------------------|-------------------------|------------------|--------------------------------|-----------------------------------|
|                                 | Visual<br>(nos.) | Dimensional<br>(nos.) | MPI<br>(nos.) | Physical Test   |                    |                                              |                         |                         |                                     |     |     |                                                                  |                         |                  |                                |                                   |
|                                 |                  |                       |               | Total<br>(nos.) | Hardness<br>(nos.) | Hardness<br>after Re-<br>Tempering<br>(nos.) | Proof<br>Load<br>(nos.) | Wedge<br>Load<br>(nos.) | Min<br>Tensile<br>Strength<br>(nos) | %EL | %RA | Minimum<br>stress at<br>0.2 % non-<br>proportional<br>elongation | Impact<br>test<br>(nos) | Decarb<br>(nos.) | Coating<br>Thickness<br>(nos.) |                                   |
| Upto 100                        | 20               | 8                     | 15            | 5               | 5                  | 5                                            | 2                       | 2                       | 2                                   |     |     | 2                                                                | 1                       | 2                | 2                              |                                   |
| 101 to 300                      | 32               | 13                    | 15            | 5               | 5                  | 5                                            | 2                       | 2                       | 2                                   |     |     | 2                                                                | 1                       | 2                | 2                              |                                   |
| 301 to 500                      | 50               | 20                    | 15            | 5               | 5                  | 5                                            | 2                       | 2                       | 2                                   |     |     | 2                                                                | 1                       | 2                | 2                              |                                   |
| 501 to 1000                     | 80               | 32                    | 15            | 5               | 5                  | 5                                            | 2                       | 2                       | 2                                   |     |     | 2                                                                | 1                       | 2                | 2                              |                                   |
| 1001 to 3000                    | 125              | 50                    | 25            | 8               | 8                  | 8                                            | 2                       | 4                       | 2                                   |     |     | 2                                                                | 1                       | 4                | 4                              | Upto 1500 nos 15<br>nos. for MPI  |
| 3001 to 10000                   | 200              | 80                    | 50            | 13              | 13                 | 13                                           | 2                       | 6                       | 2                                   |     |     | 2                                                                | 1                       | 6                | 6                              | Upto 5000 nos 25<br>nos. for MPI  |
| 10001 to 35000                  | 315              | 125                   | 75            | 20              | 20                 | 20                                           | 4                       | 8                       | 4                                   |     |     | 4                                                                | 2                       | 10               | 10                             | Upto 15000 nos 50<br>nos. for MPI |
| 35000 to 70000                  | 500              | 200                   | 100           | 32              | 32                 | 32                                           | 6                       | 12                      | 5                                   |     |     | 6                                                                | 3                       | 15               | 15                             | Upto 50000 nos 75<br>nos. for MPI |
| Inspection by<br>BHEL/ BHEL AIA | W                | W                     | W             | W               | W                  | W                                            | W                       | W                       | W                                   |     |     | W                                                                | W                       | W                | W                              |                                   |

**Remarks:**

1. Acceptance Number is zero. If the sample is having deviation in Visual, Dimensional and MPI, then the entire lot shall be 100% inspected. In case of deviations in Chemical and Physical tests, a second sample of twice the sample size of initial sample shall be taken. The lot will get rejected if the second sample fails.
2. Inspection by BHEL/BHEL AIA shown as "W" shall be witnessed for the sample size indicated against the lot size
3. Any quantity offered above 70000 nos, will be considered as a new lot and sampling plan shall be reapplied for them.
4. In physical test minumim one number per heat of raw material used to be covered.



Prepared by  
Sanju Kohli  
Sr. Manager (QM)



Approved by  
Shelley Kohli  
SDGM (QM and BE)

## HEAT TREATMENT PROCESS CHECKLIST

### Quenching & Tempering - Quality Control

|                               |  |
|-------------------------------|--|
| <b>Bolt Class:</b>            |  |
| <b>Material Spec:</b>         |  |
| <b>Batch/Lot Number:</b>      |  |
| <b>Quantity (pcs):</b>        |  |
| <b>Date of Treatment:</b>     |  |
| <b>Furnace ID &amp; Type:</b> |  |
| <b>Operator Name:</b>         |  |
| <b>Supervisor:</b>            |  |

| Phase                    | Parameter                         | Requirement                                                      | Acceptance Criteria                                                                                                                                        | Verified/Values Recorded | Remarks |
|--------------------------|-----------------------------------|------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------|
| PRE-TREATMENT INSPECTION | Visual inspection of bolts        | Clean, no defects                                                | No cracks, corrosion, or deformation                                                                                                                       | <input type="checkbox"/> |         |
|                          | Chemical composition verification | Cert. of Conformance                                             | Valid CoC from supplier                                                                                                                                    | <input type="checkbox"/> |         |
|                          | Dimensional check (length, dia)   | Within tolerance                                                 | Per ISO 898-1                                                                                                                                              | <input type="checkbox"/> |         |
|                          | Surface cleanliness               | Degreased                                                        | Free of oil, grease, rust                                                                                                                                  | <input type="checkbox"/> |         |
|                          | Initial hardness check (sample)   | As received                                                      | Per batch specification                                                                                                                                    | <input type="checkbox"/> |         |
| FURNACE PREPARATION      | Furnace calibration               | Calibration certificate                                          | Proper validity                                                                                                                                            | <input type="checkbox"/> |         |
|                          | Furnace temperature uniformity    | Calibration certificate & Temperature recording of Thermocouples | Recorded Temperature variation between all thermocouple readings of all zones during start of soaking cycle to match with manufacturer procedure/practice# | <input type="checkbox"/> |         |
|                          | Thermocouples check               | Functional & verified                                            | All thermocouples working                                                                                                                                  | <input type="checkbox"/> |         |
|                          | Interior cleanliness              | Clean, no scale/debris                                           | No contaminants                                                                                                                                            | <input type="checkbox"/> |         |
|                          | Furnace atmosphere check          | Neutral/slight oxidizing                                         | Vendor to Confirm                                                                                                                                          | <input type="checkbox"/> |         |
|                          |                                   |                                                                  |                                                                                                                                                            |                          |         |

|                         |                                           |                                                                |                                                                |                          |  |
|-------------------------|-------------------------------------------|----------------------------------------------------------------|----------------------------------------------------------------|--------------------------|--|
| LOADING & AUSTENITIZING | Ramp-up rate to austenitizing             | Controlled heating                                             | Recorded values to match with manufacturer procedure/practice# | <input type="checkbox"/> |  |
|                         | Austenitizing temperature                 | Hold within tolerance                                          |                                                                | <input type="checkbox"/> |  |
|                         | Temperature tolerance band                | Deviation to be as minimum as possible                         |                                                                | <input type="checkbox"/> |  |
|                         | Soak/dwell time                           | Full austenite transformation                                  |                                                                | <input type="checkbox"/> |  |
|                         | Temperature stability check               | Stable $\pm 5^{\circ}\text{C}$ for 5 min before quench         | Ready for quench                                               | <input type="checkbox"/> |  |
|                         | Sample extraction (for Hardness)          | Full austenite transformation (2Nos samples)                   | Monitor hardness trend ( $\pm 2\text{HRC}$ )                   | <input type="checkbox"/> |  |
| QUENCHING PROCESS       | Quenching medium type                     | Oil (mineral/synthetic) as per manufacturer procedure/practice | Spec of medium to be noted                                     | <input type="checkbox"/> |  |
|                         | Quenching bath temperature                | Control flash point safety                                     | Vendor to confirm                                              | <input type="checkbox"/> |  |
|                         | Quenching bath volume check               | Min. 3x load volume for Adequate heat capacity                 | Vendor to confirm                                              | <input type="checkbox"/> |  |
|                         | Oil circulation system                    | Running during quench                                          | Uniform cooling                                                | <input type="checkbox"/> |  |
|                         | Transfer time from furnace to quench bath | Time to be as minimum as possible                              | Recorded value to match with manufacturer procedure/practice#  |                          |  |
|                         | Quenching agitation                       | Moderate agitation                                             | Avoid cracking/distortion                                      | <input type="checkbox"/> |  |
|                         | Quench time in oil                        | Full cooling to below $40^{\circ}\text{C}$                     | Recorded value to match with requirement                       | <input type="checkbox"/> |  |

|                   |                                     |                                                                                  |                                                                                                                                                           |                          |  |
|-------------------|-------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--|
|                   | Post-quench cooling to room temp    | 30-40 min before tempering                                                       | Medium to be noted and should match manufacturer procedure/practice#                                                                                      | <input type="checkbox"/> |  |
|                   | Quench bath condition check         | Oil clarity & no contamination                                                   | Oil change interval monitored                                                                                                                             | <input type="checkbox"/> |  |
|                   | Microstructure and hardness check   | min. 90% martensite (2Nos samples each for both Hardness & Microstructure check) | i) Hardness levels to be uniform through the surface and core ( $\pm 2\text{HRC}$ )<br>ii) Presence of min. 90% martensite during microscopic examination | <input type="checkbox"/> |  |
| TEMPERING PROCESS | Preheat temperature*                | Reduce thermal shock                                                             | Recorded values to match with manufacturer procedure/practice#                                                                                            | <input type="checkbox"/> |  |
|                   | Preheat duration*                   | Uniform preheating                                                               |                                                                                                                                                           | <input type="checkbox"/> |  |
|                   | Transfer to tempering furnace*      | Transfer Time to be <5 min after preheat to Minimize surface oxidation           | Recorded value to match with requirement                                                                                                                  | <input type="checkbox"/> |  |
|                   | Tempering furnace temperature       | As per standard                                                                  | Recorded value to match standard                                                                                                                          | <input type="checkbox"/> |  |
|                   | Tempering soak time                 | Full tempering                                                                   | Recorded value to match with manufacturer procedure/practice#                                                                                             | <input type="checkbox"/> |  |
|                   | Temperature tolerance band          | Strict control on temperature variation                                          | Recorded value to match with manufacturer procedure/practice#                                                                                             | <input type="checkbox"/> |  |
|                   | Furnace atmosphere during tempering | Air/neutral to eliminate decarburization                                         | Vendor to confirm                                                                                                                                         | <input type="checkbox"/> |  |

|                        |                                                         |                                                                                  |                                                                                                                                             |                          |  |
|------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--|
|                        | Cooling from tempering temp                             | Controlled cooling to room temp naturally                                        | Recorded cooling rate to match with manufacturers procedure/practice)#                                                                      | <input type="checkbox"/> |  |
|                        | Final inspection after tempering & Microstructure Check | Presence of min. 90% tempered martensite (2Nos samples for Microstructure check) | i) Visual check for color/finish (Expected straw/light blue)<br>ii) Presence of min. 90% tempered martensite during microscopic examination | <input type="checkbox"/> |  |
| POST-TREATMENT TESTING | Hardness measurement (HV/HRC)                           | As per standard                                                                  | As per sampling plan in QP                                                                                                                  | <input type="checkbox"/> |  |
|                        | Hardness test location                                  | As per IS 1367-P3                                                                | Consistent sampling                                                                                                                         | <input type="checkbox"/> |  |
|                        | Dimensional check post-treatment                        | Within tolerance                                                                 | As per standard                                                                                                                             | <input type="checkbox"/> |  |
|                        | Surface inspection                                      | No decarburization/cracks                                                        | Accept/Reject                                                                                                                               | <input type="checkbox"/> |  |
|                        | Tensile test (batch sample)                             | As per standard                                                                  | As per ISO 898-1 min values                                                                                                                 | <input type="checkbox"/> |  |
|                        | Yield strength test                                     | As per standard                                                                  | As per ISO 898-1                                                                                                                            | <input type="checkbox"/> |  |
|                        | Ductility check (elongation %)                          | As per standard                                                                  | Tensile test result                                                                                                                         | <input type="checkbox"/> |  |

\*(if applicable as per manufacturer's procedure)

# ref: Documented procedure of Manufacturer

|                                                                                 |  |
|---------------------------------------------------------------------------------|--|
| <b>Heat Treatment Operator:</b>                                                 |  |
| <b>Quality Inspector:</b>                                                       |  |
| <b>Supervisor/Manager:</b>                                                      |  |
| <b>Date:</b>                                                                    |  |
| <b>Batch Approved:</b> <input type="checkbox"/> YES <input type="checkbox"/> NO |  |

# **Additional Technical Conditions of Contract**

[Applicable for procurement of HSFG Bolts, Nuts and Washers]

Ref. No.: BHEL:TCC:FitBolts:Rev01

Date: 01.10.2026

## **1.0 MANUFACTURING TESTING FACILITY REQUIREMENTS (MANDATORY)**

1.1 The following facilities shall be IN-HOUSE (OWN FACILITY ONLY). Sub-Contracting of these processes is strictly prohibited:

a) Production Facilities: -

- I. Cold / Hot Forging Facility (preferably, Closed-die forging with induction heating)
- II. CNC machining\*
- III. Thread rolling machines
- IV. Controlled heat treatment furnace / Facility

b) Testing Facility: All equipment must have valid NABL calibration certification: -

- i. Universal Testing Machine (UTM)
- ii. Spectrometer
- iii. Hardness tester (Rockwell & Vickers)
- iv. Metallurgical Microscope
- v. Torque testing facility
- vi. Coating Thickness gauge\*

If testing facility is not available in house, testing shall be witnessed at NABL approved lab only. However, Chemistry including incidental elements on the raw material and final product shall be checked in NABL Lab/supplier's own lab (ISO/IEC 17025:2017 accreditation).

1.2 Hot dip galvanization preferably in-house. If HDG is outsourced, a valid MoU/Agreement with the HDG sub-supplier shall be submitted.

2.0 RAW MATERIAL REQUIREMENTS: Source of Steel- Input steel for all fit bolt assemblies shall be sourced exclusively from original steel producers having valid BIS licence for IS 5517 or from their authorised dealers, stockist, channel partners with current validity. The fastener manufacturer itself cannot self-certify input steel.

3.0 Mandatory Technical Personnel Requirement- Manufacturer shall have one qualified full time QC Engineer on company rolls.



Bharat Heavy Electricals Ltd.,  
Tiruchirappalli -14

Doc. No: PR: CHEM: 09 - 04

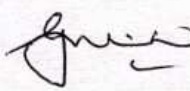
Rev: 03

Date: 01.04.2009

Page 1 of 3

## PLANT LABORATORY

### TECHNICAL SPECIFICATION FOR TEMPORARY RUST PREVENTIVE FLUID FOR BHEL USE TO IS 1153 (MODIFIED)

| REV | DATE       | PREPARED BY                                                                                                     | REVIEWED AND APPROVED BY                                                                                                   |
|-----|------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 03  | 01-04-2009 | <br>L. Gragori<br>DM/Plant Lab | <br>Dr. G. Ravichandran<br>SDGM/Plant Lab |

|                     |            |
|---------------------|------------|
| Controlled Copy No: | Issued to: |
|                     |            |



**Bharat Heavy Electricals Ltd.,  
Tiruchirappalli -14**

**Doc. No: PR: CHEM: 09 – 04**

**Rev: 03**

**Date: 01.04.2009**

**Page 2 of 3**

### **Record of Revisions**

| <b>Rev. No</b> | <b>Date</b>       | <b>Details of Revision</b>                                                                                                  | <b>Remarks</b>                                                       |
|----------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| <b>00</b>      | <b>05.11.1992</b> | <b>NEW</b>                                                                                                                  | <b>----</b>                                                          |
| <b>01</b>      | <b>04.04.1995</b> | <b>Sl.No. 1,3 &amp; 5 modified</b>                                                                                          | <b>Quality improvement</b>                                           |
| <b>02</b>      | <b>20.05.2003</b> | <b>Sl.No. 8 Temperature Resistance Newly added</b>                                                                          | <b>Based on Valves Requirement</b>                                   |
| <b>03</b>      | <b>01.04.2009</b> | <b>Editorial corrections made &amp; new requirements added in Sl.No. 6, 12 &amp; 16. Other Sl. No. Changed accordingly.</b> | <b>SSTP's additional requirements as given in TDC/CHEM/06 added.</b> |



**REQUIREMENTS FOR TEMPORARY RUST PREVENTIVE FLUID**

|    |                                                                              |                                                                                                                                                                                                                        |
|----|------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Specific Gravity at ambient temperature                                      | 0.85 - 0.95                                                                                                                                                                                                            |
| 2  | Flash Point °C (min)                                                         | 40                                                                                                                                                                                                                     |
| 3  | Drying time : Surface Dry (Hours, max)                                       | ½                                                                                                                                                                                                                      |
|    | Tack free (Hours, max)                                                       | 4                                                                                                                                                                                                                      |
| 4  | Dry film thickness (Microns) per coat-min                                    | 20                                                                                                                                                                                                                     |
| 5  | Ford cup Viscosity (No.4) seconds at ambient temperature                     | 25 ± 5                                                                                                                                                                                                                 |
| 6  | Odour                                                                        | No objectionable Odour                                                                                                                                                                                                 |
| 7  | Film type Transparent/Translucent                                            | Transparent                                                                                                                                                                                                            |
| 8  | Application Method                                                           | Brush/Spray                                                                                                                                                                                                            |
| 9  | % Non- Volatiles by mass                                                     | 55 ± 5                                                                                                                                                                                                                 |
| 10 | Temperature Resistance of RPF film at 50 °C (for 6 hrs)                      | To pass test.                                                                                                                                                                                                          |
| 11 | Corrosion Protection under conditions of condensation for 300 hours.         | No sign of corrosion.                                                                                                                                                                                                  |
| 12 | Liebermann –Storch test for the detection of natural resin & its derivatives | No development of pink colour – indicating absence of natural resin.                                                                                                                                                   |
| 13 | Salt spray test for 72 hours                                                 | No sign of corrosion.                                                                                                                                                                                                  |
| 14 | Outdoor durability                                                           | The coating shall not crack or turn opaque when exposed to out door, unsheltered condition for 1 year.                                                                                                                 |
| 15 | Scratch Hardness test (Under load of 1000 g as per IS 101 (Latest)           | To pass test                                                                                                                                                                                                           |
| 16 | Compatibility with Alkyd /Lacquer based paints.                              | Compatible.                                                                                                                                                                                                            |
| 17 | Keeping Property – Months (Shelf life) min.                                  | 12                                                                                                                                                                                                                     |
| 18 | General conformance to I.S Specification                                     | IS 1153 (Latest)                                                                                                                                                                                                       |
| 19 | Packing standard/markings                                                    | Supply in 200/20/10 Lt. Barrels as per PO indicating the following.<br>Rust Preventive fluid for BHEL use only.<br>Supplier's Name:<br>Batch No: Date<br>Quantity:<br>Shelf Life:<br>BHEL Specn.PR:CHEM:09-04 (latest) |
| 20 | Test certificate                                                             | The supplier shall furnish test certificate for the above requirements Sl.No.1 to 16 in duplicate.                                                                                                                     |