

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION		PY 52210	
		TECHNICAL SPECIFICATION FOR		Rev. No. 00	
		DUCTILE IRON PIPE FITTINGS PACKAGE		Page 1 of 6	

SPECIFICATION FOR DUCTILE IRON PIPE FITTINGS PACKAGE

GENERAL NOTE:

- 1) Vendor to quote all the listed items of BOM and any incomplete offer will be prone for rejection.
- 2) In case of any queries on the Technical matters, non-availability of specifications etc., bidder shall contact BHEL within 3 days of receipt of Enquiry for seeking clarifications. This will not be used for extending technical bid submission due date or delay of procurement cycle time. No queries will be entertained after Bid submission is completed.
- 3) For addition/reduction of quantity, unit rate quoted in the present offer shall be considered.

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Form No:	LAYOUT & PIPING ENGINEERING PROJECT ENGINEERING & SYSTEMS DIVISION	PREPARED	CHECKED	APPROVED	DATE
		IMRAN	KALYAN	GS	29.06.17

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	PY 52210
		TECHNICAL SPECIFICATION FOR	Rev. No. 00
		DUCTILE IRON PIPE FITTINGS PACKAGE	Page 2 of 6

1. SCOPE
This specification covers design, manufacture, testing and supply of ductile iron pipe fittings, as per applicable Indian standards.

2. APPLICABLE STANDARDS

IS 9523: Ductile Iron Fittings for Pressure Pipes for Water, Gas and Sewage - Specification
The supply shall meet all the requirement of latest editions of above standards.

3. APPLICATIONS / USE

The material, pipes and piping components covered under this specification are used for sewage treatment plant applications

4. MANUFACTURING,CHEMICAL COMPOSITION & MECHANICAL PROPERTIES

As per applicable standards indicated in clause no.2 above

5. DIMENSIONS & TOLERANCES

As per applicable standards indicated in clause no.2 above

6. TESTING REQUIREMENTS INCLUDING HYDRO STATIC TEST

As per applicable standards indicated in clause no.2 above

7. DESIGNATION

As indicated in bill of quantities (BOQ) as per applicable PEMC-XXXX document indicated in variant table.

8. INSPECTION REQUIREMENTS

BHEL's representative shall have free access at all times to all parts of the manufacture's works, until the work on the contract of BHEL is being performed. The manufacturer shall offer BHEL's representative all reasonable facilities, without charge, to satisfy the latter that the material is being furnished in accordance with the specification

9. PRESERVATION,LINING AND COATING:

In general, as per applicable standards indicated in clause no.2 above

Lining:
Cement Mortar lining with high alumina cement applicable **for sewage applications as per** ISO 4179 / BS EN 14647

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION FOR DUCTILE IRON PIPE FITTINGS PACKAGE	PY 52210
			Rev. No. 00
			Page 3 of 6

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Coating: Unless otherwise specified in BOQ, the coating shall be: Metallic Zinc coating (200gms/m² min) with finishing layer of bituminous/epoxy coating.

10. RUBBER GASKETS FOR PUSH-ON JOINTS:

Rubber gasket (applicable for push-on joints) for each socket shall be supplied along with each socketed fitting

The applicable standards shall be IS 9523 & IS 5382

11. EVALUATION CRITERIA

- Vendor shall quote and supply all items indicated in the Bill of Quantity table indicated in applicable PEMC-XXXX document.
- Any deviations to this specifications and BOQ shall be clearly indicated in "DEVIATIONS LIST". Deviations not clearly indicated under heading "DEVIATIONS LIST" shall not be considered.
- Bidder to quote unit price against each item. **For any reduction/addition of quantity in final order/PO, the unit price shall be considered.**

12. TECHNICAL OFFER FORMAT

Technical offer shall be submitted along with

- Signed & stamped copy of all sheets of applicable PEMC-XXXX document, indicating the offer number and date in ink.
- Signed & stamped copy of this specification along with deviations list if applicable.

13. PACKING

Unless otherwise specified the packing shall be as per applicable standards indicated in clause no.2 above

Before packing of the material all the Pipe and pipe fitting material shall be dried, cleaned, and entire surface shall be well coated as per IS:9523. Pipe threads shall be protected with suitable grease. Openings of the supplied material shall be covered with plastic make dummy plugs to avoid any entry of foreign material.

Packing shall be done properly to protect from mechanical damage during transportation and outdoor storage for a long time. The packing shall be accomplished with acceptable commercial practices for domestic applications. However, for foreign shipments packing shall be Sea-worthy or Air-Transportation packing procedure as per BHEL enquiry. Properly packed material shall be sent to relevant project site mentioned in the enquiry or by BHEL purchase department directions.

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION TECHNICAL SPECIFICATION FOR DUCTILE IRON PIPE FITTINGS PACKAGE	PY 52210
			Rev. No. 00
			Page 4 of 6

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14. MARKING

In addition to the marking requirements of applicable standards indicated in clause no.2 above, each Item shall be marked with following details (Font size:12MM)

1. BHEL PO Number, Date of supply,
2. Manufacture name & Trade Mark,
3. Item/fitting details including nominal size & rating, material Grade, etc.,
4. Mark of Inspection Authority (If required).

Each packing shall be marked as (Font Size: As size as visible with naked eye)

1. Material code,
2. Quantity,
3. BHEL Purchase Order Number, Date of PO release.
4. Dispatch number,
5. Manufacture name, Place.
6. Manufacture model number (if any).

If space is constraint on the item to be marked, vendor shall provide marking as per order mentioned above, up to availability of space.

In addition, for marking requirements: BHEL standard "AA0851402" – Technical delivery conditions for fittings shall be followed

15. DOCUMENTATION

Documentation shall be in two stages, during offer submission, and next during drawing approval stage. All the documents shall be preferable in A4 size in auto-CAD software. The documentation aesthetics shall be in line with international standards. Incomplete data, without title blocks, name of the item etc will not be acceptable. Vendor shall be responsible for creating, making and arranging complete documentation as per BHEL requirements at any stage.

14.1 During Technical offer submission:

1. Technical offer as indicated in above clause no.13
2. Fittings list/BOQ indicating the details like fitting type size, rating, material grade, unit weights and quantity
3. Technical catalogues

14.2 During drawing approval after PO placement.

1. All the documents as specified in above point no:14.1,
2. Fittings list/BOQ indicating the details like fitting type size, rating, material grade, unit weights and **final ordered quantity as per PO** and
3. Quality plan

Form No:	 PE&SD	BHARAT HEAVY ELECTRICALS LIMITED PROJECT ENGINEERING & SYSTEMS DIVISION	PY 52210
		TECHNICAL SPECIFICATION FOR	Rev. No. 00
		DUCTILE IRON PIPE FITTINGS PACKAGE	Page 5 of 6

14.3 Along with material, final documentation in 15 Copies separated and kept in separated folders. Two number of soft copies in CD format of all the information mentioned in point no:14.3.

1. All the documents specified in point no:14.2,
2. Photo copies of BHEL Approved documents,
3. Test certificates,
4. Inspection reports,
5. Warrantee certificates, and
6. Operation & Maintenance manuals if any,

16. GAURANTEE

Vendor shall furnish a guarantee certificate stating that the items supplied shall be suitable for use at the relevant pressure temperature ratings. The warrantee shall be valid for a minimum period of 24 months from the date of supply or 18 months from the date of commissioning. If any defect arises in the material during manufacturing process, transportation activities, vendor is sole responsible for the replacement of defective material with in a period of 3 weeks from the supply/identified as defective.

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VARIANT TABLE			
Var. No.	Date	Details/Description	Material Code
00	29.06.17	DUCTILE IRON PIPE FITTING package for 4.5 MLD STP-BHEL-BHOPAL project as per PEMC-07263	PY9752210015

