

1.8 MATERIAL HANDLING (BHEL ISSUED MATERIAL)

- 1.8.1.1** Cement (OPC/ PPC/ PSC), reinforcement, MS earthing rod, structural steel (plate, ISMB, channel, angle, chequered plate,)will be issued free of cost by BHEL for use in the work covered in this contract as per tender terms.
- 1.8.1.2** Unless otherwise specified/ mentioned, contractor shall provide/ supply all other materials from approved manufacturers/ suppliers and quoted rates/ price shall be in consideration to this.
- 1.8.1.3** Cement & steel will be issued to the contractor from BHEL/ owner's store within the plant premises, on weighment basis. Receipt from BHEL/ owner's stores, handling/ transportation to work site, unloading etc will be under the scope of work of this tender, within the quoted rates.
- 1.8.1.4** Open levelled and graded land shall be provided by BHEL on free of cost basis. The contractor shall maintain one centralized fenced store cum bar bending yard (Area approx 70 m x 70 m). Hard surfacing of this yard and all round drain shall be carried out by the contractor at the contractor's own cost within the accepted rate. The contractor shall make complete arrangement of necessary security personnel, to safeguard all such materials in the contractor's custody. Materials issued will be used only for construction of permanent work. The contractor shall take care of material issued by BHEL and shall protect the same from theft, damage and weathering.
- 1.8.1.5** The contractor shall construct waterproof cement store for initial period (capacity minimum 500 MT) for storing and stacking of cement, CGI/ asbestos roofing (slope) with brick masonry wall, PCC flooring. Materials required for the same shall be provided by the the contractor at his own cost. Cement has to be kept over wooden raised platform. Stacking of cement is to be done as per IS codes with proper illumination & locking arrangement
- 1.8.1.6** The contractor shall in no case be entitled for any compensation or damages on account of any delay in supply or non-supply thereof for all or any such material
- 1.8.1.7** Clotting of cement and excessive rusting of steel must be avoided by way of proper storage. In case, due to any cause attributable to the contractor , such clotting of and/ or rusting of steel occur rendering the same unusable, then such quantity of cement/ steel shall be recovered from the interim payment at the penal rate specified in the tender.
- 1.8.1.8** No material shall be issued to the contractor except as those indicated above i.e. cement and steel unless otherwise expressly provided for in the contract. The contractor will have to make the contractorr own arrangement at the contractorr own cost for procurement of any other material as required for the works and of such quality as acceptable to BHEL

- 1.8.1.9 The contractor shall maintain proper store account for all the BHEL issued materials and shall give three copies of once in two months computerised reconciliation statement of such account to the BHEL.
- 1.8.1.10 The contractor shall solely be responsible for the safety & quality of material after it is handed over and issued to the contractor by BHEL.
- 1.8.1.11 BHEL issued materials shall not under any circumstances taken out of the project site unless otherwise permitted by BHEL.

1.9 Issue of materials

1.9.1 Issue of CEMENT

- 1.9.1.1 Cement as received from the manufacturer/ stockiest will be issued free of cost to the the contractor. The theoretical weight of each bag of cement for issued purposes will be considered as 50 kg, the contractor shall be accountable for the cement issued to the contractor on this notional weight only. No claim whatsoever will be entertained because of difference between theoretical and actual weight of the bags of cement.
- 1.9.1.2 The empty cement bags duly accounted for against issue shall be the contractor's property and the same shall be disposed as per statutory regulation prevailing in the project.

1.9.2 ISSUE OF STEEL.

1.9.2.1 The steel shall be issued to the contractor on the following basis:

- 1.9.2.1.1 Structural Steel : Weighment basis (Unit – MT)
- 1.9.2.2 Reinforcement Steel : Weighment basis (Unit-MT)
and Earthing rod (MS round).

1.9.2.2 All the steel (structural, reinforcement, earthing MS rod,) issued by the BHEL shall be properly accounted for. The total quantity of steel required for the work will be calculated from the approved Bar Bending schedule, fabrication drawings, approved laps, chairs and lugs. The measurement for payment as well as for accounting shall be based on the sectional weights as indicated in the following IS specifications.

IS: 808-1964 Beams, Channels and Angles

IS: 1730-1961 Plates, Sheets and Strips/Flats

IS: 1786 or grade -1 of IS432 (Part-I) Rounds including deformed high yield strength bars.

1.9.2.3 In case any such sectional weights are not available in the above documents, the manufacturer recommendation shall be binding.

1.9.2.4 The steel issued to the contractor shall be mainly in standard length and sections as received from the supplier. However, the contractor shall be bound to accept the steel in length as available in the project stores, no claims for extra payment because of issue of non-standard length will be entertained.

1.9.3 The contractor shall satisfy himself of the quality and quantity of the materials at the time of taking delivery from BHEL stores. No claims whatsoever will be entertained by BHEL because of quality or quantity after the materials are taken by the contractor from BHEL stores.

1.9.4 The contractor shall submit to the engineer, a statement indicating estimated quantity of **cement and steel** required during a quarter, **at least three months in advance** of the quarter. In addition, the contractor shall also furnish the estimated requirement of steel during a month by the third week of the previous month indicating his requirement.

1.9.5 Following shall be limit for the maximum quantity of BHEL issue materials that would be with the contractor at any point of time when work is in progress (excluding what has already been incorporated in the works).

SL No.	ISSUE OF MATERIALS	MAX QUANTITY IN CONTRACTORS STORE
01	REINFORCEMENT STEEL AND EARTHING ROD MS ROUND	ONE MONTH
02	STRUCTURAL STEEL	ONE MONTH
03.	CEMENT	ONE MONTH

- 1.9.6 Bidders to ensure that no lamination material are taken over by them from BHEL. Fabrication wastage, if any due to above, shall not be compensated by BHEL.**
- 1.9.7 Bidder to note that steel materials required for MS Grating, Galvanised Grating, GI Handrail, Stainless Steel Handrail, Stop Lock Gate, Stationery Screen, fasteners like MS/HT/HSFG bolts/nuts, lock nuts, washers and foundation bolts other than those supplied by BHEL, etc shall be supplied by the bidder.**
- 1.9.8 The contractor have to note that cement and steel required for the contractorr enabling job like store/ site office etc shall be arranged at the contractorr own cost.**

1.10 RETURN OF MATERIALS

1.10.1 Return of CEMENT

- 1.10.1.1 Sealed cement bags remaining unused and in perfectly good condition at the time of completion or termination of the contract shall be returned promptly, (within 15 days from assessment) if BHEL/ engineer is satisfied of the physical condition of the cement. Return of such cement to the project stores / place as identified within the project area by engineer/ BHEL will not be entitled to handling and incidental charges. Surplus sealed and good conditioned cement bags will be taken back on weighment basis.

1.10.2 RETURN OF STEEL INCLUDING SCRAP

- 1.10.2.1 All surplus steel and all wastage materials will be taken back on weighment basis.
- 1.10.2.2 Surplus, unused and untampered steel shall be sorted section-wise and returned separately for a place directed by BHEL/Engineer within the project area. Return of such materials will not be entitled to any handling and incidental charges.
- 1.10.2.3 All wastage / scrap (including melting scrap, wastage, unusable scrap) shall be promptly returned to the stores and a receipt obtained for material accounting purposes. Return of such material will not be entitled to any transportation and incidental charge.
- 1.10.2.4 Scrap for reinforcement steel and structural steel shall be returned separately.

1.11 CEMENT AND STEEL CONSUMPTION AND WASTAGE

1.11.1 CEMENT CONSUMPTION

- 1.11.1.1 The theoretical consumption of cement shall be based on the following
- 1.11.1.1.1 For design mix concrete as per approved design mix.
- 1.11.1.1.2 For nominal mix concrete work, as per minimum cement as specified or as approved by engineer-in-charge.
- 1.11.1.2 For item of works, where volume mix is permitted in writing by the BHEL, for masonry works, plaster other miscellaneous items, the cement consumption shall be governed by the "Statement of cement consumption" attached to the DSR-2012 unless otherwise specified in the specifications or the drawing of contract or mutually agreed by engineer-in-charge and the contractor.
- 1.11.1.3 Actual consumption = Issue – Surplus/ unused quantity of cement returned in good condition by the contractor to store. (No sweep cement will be taken back by BHEL).

1.11.2 CEMENT WASTAGE

- 1.11.2.1 Allowable wastage: One and half percent (+1.5%) of theoretical consumption of cement.
- 1.11.2.2 For any material issued by BHEL to the contractor free of cost, and which is not accounted for by the contractor to BHEL, then recovery for such material shall be effected at penal rates

1.11.2.3	Sl no	Cement consumption	Basis of issue & penal recovery
	C-1	Theoretical consumption (without considering any wastage or loss).	Free
	C-2	Actual consumption being Limited to one and half percent (+1.5%) of aforesaid theoretical consumption towards allowable wastage.	Free
	C-3	Actual consumption beyond one and half percent (+1.5%) of above (C-1).	Penal rate

1.11.3 REINFORCEMENT STEEL & MS EARTHING ROD CONSUMPTION.

- 1.11.3.1 The theoretical consumption of various sections and/or diameter of reinforcement and earthing rod steel shall be based on approved construction drawing and bar bending schedule. Weight shall be calculated considering the sectional weights as per Indian standards. No extra cost shall be payable to the contractor for any deviation in weights for the different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.
- 1.11.3.2 Actual consumption = Issue – Surplus.
- 1.11.3.3 Surplus = Un-tampered and unused QTY of steel returned by the contractor to BHEL store along-with relevant documents.
- 1.11.3.4 Wastage = Actual consumption – Theoretical consumption.

1.11.4 REINFORCEMENT STEEL & MS EARTHING ROD WASTAGE

1.11.4.1 ALLOWABLE WASTAGE: - (+3%) of the theoretical consumption shall be considered as allowable wastage.

1.11.4.2	Wastage and scrap shall be as per actual weightment basis.		
	Sl no	Reinforcement steel & MS earthing rod	Basis of issue & penal recovery
	R-1	Theoretical consumption (without considering wastage and scrap or loss)	Free
	R-2	Wastage limited to plus THREE percent (+3%) of aforesaid theoretical consumption (R-1) towards allowable wastage.	Free
R-3	Wastage beyond THREE percent (+3%) of the theoretical consumption above (R-1).	Penal rate	

1.11.5 STRUCTURAL STEEL, (ROLLED SECTION, PLATES ETC.) CONSUMPTION.

1.11.5.1 The theoretical consumption of various sections shall be based on approved drawings. Weights shall be calculated considering the sectional weights as per Indian standard. No extra shall payable to the contractor for any deviation in weights for the two different procedures adopted for issue and calculation of the theoretical consumption including rolling tolerances.

1.11.5.2 Actual consumption = Issue – Surplus.

1.11.5.3 Surplus = UN tempered, unused, uncut quantity of steel returned by the contractor to BHEL store.

1.11.5.4 Wastage = Actual consumption – Theoretical consumption.

1.11.6 STRUCTURAL STEEL WASTAGE

1.11.6.1 **Allowable wastage: - 4% (FOUR percent)** of the theoretical consumption shall be considered. Wastage shall be considered as cut pieces and scrap material, measured as per actual weightment basis. Invisible wastage,if any , shall be considered to be included in the specified 4 % allowable wastage.

1.11.6.2	Sl no	Structural steel including SS plate	Basis of issue & penal recovery
	S-1	Theoretical consumption (without considering any wastage, scrap or loss) as per specification & drg.	Free
	S-2	Wastage limited to plus four percent (+4%) of the aforesaid theoretical consumption (S-1) towards allowable wastage.	Free
	S-3	Wastage beyond four percent (4%) of the aforesaid theoretical consumption (S-1).	Penal rate

1.11.7 All wastage reinforcement, MS round and structural steel shall be returned to BHEL.

1.12 RECONCILIATION OF MATERIALS

1.12.1 The contractor shall submit a reconciliation statement of cement and steel issued to the contractor with each RA Bill.

1.12.2 At the time of submission of bills, the contractor shall properly account for the material issued to him as specified herein to the satisfaction of BHEL certifying that the balance material are available in the contractorr custody at site.

1.12.3 At the time of submission of bills, if it is noticed by BHEL that the wastage is high and calls recovery at the penal rate, then, BHEL will proceed for recovery for the excess wastage as per penal recovery rates as specified.

1.12.4 The reference drawings for actual material consumption to be used for the purpose of reconciliation shall be drawings prepared by the BHEL and drawings approved by BHEL for fabrication works and such other drawings approved by BHEL. This shall also include the bar bending schedule prepared by the contractor and approved by BHEL.

1.13 RECOVERY OF MATERIAL

1.13.1 If wastage exceeds the specified limit, the recovery of excess wastage shall be made from monthly R/A Bill at the Penal Rate.

1.13.2	PENAL RATE OF MATERIALS	
	Item	Penal rate (Rs)
1.13.2.1	Cement (OPC/ PPC/ PSC).	6,500 per MT
1.13.2.2	Reinforcement steel and MS earthing rod etc.	55,000 per MT
1.13.2.3	Structural steel materials.	
1.13.2.3.1	Chqd Plates/ MS plates	60,000 per MT
1.13.2.3.2	Flats/beams/channel/angels etc. (Rolled Sections)	60,000 per MT