

DISMANTLING & RE-CONSTRUCTION OF TUNNEL KILN

A.SCOPE OF WORK

1. TUNNEL KILN REVAMPING:

- a) Dismantling of refractory bricks of tunnel kiln side walls and arch, Sorting of various type of bricks of SK-32, SK-34 & SK-36, shoulder brick, arch bricks, insulation brick & red brick, removal of debris, weighing of the bricks & debris & unloading of the materials from kiln to approx 200 metres away to designated place inside factory premises of approximate 500 MT. Necessary transport facility will be provided by BHEL.
- b) Construction of tunnel kiln side walls and arch as per drawing and Engineer-in charge with setting of kiln primary arch and secondary arch wooden former with scaffolding fixtures, setting of fire box burner arch wooden former with scaffolding fixtures, mixing of mortar, cutting of brick, if required shifting of bricks and mortar from stored area (adjacent to kiln) to construction site of approximate 500 MT.

Note:

1. The work is to be carried out in the plant premises as per the directions of Engineer-in-charge.

2. Bidders may visit the premises and inspect the area of work for ascertaining the nature and extent of work involved before submitted their bids.

3. Tentative date of starting the work may be 1st June'09.

B.SPECIAL TERMS AND CONDITIONS FOR TUNNEL KILN REFRACTORY REVAMPING WORK:

The successful bidder should furnish bar chart within 7 days from date of issuing of the order showing various activities to be carried out with the time schedule.

B.1 A log book to be maintained, wherein daily work progress, weighing of dismantled bricks & debris, instructions, inspection remarks etc. will be recorded.

B.2 The successful contractor will identify himself/his nominated person for selection of correct refractory bricks and bricks to be identified one day prior to the next working day in consultation with Engineer-in charge. A ledger will be maintained to record the stock position of various refractories before starting work on each day.

B.3 Dismantling and Re-construction of the kiln will be done stagewise.

B.3 Inspection & Check Points :

Dimensional tolerances & check points are specified in Annexure-II which will be issued before commencement of construction and should be strictly adhered to. All the check points should be jointly inspected and inspected and recorded, signed by Engineer Incharge & contractor before continuing the work. Daily check points will be adopted to enable checking the course of brick constructed height level, straightness to the plumb, mortar thickness and alignment of the walls laid day to day. Periodic check will be carried out jointly with BHEL.

The arch designated wooden former will be checked as per drawing by BHEL before issuing for construction.

Check points will be selected every four metre apart.

And also during the construction, the following check points to be jointly inspected and recorded, signed by Engineer-in-charge and the contractor before continuing the further work. This forms part of inspection report.

Points to be verified at each check point

- a) Level of rails.
- b) Parallelism of rails.
- c) Height of arch from rail.
- d) Height of tierod above arch.
- e) Distance of side walls from rails.
- f) Side clearance with sample wagon.
- g) Depth of sand seal.
- h) Height of sand seal.
- i) Location of vent, burner, flue, damper, thermo dimensions to be pre-determined along with BHEL-EPD.

Positioning of Tierod and Supports.

The position of tierod and supports with reference to arch and walls will have to be maintained as per drawing.

Deviations.

Deviation, if any during construction shall be rectified as per BHEL-EPD instructions.

B.4 Guarantee:

The party is responsible for bad workmanship for a period of 12 months from the date of commissioning. Security deposit is refundable only after the expiry of guarantee period.

B.5 Penalty:

Completion of the work in time is the essence of this contract. The job has to be completed in 50 days \pm 10 days from the date of commencement. A penalty will be levied at a rate of 10% of contract value per week subjected to a maximum of 50% of the contract value for failing to complete the job within the stipulated time.

C. REFRACTORY REVAMPING WORK:

C.1 CONTRACTOR'S SCOPE:

C.1.1 During dismantling, constant supervision and vigil to be taken to retrieve good refractory bricks.

C.1.2 During construction, the following activities to be carried out:-

- i) Construction to be carried out as per Drgs/instructions given by Engineer-in charge. Special care to be taken to ensure proper brick placement in position.
- ii) Red bricks to be soaked in water for a minimum 4 Hrs to maximum overnight.
- iii) Sand: Cement ratio to be maintained at 4: 2 to construct red bricks wall.
- iv) Refractory mortar to be kept overnight in water before using for laying of refractory bricks.
- v) Base of the dismantled wall to be cleaned so that full surface of the base bricks were visible and then finally washed by water.
- vi) Columns to be cleaned thoroughly and painted with Red oxide before construction.
- vii) 'L' angles also to be cleaned and painted with Red oxide.
- viii) Water curing for red bricks to be done for newly constructed wall for 14 days from the day of construction for proper setting of cement.
- ix) For construction of red bricks, 5-8 mm thick cement to be used and for refractory bricks 1.0 mm to 3.0 mm mortar to be used in between the two bricks.
- x) During construction more than 8-10 layers of brick construction to be avoided at a time.
- xi) During construction, the checks as mentioned above to be followed.
- xii) All checks will be done as per the check sheet prepared by BHEL. The party will stick to the specifications and tolerances given in the check sheet. The copy of check sheet will be given to the party before commencement of construction.
- xiii) The frequency of checks verified at each check point is as under :
 - P.H. Zone - Every two wagon length
 - Hot Zone - Every wagon length
 - Cooling Zone- Every wagon length

Brick work shall be laid with specified mortar to be prepared before construction. Half bricks or cut bricks shall not be used except where needed to complete the bond. Each course shall be perfectly straight in both directions horizontal and transverse. The walls shall be taken up truly to plumb and if battered, the batter is to be truly maintained.

C.2 .SCAFFOLDING:

All the requisite scaffolding fixture for the work shall be provided by the contractor.

C.3 HARDWARE FOR REVAMPING WORK:

All Tools, Tackles, Brick Cutting Blades and Brick Cutting Machine for breaking and laying refractory material during revamping work shall be provided by the contractor.

D.SCOPE OF SUPPLY OF MATERIALS FROM BHEL

D.1 For the purpose of the contract, the following materials will be supplied by BHEL to the contractor. The quantity of issue will be based on the drawings / estimation / assessment of Engineer-in-charge.

1. Ordinary Portland Cement
2. Refractory Bricks & Mortar
3. Red Bricks & Sand
4. Compressed Air and Water
5. Electrical power for fabrication and other uses at site.
6. Wooden Formers for arch construction
7. Transport facility of truck with a driver for shifting of material
8. Canteen facility on chargeable basis
9. Safety Appliances for workmen

D.2 Gatepass for workmen and tools & tackles will be issued by BHEL.

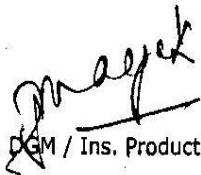
D.3 The materials will be issued from the kiln refractory stores adjacent to kiln area, the contractor shall draw, transport the material to the site, unload and store with proper care as required.

D.4 Water will be supplied at one point from where the contractor needs to make necessary arrangements to draw the water to the construction site.

D.5 The empty cement bags/refractory mortar bag in respect of the cement/mortar issued by the company shall be returned to the company.

D.6 At the time of submission of bill, the contractor shall properly account for the materials issued to him to the satisfaction of Engineer-in-charge and certify that the balance materials supplied is available at the site and will be returned if excess / unused.

Date - 28^h April 2009


Sr. DGM / Ins. Production
BHEL-EPD, Bangalore

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