



## Technical Specification for Drilling of Tube holes in SS-overlaid Tube plates

1. Item: Drilling of tube holes in SS-overlaid forged carbon steel tube plates.
2. Material of construction: SS-overlaid CS Tubeplates

Base Plate: Carbon steel forging to SA 266 Gr. 2

Overlay material: Stainless Steel, SS-304

### 3. Salient Details

S.No.	Identification	Unit	Stage-II
1	Tube plate thickness	mm	195
2	Tube plate diameter	mm	1250
3	No of tube holes		661
4	Tube hole size	mm	25.60 $\pm$ 0.08
5	Tube pitch	mm	33x60° triangular
6	Hole finish	microns	3.2
7	Chamfer of tube holes both form shell side & tube side face		Yes, as per detail X & Y in the drg.
8	Tube holes & tapped hole position/details		As per drg. No. 01681640013 rev 12
9	Estimated weight of undrilled tube plate	Kg	1890
10	Estimated finished weight of tube plate	Kg	1363
11	Quantity	Nos	8 (eight)

4. Scope covers Deburring of all machined edge.

### 5. Protection:

After drilling & inspection tube plate shall be protected by applying light oil based rust preventive.

### 6. Inspection

Each tube plate shall be subjected to inspection by BHEL/BHEL appointed inspection agency and customer(NPCIL) if required.

7. Issue of tube plate by BHEL for drilling at vendors work

- a. Tube plates with SS overlay and face machined condition, shall be issued by BHEL
- b. Each tube plate will have unique PF number as a minimum for identification & co-relation with inspection reports.



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- c. Tube plates shall be issued in the lot of four(4) nos.
- d. Free issue tube plate forging shall be released with 'A' form under CEX rule-4(5)(X).

### 8. **Transportation:**

Vendor to arrange to & fro transportation of tube plates.

### 9. **Delivery schedule:**

Delivery shall be 45 days from the issue of tube plates. This includes transportation time.

- 10. Deduction rate of ED & ST on SWARF shall be as indicated in item material description note.
- 11. Each item of PO shall be weighed (by CRX) before dispatch and this weight shall be mentioned (item wise) in Store Receipt Voucher (SRV).
- 12. Difference in weight of forging & drilled tube plate shall be considered as scrap. Cost of scrap shall be deducted at the prevailing rates which is presently Rs 25/- per kg.
- 13. Payment shall be made on per kg basis. However, if actual weight of drilled tube plate varies from the design weight, the vendors will be paid accordingly subject to a maximum variation in the total payment of  $\pm 3\%$ .
- 14. The weight of the undrilled Tube plate & drilled Tube plate shall be used for the working out of scrap generated during the operation.