

Section I D - SCOPE OF WORK for P91/P92 HEADERS

GENERAL REQUIREMENTS:

1. Vendor must be IBR certified. The vendor shall fabricate Headers, as per BHEL-issued/approved drawings, Quality Plans and Welding Procedures.
2. Welding must be performed by IBR-certified welders. Welding consumables are to be procured from the BHEL approved vendors. Vendor shall create a WPS and get it approved with PQR back up by Welding technology centre of BHEL.
3. All fabrication, inspection, and testing will adhere to relevant quality documents (Customer Quality Plans, Standard Quality Plan, Standard Inspection and testing procedures, Quality Control Procedures). Final IBR Form III-H for Headers will be vendor's scope.
4. The vendor will maintain a history card for the job, including details of any rework performed during the process. Compliance with production guidelines and notes as per the manufacturing GMS is mandatory. Stage wise inspection/certification by IBR/Customer as per requirement to be carried out for header fabrication.

THE JOB DETAILS

5. Inspect the raw materials details & specification by spectrometer. All IBR inspection formalities should be followed.
6. Traceability to be maintained in all Attested/Certified items and cut bits as per QCP.
7. Prepare a Joint Plan and obtain approval from BHEL. While preparing cutting plan for tubes of header stubs, care to be taken to include allowance for welding hydro dummy.
8. All Tooling and Fixtures, Positioners, Rollers shall be arranged by vendor.
9. Mark, Cut & edge prepare the pipes as per approved drawing/Joint plan.
10. Stub Holes near to planned butt joints shall be drilled after InterStage PWHT & NDE clearance of joints as per applicable QPs.
11. Mark and Drill the pipes.
12. Proper Pre-heating, inter-pass temperature and post heating to be maintained with records as per WPS and Quality plans.
13. Ensure pipes are handled without any scoring marks.
14. Positive Material Identification shall be ensured for all materials before welding.

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15. Ensure straightness of short nipples during welding. Avoid distortion during welding.
16. Welding and Inter Stage & Final PWHT for P91/P92/T91/T92 headers and tubes shall be strictly as per Quality plan provided and WPS approved by BHEL.
17. Conduct NDE as per Quality Plan for all weldments after PWHT.
18. Complete all welding before PWHT. Ensure PMI of weldment.
19. PWHT to be carried out as per Quality plan at IBR approved/calibrated furnaces by vendor. Heat treatment charts shall get cleared by IBR.
20. Hardness requirements on weldment and raw materials shall meet quality plan requirements for all materials.
21. NDE clearance post PWHT shall be obtained as per Quality Plans.
22. All headers shall be 100% hydro tested by vendor to the test pressure of 1.5 times the design pressure as per quality plan irrespective of the Note mentioned in the drawing. Raw materials for Hydro dummy blanks for closing the ends of header as per pressure requirement will be issued by BHEL.
23. Any bow in pipe shall be corrected by Mechanical means as per Quality Plan. Hot correction in pipe is not allowed.
24. Witness by IBR/Customer shall be carried out as per requirement.
25. After hydro test, remove the dummy blanks and carryout final machining. Maintain all dimensions as per drawing.
26. Carryout deburring and inside cleaning after final machining. Ensure with boroscopic inspection as per Quality Plan.
27. Final inspection by BHEL QC/IBR/Customer as per Quality Plan.
28. Final Painting as per approved painting scheme. Colour coding on field weld ends, painting as per approved painting scheme to be followed.
29. Put VCI pellets, close the end with end caps and capping channel, provide identification details like Work order, DU, Wt. Hydro details etc., as per Quality Plan. Vendor has to arrange capping channel, plastic ID cups and metallic end covers for closing all open ends before despatch.
30. For all Gr91/Gr92 pipes, write in Paint **“GRADE 91/92 MATERIAL-DO NOT STRIKE ARC” respectively**

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OTHER REQUIREMENTS – TRANSPORTATION, IBR CERTIFICATION, WPS REQUIREMENT

31. Hand over finished job as DTS (Direct to Site) with relevant documents and Vendor has to arrange vehicle to move the job to site. In case of any contingency, vendor has to handover the job at BHEL Trichy Shipping with his own vehicle arrangement.
32. Hand over finished job as DTS with relevant documents. Form III-H for Header is with vendor's scope
33. The vendor must pay IBR inspection fees for the state where manufacturing occurs, except for Tamil Nadu.
34. After making the payment, the vendor must submit a copy of the fee payment letter to BHEL, Trichy, indicating the Heating Surface Area (HSA) of the pressure parts covered by the fees for Re-imburement.
35. Transportation cost for material collection & despatch of finished goods shall be in vendor's scope.
36. Vendor has to arrange materials for establishing WPS (PQR) and NDE Procedures.