

2026OSB068 [SECTION I D]

SCOPE OF WORK FOR RS01-FABRICATION OF BACK PASS EXTENDED FLOOR PANEL

1. General Scope

1. The vendor shall fabricate the Back Pass Extended Floor Panel, in accordance with the relevant BHEL drawings, Quality Plans, Welding Procedure Specifications (WPS), and applicable standards. The completed panel shall be delivered to BHEL after successful completion of all inspections and tests.
 2. All welding shall be carried out only by valid IBR-certified welders using approved welding procedures and BHEL-approved welding consumables.
 3. All fabrication, inspection, testing, and documentation shall comply with the latest revisions of the applicable Quality Control Plans (QCP), Shop Quality Plans (SQP), Shop Inspection Plans (SIP), Customer Quality Plans (CQP), and other relevant BHEL quality documents.
 4. The vendor shall maintain a complete job history card recording all manufacturing stages, inspections, repairs, and rework carried out during fabrication.
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2. Job Details

I. Back Pass Extended Floor Panel Assembly

1. The vendor shall collect all raw materials from the respective BHEL stores in a timely manner.
2. Welding shall be carried out by IBR-qualified welders using BHEL-approved welding consumables.
3. The vendor shall prepare the Welding Procedure Specification (WPS) and Non-Destructive Testing (NDT) procedures and obtain BHEL approval before commencement of production.
4. Raw materials required for WPS qualification, First-Off Trial (FOT), and First-Off Inspection (FOI) shall be arranged by the vendor.
5. All fabrication, inspection, and testing shall comply with the latest revisions of applicable CQP, SQP, SIP, and QCP documents. Preparation of Form III-B shall be under the vendor's scope.
6. BHEL shall provide relevant drawings, GMS, and quality documents.
7. The vendor shall prepare cutting plans for both panels and attachments and submit them to BHEL (OS) for approval before commencing fabrication.

8. The vendor shall verify that all raw materials conform to the relevant drawings and GMS. Any discrepancy shall be immediately reported to BHEL QC and OS for replacement.
9. Proper colour coding and melt number transfer shall be maintained throughout fabrication to ensure complete material traceability.
10. All attachments shall be fabricated strictly as per the respective attachment drawings.
11. All tubes shall undergo shot blasting before fabrication.
12. Tube end cutting and edge preparation shall be carried out strictly as per the drawing requirements (STD TP 062 05 99).
13. First-Off Trials (FOT) shall be established for every combination of tube outside diameter (OD), thickness, material specification, and bend radius. FOT shall be witnessed by BHEL QC/Customer as per SIP PP-12.
14. Opening tubes shall be bent as per the relevant part drawings with an additional allowance of 50 mm at both ends. Edge preparation of these tube ends is not required prior to fixture assembly.
15. Bent tubes shall be arranged in the fabricated fixture as per the assembly drawing and offered for layout and dimensional inspection.

Note: Layout inspection and fixture arrangement shall be witnessed by BHEL QC.

16. Identification markings (Item Number as per Assembly Drawing and the last five digits of the Back Pass Extended Floor Panel Assembly Drawing Number) shall be painted only on the additional tube length provided at the terminal ends.

II. Arrangement of Bent Tubes in Fixture Layout

1. Position and align all bent tubes in the fixture strictly as per the approved BHEL drawings.
 2. Ensure 100% conformity of all bent tubes with the fixture and drawing tolerances.
 3. Maintain tube pitch at both terminal ends as specified in the drawings.
 4. Maintain all dimensions strictly within the tolerances specified in the drawings.
 5. Each compartment shall be securely tightened on all four sides to prevent movement after removal from the fixture.
 6. To compensate for welding shrinkage, the final overall panel length shall be maintained within ± 1.5 mm or as specified in the applicable tolerance drawings.
 7. Tube pitch at both ends of the panel shall be maintained within drawing tolerances.
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IV. General Fabrication Requirements

1. Butt joints are not permitted in Back Pass Extended Floor Panel tubes.
2. A 50 mm additional allowance shall be provided at both ends of all bent tubes.
3. Tube ends need not be edge prepared before arranging the bent tubes in the fixture.
4. Each compartment shall be securely tightened. Profile plates/fins shall be ground and bevelled as specified in the drawings.
5. Profile plates shall be fitted and tack welded with bent and straight tubes as per the assembly drawings. Fins shall be positioned exactly between tube centre lines. Fin fly (warpage) is not acceptable. The latest revision drawings shall be followed.
6. Complete welding shall be carried out as specified in the approved drawings.
7. Fillet weld sizes shall conform to the drawing requirements.
8. Hot correction shall be minimized. Wherever unavoidable, heating parameters shall comply with Table-1 (Hot Correction) of the latest revision of SQP PP-08. Flame heating shall be carried out using a neutral flame without direct contact with the tube surface, and temperature shall be continuously monitored.
9. After fabrication, the additional tube length shall be cut and chamfered while maintaining the final dimensions specified in the drawings.
10. The completed panel shall be offered for final inspection by BHEL QC along with all applicable inspection records.
11. The Contractor shall not proceed with stress relieving (SR) until the panel has been inspected and cleared by BHEL QC.
12. After obtaining clearance from BHEL QC, the panel shall be taken up for stress relieving. Stress relieving shall be carried out either:
 - at a **BHEL approved stress relieving facility**,
 - at **BHEL premises**, wherever the facility is made available by BHEL, at the applicable rate of **Rs. 13.96/kg**.
13. The Contractor shall be fully responsible for ensuring that the panel is handled, transported and stress relieved in a manner that prevents damage, distortion or deterioration of the panel and its components.
14. Any dimensional deviation, distortion, or other non-conformance arising or identified after stress relieving shall be rectified by the Contractor. Rectification shall be carried out using methods acceptable to BHEL QC and in accordance with the applicable drawings, specifications, approved procedures and quality requirements.

15. After completion of rectification, if any, the panel shall again be offered to BHEL QC for re-inspection.
 16. Applicable reference documents shall include the latest revisions of QCP-004, SQP PP-08, SIP PP-12, CQP, and other relevant quality documents.
 17. Hydraulic testing shall be carried out as per SIP PP-04. Any defects identified shall be repaired and the panel retested until acceptance criteria are satisfied.
 18. Air cleaning of all tubes shall be carried out followed by sponge testing using sponge sizes specified in SIP PP-15. Sponge testing shall be witnessed by BHEL QC/Customer. The panel shall be considered finally accepted only after satisfactory completion of all required inspections and obtaining final clearance from BHEL QC.
 19. The completed panel shall be offered for final inspection along with the following documents:
 - Group Certificate
 - RT Reports (if any)
 - FOT Reports
 - PMI Reports
 - LPI Reports
 - Approved WPS
 - Fixture Clearance Report
 - Dimensional Inspection Report
 - Stress Relieving Report
 - Hydro Test Report
 - Weld Map
 20. Painting of the job shall be in vendor scope
 21. After final acceptance, the vendor shall provide VCI pellets inside all tubes, fit plastic ID end caps, and install capping channels at both ends of the panel and hand over to BHEL shipping.
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3. BHEL Scope

1. Supply of tubes and plates for panel shall be under BHEL scope. The vendor shall collect these materials from the designated BHEL stores.