

INDIAN RAILWAYS
PARTICULAR SPECIFICATION

FOR

BOGIE FLY ASH/CEMENT/ALUMINA
WAGON TYPE 'BTFC'

BROAD GAUGE
(1676 MM)

ISSUED BY

RESEARCH DESIGNS AND STANDARDS ORGANISATION
MINISTRY OF RAILWAYS
LUCKNOW - 226 011

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PRICE- /-

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INDIAN RAILWAYS
PARTICULAR SPECIFICATION FOR
BOGIE FLY ASH/CEMENT/ALUMINA WAGON TYPE 'BTFC'
(FITTED WITH BOGIE MOUNTED BRAKE SYSTEM).

1.0 SCOPE

- 1.1 This specification covers the particular requirements for the manufacture and supply of Broad Gauge Bogie Fly Ash/Cement/Alumina Wagon Type 'BTFC' strictly to the relevant drawings of relevant wagon out lined in RDSO index drawing No. WD-19050-S-01 (latest alteration) General Standard Specification No.G -72 (latest revision) and G-111, which can be had from Director General, RDSO, Lucknow 226011. These wagons shall be supplied complete in all respects.
- 1.2 In case of any contradiction in the various clauses of the present specification/drawings , General Standard Specification G-72 (latest revision), G-111 and IS:2825, the most stringent requirement will be applicable.
- 1.3 Latest alteration of all drawings and amendment/revision of all specifications referred to in this specification shall be applicable at the time of manufacturing of wagons, unless otherwise permitted by the Purchaser/Engineers.

2.0 DEFINITIONS

Definition of Purchaser, Engineer, Inspecting officer and Contractor etc. are as per tender document and as defined in General Standard Specification No. G-72 (Latest Rev)

3.0 STANDARD SPECIFICATION

For manufacture of these wagons latest issue of relevant RDSO specifications / IS shall be confirmed unless otherwise specified herein.

4.0 USE OF ALTERNATIVES

Certain alternatives showing different methods of manufacture or use of alternative materials, which are technically permissible, have been indicated. Wherever such alternative use has been permitted, the tenderer must quote separately for the alternatives.

5.0 PARTICULAR REQUIREMENTS

- 5.1. **Leading Particulars of the Wagon:** The wagon shall be equipped with Bogie, Coupler, Draft gear, Air brake system, Air Fludizing discharge system, Barrel and various valves . Details of these components shall be as per relevant drawings detailed in Drg. No. WD-19050-S-01 (latest revision) and G-111 of the tendered design.
- 5.2. **Special Features:** All leading particular of the wagon, details of Barrel, Barrel attachments, Barrel mountings, Operating pressure, Test pressure, Inlet valves, Outlet valves, Loading Unloading method, Properties of commodities to be transported, Special Maintenance Instructions are provided in the relevant drawing of the wagon out lined in RDSO index drawing No.WD-19050-S-01 (latest alteration) and General standard specification no G-111

6.0 WELDING

General requirements and comprehensive guidance with regard to edge preparation, fit up for welding, welding procedure and inspection of welded joints are contained in relevant Clause of General Specification No. G-72 (latest revision) and IS:2825.

7.0 PAINTING AND MARKINGS

7.1 The wagon shall be painted as detailed in relevant Clause of General Standard Specification No.G-72 (Latest Rev).

7.2 The marking on the wagon shall be as indicated in relevant drawings detailed in Drawing No WD-19050-S-01 (latest revision) of the tendered design.

8.0 TESTING OF UNDERFRAME, BARREL & VALVES

8.1 Underframe:

Before proceeding with the regular production of the underframes, the pattern underframe shall be fabricated and offered for inspection and load testing. The underframe shall be inspected and tested for load deflection under gross load and also be tested with 25% overload. Clearances found between the various members of the underframe and the bogies shall be measured under tare, fully loaded, 25% overloaded and unloaded conditions at various locations. The report of the tests shall be submitted to the 'Engineers' through Inspecting Officer.

8.2 Discharge Valve:

Discharge valve shall also be tested in assembled position against leakage.

8.3 Hydraulic Test of Barrel:

The barrel complete with internal fittings after being mounted on the underframe shall be tested hydrostatically to pressure of 3.5 kg/cm² against leakage of longitudinal and circumferential weld seams of the barrel. The joints should not show any sign of leakage when the pressure is maintained for 30 minutes. Caulking to prevent/close the leakage is prohibited. Openings of hatches and safety valve shall be closed by dummy flanges during hydraulic test. Water for the test shall preferably be free of dissolved chlorine.

8.4 Pneumatic Test of Barrel Mountings:

The barrel shall be mounted to the underframe and all barrel fittings shall be mounted on the barrel before the pneumatic test. The pressure inside the barrel shall gradually be increased to 2.05 kg/cm. sq. and the same pressure will be maintained for sufficient length of time to enable a thorough examination to be made against leakage at all the flange joints of the valves and accessories. The pneumatic test can be carried out by filling the entire barrel with air and the pressure raised to the required value. Alternatively, after the hydraulic test, the fittings can be mounted on to the barrel and the barrel drained partially leaving 10% empty space and pneumatic pressure built up to the required value in the empty space.

8.5 Any other tests to be conducted on the pattern underframe, wagons shall be decided by the Inspecting Officer in consultation with the Engineers.

8.6 Any modifications, that may be called for as a result of these tests and inspections, will have to be made free of cost by the Contractor during the bulk production of wagons.

9.0 WARRANTY/ GUARANTEE

9.1 The Contractor shall guarantee the satisfactory performance of the wagons supplied under the contract for a period of 30 months from date of delivery or 24 months from the date of commissioning, whichever is earlier. However, for certain other subassemblies & bought out items, Guarantee periods shall be as specified in their individual specifications. For the items whose guarantee is not specified anywhere, standard provisions as per as per Clause 5 of the G-72 (latest Revision) shall be applicable.

9.2 If during such period any defect appears or if the quality of the material becomes unsatisfactory under conditions of reasonable service and if such defects or deterioration will have been caused by the use of defective design or using unsuitable material or bad workmanship in the manufacture, the Contractor shall arrange to repair and replace, as soon as possible and at the Contractor's own cost (including all transport charges), such replacements or additional materials or parts as are necessary.

9.3 Further should any design modification be required to be made in any part of the equipment, the period of 24 months would commence from the date when the modified part is commissioned in service. However, for certain other sub-assemblies and bought out items, the period of guarantee for replaced part shall be as specified in the individual specification of the item /sub-assembly.

10.0 INSPECTION

10.1 The inspection of the wagon with all its fittings is to be carried out by RDSO Wagon Inspection Directorate as per Quality Assurance Plan duly approved by RDSO and other documents, as applicable. The Wagon Manufacturer will provide all the facilities to the Inspecting Officer.

10.3 In case of dispute between the manufacturer and the inspector regarding the interpretation of any clause/ clauses of this specification, the decisions of the 'Engineers' will be final and binding on the parties..

11.0 DISPUTE REGARDING INTERPRETATION

In case of dispute between the manufacturers and the purchase regarding the interpretation of any clause/clauses of this specification, the decisions of the 'Engineers' will be final and binding on both the parties.