SOUTH CENTRAL RAILWAY

Safety.387/Fly Leaf/02/2026

Fly Leaf No. 02 / 2026

Attention..... All Concerned .....

JOINT INSPECTION OF GLUED JOINTS IN FIELD.
(JPO No. W/506/General/Track/Glued joints/JPO/2025 dated 10.12.2025.)
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Ref : Manual for Glued Insulated Rail Joints (Revised 2024)

i) Para 0.7 in chapter 0 (FOREWORD) is added as under :-

The existing Glued Joints which are not performing satisfactorily may be repaired by in-situ refurbishing of joints to minimise the requirement of new joints and optimize utilization of material in-service. Re-furbished glued joints shall be allowed on track for an extended service period subject to satisfactory performance.

This Manual covers the working methodology, performance parameters and testing regime for workshop manufactured, in-situ re-furbished & in-situ fabricated glued joints.

Refurbishment of existing glued joints and in-situ fabrication of glued joints shall be done by the RDSO approved firms appearing in the latest updated vendor directory for 'Glued Joints' of Track Design Directorate of RDSO. Vendors having necessary infrastructure as mentioned in Chapter 6, can participate in the tenders for the work of refurbishing & in-situ fabrication of glued joints.

ii) New Para 4.2.1 (c) is added as under :-

While inserting the glued joint in track, its length should be decided such that at the stage of its replacement, changing of adjoining rails is avoided. This would avoid the need of additional AT welds. The length of the glued joints may be reduced upto 5.5 m while inserting in the track in order to achieve this objective.

iii) Chapter–5 (Procedure for joint inspection of glued joints in field) is added as under :-

Procedure for joint inspection of glued joints in field.

5.0 General

Glued Joints are required for provision of track circuits. This being part of track, is installed by Engineering Department. Maintenance of glued joints is essential for proper functioning of track circuits. The regular inspection and testing of track

circuits is done by Signal Department. Inspections shall be done jointly as per this joint procedure order. Maintenance and replacement of defective glued joints, is to be done by Engineering Department. To prevent in- service failures, the glued joints shall be inspected jointly by Engineering and Signal Departments at SSE/JE level at least once in three months. This inspection may normally be clubbed with joint inspection of points & crossings.

5.1 FOR NEW GLUED JOINTS:

5.1.1 Some loss in insulation resistance is expected during loading, unloading, transportation and multiple handling at the site before installation. Before installation, the insulation resistance of a new glued joint shall not be less than 10 mega-ohms which is measured using an insulation tester of 100V DC. Insulation should be tested across the end post as well as between fish bolts and the rails on either side of the rails. Good quality insulation tester duly calibrated by appropriate test house shall only be used for measurement of insulation resistance. Measurement of insulation of all glued joints shall be done jointly before installation.

5.1.2 ERC-J clips and end cut liners should be used at glued joints to avoid contact of clips with the fishplates.

5.1.3 Only FTC (Fit for Track Circuiting) sleepers shall be used in track circuited areas. The sleeper spacing under glued joints shall be same as that of intermediate sleepers.

5.1.4 At least 10 sleepers on either side of the glued joints shall be properly packed to the correct level.

5.1.5 Proper squaring of the glued joints shall be ensured. The glued joint shall be centrally located over adjoining sleepers as far as possible.

5.2 INSPECTION AND MAINTENANCE OF IN-SERVICE GLUED JOINTS:

5.2.1 Good quality insulation tester duly calibrated by appropriate test house shall only be used for in-service inspections.

5.2.2 As glued joints should behave as a monolithic unit, there should not be any relative movement between rails and fishplates or separation of rail/fishplate surface and insulation. In case glued joint does not behave as monolithic unit and insulation resistance is not as per Para 5.2.3 below, the same should be replaced on priority.

5.2.3 Insulation of glued joints shall be checked in dry condition at least once in three months (Quarterly). Insulation condition of fish bolts with respect to rails shall be assessed by measuring insulation between fishplate/fish bolt and rail on either side of the joint. If the insulation is found to be less than 1 mega-ohm, it shall be planned for replacement of glued joint within 15 days. However, if the insulation is found to be less than 3 kilo-ohms, it shall be replaced on priority within 3 days.

5.2.4 A faulty glued joint may be checked by taking voltage readings across the track relay terminals. Any change in voltage reading when the adjacent track circuit feed is shunted or disconnected will indicate faulty insulation joints. Reasons for the same should be analyzed and corrective action be taken in such case. Appropriate action shall be taken for replacement of glued joint as per the criteria given in Para 5.2.3 above.

5.2.5 The replacement of glued joints, wherever required, will be done by Engineering Department. The signal staff as required for connection/reconnection and testing shall be provided at site.

5.2.6 Metal overflow/burrs if any, on the rail table at the joints shall be removed skillfully by engineering staff in presence of S&T staff for avoiding any damage to end post so that, ends do not bridge with each other and cause a potential short. It shall also be ensured that during removal of metal overflow/burrs, no dent/notch is formed in the rail.

5.2.7 Any iron flakes or brake-block dust accumulated at the glued joint or on adjacent rails shall be brushed off by S&T staff so as to avoid possibility of electrical conductivity.

5.2.8 The sleepers and fastenings at glued joints shall be ensured in proper and effective condition. Proper elastic rail clips should be used. Any missing/or incorrectly used ERC shall be replaced.

5.2.9 The ballast in track in the vicinity of the glued joints shall be clean to ensure proper packing and efficient drainage. It shall be ensured that the ballast is clear off rails and rail-fastenings. The clearance from the underside of rail to ballast should not be less than 50 mm for the glued joint.

5.2.10 It shall be ensured that spacing of sleepers under glued joints is same as that of intermediate sleepers. End post location shall be centrally placed between two sleepers as far as possible and in no case it should be on the sleeper.

5.2.11 During inspection, glued joints should be closely observed for any loose/broken/missing bolts, fishplate cracks and rail end batter. Suitable corrective action should be taken in time.

5.2.12 Proper records of all joint inspections of glued joints and actions taken there after shall be maintained in registers at station as per system prevailing on Zonal Railways. The record shall be kept in the format enclosed as **Annexure-C** and shall be jointly signed by P. Way and S&T staff/officer.

5.3 Life Cycle of Glued Joints :

(a) Renewal/replacement of glued joints shall be done on condition basis as prescribed in para 702(1) (f) of IRPWM, 2024.

(b) For the purpose of calculating requirement of glued joints for sanction etc. tentative life of glued joints may be taken as:

(i) UIC 60/60E1 rail section with 6 mm thick end post - 400 GMT

(ii) 52 kg rail section with 6 mm thick end post - 200 GMT

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Annexure

JOINT INSPECTION OF GLUD INSULATED JOINTS – (Annexure)
Division / Rly ……..

Station / Yard …….. Glued Joint Serial No. as provided by manufacturer……

Route / Major Section …….. Glued Joint type-60kg/52kg, 6/10 mm thick end post……..

Block Section if any …….. Month & Year of manufacture ……

Line No. …….. Date of laying……

Track Circuit No. …….. Name of manufacturer ……

Location KM / Chainage …….. Purchase Order No. ……

Year of last deep screening. …….. Inspection Certification No. ……

Date of inspection	Glued joint (New/ Old)	Condition of bolts	Condition of insulation material / end posts / whether end post is centrally placed between sleepers	Condition of rail ends Burrs, metal flow etc.	Condition of fittings ERC-J Clip / Glued Joint / Rubber Pad / End Cut GFN Liners etc.	Condition of packing, sleepers, sleeper spacing & squaring	Resistance of Glued Joint measured with the calibrated megger	Signature of SSE / JE P. Way with remarks if any	Signature of SSE / JE Signal with remark if any	Action Taken	Remarks

Sd--/-
CTE / SCR

Sd--/-
CSE–I / SCR

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SAFETY ORGANISATION **SOUTH CENTRAL RAILWAY**

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