



पश्चिम मध्य रेल
West Central Railway

महाप्रबंधक कार्यालय
इंजीनियरिंग विभाग, जबलपुर

General Manager's Office
Engg. Department, Jabalpur

No.: W-HQ/W-4/Track-II/PCE/CIR/4

Date: 28.10.2025

PCE Circular No. 27 / 2025-26

Sub: Inspection and maintenance of Switch Expansion Joints (SEJs).

1. Introduction and Current Scenario

Fractures of Switch Expansion Joints (SEJs) remain a critical area of concern. The detail of the fractures and flaws observed in SEJs in WCR for the last three years is as under:-

Year	SEJ Failures	IMR detected
2023-24	04	70
2024-25	00	79
2025-26 (Upto 23.10.2025)	02	48

While the number of outright SEJ failures is decreasing (as observed WCR data from table above), the detection of Internal Flaws (IMR) identified through USFD (Ultrasonic Flaw Detection) on Improved SEJs (ISEJs) is continuously and significantly on the rise.

This trend necessitates urgent action to both reduce the development of flaws and to enhance non-USFD based detection methods before these flaws lead to catastrophic fractures.

2. Objective

On one hand, there is a need to reduce the development of flaws or cracks in the SEJs and on the other hand, it is also important to detect such flaws in other than USFD testing also before they lead to fractures. For this, proper Inspection of SEJs as per some laid down schedule of Inspection is necessary and the inspecting staff/supervisors/officers should have knowledge about what to look for during their Inspections. Special maintenance efforts required for the SEJs should also be clearly known to the concerned field officials. This technical circular is being issued to reiterate and/or clarify the necessary protocols.

3. Frequency of Inspection of SEJs as per IRPWM

The frequency of inspection of SEJs shall be strictly adhered to as per the Indian Railway Permanent Way Manual (IRPWM), which is as under:

Inspection Authority	Frequency	Condition	IRPWM Reference
ADEN	Once in six months	Preferably in the hottest and coldest months	Para-103 and Item No. 7 of Table-1A (LWRs/SEJs)

Inspection Authority	Frequency	Condition	IRPWM Reference
SSE/P Way (In-charge) and JE/SSE/P.Way (Sectional)	Once in a Fortnight	During the two hottest and two coldest months (on rotation)	Para-109 and Item No. (LWRs/SEJs) 7 of Table-18
	Once in two months	Otherwise (on rotation)	

Note: The hottest and coldest months are to be specified by the DEN/Sr.DEN.

4. Detailed Examination of SEJs in addition to Scheduled inspection as per IRPWM:

A complete, in-depth physical examination and greasing of SEJs must be performed in addition to the scheduled inspections including Special USFD testing of SEJ.

4.1 Schedule and Supervision

- Frequency: Once in Six months on a programmed basis.
- Supervision: Under the supervision of at least JE/P.Way.
- Requirement: This must be done under a traffic block.
- Recording: Entries of such detailed examination of SEJs shall be recorded in the TMS (Track Management System).

These activities should generally be avoided in extremes of both Hot and Cold weather.

4.2 Sequence of Detailed Examination and Lubrication

The examination and lubrication shall be carried out as follows:

- Remove the nuts connecting the brackets to the bearing plates of SEJs.
- Create a gap between the tongue rail and stock rail.
- Clean the rails with a wire brush.
- Examine the tongue rail and stock rail for cracks, if any, by using a magnifying glass.
- Special USFD Testing.
- Grease the interfaces of the tongue rail and stock rail.
- Clean, examine, and grease the interfaces of brackets & tongue rail and brackets & stock rail.
- Reset the tongue rail and stock rail, as per the standard drawing, after replacing the defective/broken/cracked components of the SEJ, if any. Spare components must be kept available during this activity.
- Oil the nuts, connecting the brackets to the bearing plates, and tighten them.

5. USFD Testing of SEJs as per USFD manual:

USFD Testing of SEJs to be ensured as per Para 11.8 of USFD Manual, 2022 (Updated till latest Correction slips).

6. Routine Maintenance of SEJS

All concerned field officials shall ensure the following mandatory maintenance activities are performed:

6.1 Fortnightly Maintenance (SSE/P. Way):

Once in a fortnight, the SEJs shall be checked, packed and aligned if necessary. Oiling and greasing of the tongue and stock rails, and tightening of fastenings shall be done simultaneously (Para 345(6) of IRPWM).

6.2 Daily Patrolling (Keyman):

The Keyman shall keep a special watch on the SEJs falling in his beat during his daily patrolling. He must carry out periodical (fortnightly) oiling and greasing of SEJ, and checking/retightening of fastenings at SEJ and other sleepers, if necessary (Para 116(7)(a) and Para 345(6) of IRPWM).

Digitally Signed by

Ashutosh

(Ashutosh)

Date: 28-10-2023 11:25:14

Principal Chief Engineer

Reason: Approved

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