

सं./No.2017/Track-I(P)/9 (2) Vol III

दिनांक /Date: 10.10.2025

General Manager,  
All Zonal Railways.

**Sub: Frequency of USFD testing on CC+8+2t (22.9t) routes.**

**Ref: (i)** Board letter no. 2019/CE-II/TSC/88/Puri dated 28.08.2020.(Copy enclosed).


**(ii)** Board letter no. 2016/CE-II/TS/2/CC+8+2t dated 13.11.2024.

1. The track structure for operation of CC+8+2t loaded trains with varying speeds was issued vide letter under reference (i). It was highlighted that for operation of CC+8+2t axle load wagons on 52 kg rail, certain actions which inter alia include installation of WILD, detachment of defective wagons, readjustment or detachment of overloaded wagons, carrying out USFD testing at higher frequency, replacement of 52 kg rails on priority etc. were stipulated.
2. Similarly, operation of CC+8+2t axle load primarily on 60kg rails but having very small stretch of 52kg track on new routes was also permitted with similar stipulations.
3. It has, however, been observed that the defect generation rate in 52 kg, 90 UTS rails has increased considerably on routes carrying higher axle loads (CC+8+2t). Accordingly, frequency of USFD testing of rails for all CC+8+2t routes on 52 kg rails, irrespective of temperature zone, was enhanced vide letter under reference (ii).
4. Zonal Railways are therefore advised to ensure compliance with the stipulations mentioned in the letter dated 28.08.2020. Expeditious action shall be taken to replace 52 kg rails with 60 kg rails on these routes.
5. Further, as an interim measure, USFD testing of **AT welds** that have exceeded 50% of their service life on all CC+8+2t routes on 52 kg rails shall be carried out by hand probing at a frequency as indicated below, in addition to the provisions given in para 8.15.2 of the Manual for Ultrasonic Testing of Rails and Welds (Revised - 2022):

Routes	GMT of section	Testing frequency once in (for AT welds that have exceeded 50% of their service life)
CC+8+2 routes on 52 Kg	<10	2 Years
	≥10	1 Year

6. Zonal Railways are advised to take necessary action on the above directions and liquidate the arrears of testing, so as no **AT welds** meeting the above criteria remains untested for more than 1/2 years as per frequency prescribed in the above table.

This is issued with the approval of AM/CE.

  
(Alok Kumar)  
Executive Director/Tr (P&P)  
Railway Board

**Copy to:** PED/Infra-I/RDSO for information and necessary action.

**भारत सरकार (GOVERNMENT OF INDIA)**  
**रेल मंत्रालय (MINISTRY OF RAILWAYS)**  
**रेलवे बोर्ड (RAILWAY BOARD)**

No. 2019/CE-II/TSC/88/Puri

Dated: 28.08.2020

**Principal Chief Engineer,  
All Zonal Railways**

**Sub: Track Structure for operation of CC+8+2t loaded trains.**

**Ref:** i) Item no. 1353 of 88<sup>th</sup> Track Standard Committee held at Puri.  
ii) Board's letter no. 2020/CE-II/TS/22.9 dated 20.08.2020

Based on the recommendations of Track Standard Committee, Board has reviewed the track structure for operation of CC+8+2t loaded trains.

Revised track structure approved by Board for operation of CC+8+2t loaded trains at different speeds along with stipulations for existing track structure on existing and new CC+8+2t routes is given below:

**1. CC+8+2t (22.9t) Axle Load operation at 100 kmph**

**1.1 Track Structure**

SN	Track Component	Specification		
1	Rail	60 kg, 1175 MPa (1175HT Grade)		
2	Sleeper	Minimum RDSO/T - 2496	Higher Version RDSO/T - 8527 (wider sleeper) RDSO/T - 8528 (10mm thick CGRSP)	
3	Rubber pad	RDSO/T - 6618 (6.2mm thick CGRSP)	RDSO/T - 7010 (10mm thick CGRSP)	RDSO/T - 7008
4	GFN liner	RDSO/T-3706	RDSO/T - 6938 & RDSO/T - 6939	RDSO/T - 6938 & RDSO/T - 6939
5	Metal liner	RDSO/T-3740	RDSO/T - 8616 & RDSO/T - 8617	RDSO/T - 8616 & RDSO/T - 8617
6	Fastening (ERC)	RDSO/T-3701 (ERC Mk-III)	RDSO/T - 5919 (ERC Mk-V)	RDSO/T - 5919 (ERC Mk-V)
7	Point & Crossing	1 in 12 turnouts with thick web curved switches & CMS crossings with gapless joints for 60kg rail section		
8	SEJ	Improved SEJs		
9	Welding	FBW/ ATW		
10	Ballast	Minimum 300 mm ballast depth with 150mm clean cushion  Recommended 350 mm ballast depth of hard stone machine crushed ballast out of which 200 mm clean cushion. Ballast should conform to "SPECIFICATIONS FOR TRACK BALLAST" IRS-GE-1, June 2016 of RDSO.		

*[Signature]*  
28.8.20

SN	Track Component	Specification
11	Subgrade and formation	<p><b>New Formation –</b></p> <ol style="list-style-type: none"> <li>Formation for 22.9t &amp; 25t axle load should conform to the formation specification for 25t axle load as per the Specification No. RDSO/2018/GE: IRS – 0004 (D) Part – IV, July 2019 on 'Rationalisation of formation layer thickness on IR Track' and its amendment from time to time.</li> <li>Formation width should be 7.85 m for BG single line and 13.16 m for double line.</li> </ol>

1.2 Installation of WILD such that every rake on the route passes through it, followed with attending/detaching the defective vehicle as required, without fail, and installation of Weigh bridges at the loading point and compulsory weighing of every rake followed with action for load correction/detachment of vehicle as required, without fail, as per the existing JPOs on WILD and Weigh bridge will have to be ensured. Corridor block and assured Maintenance block along with availability of adequate number of track machine for Deep screening and Rail grinding of the entire route as per stipulated frequency will have to be ensured. Adequate powering of the rakes will be required such that damage to rail on account of under powering is prevented.

## 2. Operation of CC+8+2t (22.9t) axle load on existing routes and existing track structure

### 2.1 Track Structure - 60 Kg 90 UTS rail/ 1660 PSC Sleeper per Km

2.1.1 22.9 t operation would be continued at 60 kmph and measures related to WILD, Weigh bridge, Deep screening, Rail grinding, Traffic block and adequate powering, as brought out in para 1.2 above, would be implemented in right earnest.

2.1.2 For operation of 22.9 ton axle load wagons at 75 Kmph, action advised vide Board's letter under reference (ii) above to be taken by Zonal Railways.

### 2.2 Track Structure – 52 Kg 90 UTS Rail / 1540 PSC Sleeper per Km

52Kg track structure is inadequate for operation of 22.9 t axle load wagons. However, at present 22.9t axle load wagons are operating on 52 kg track at 60 kmph. The following action would be taken. . .

2.2.1 A thorough review of the routes on which CC+8+2 operation is permitted would be taken up.

2.2.2 Operation of CC+8+2 on routes falling in Temperature zone IV (mainly, NR, NWR, NCR, NER, WCR) and Zone III (mainly, WR, CR, SECR, ECR, ER, NFR) may be continued on routes having predominantly 52Kg track structure with the following conditions:

- (i) Issues of WILD, Weigh bridge, Deep screening, Rail grinding, Traffic block and Adequate powering, as brought out in para 1.2 above, would be addressed at the earliest. A time frame would be decided urgently for implementation of these measures.
- (ii) Track renewal would be carried out on priority to provide 60 kg track structure within a time frame.
- (iii) De-stressing temperature in Temperature zone IV would be reduced by 5° C (Tm to Tm+5).
- (iv) USFD testing would be carried out at a higher frequency corresponding to 6 GMT of traffic (present stipulation corresponds to 8 GMT).

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2.2.3 Routes in temperature zone IV and III which are having predominantly 60 kg track structure may be continued to have CC+8+2 operations. However, conditions given in Para 2.2.2 (i) to (iv) would be applicable, wherever 52 kg track structure exists on these routes.

2.2.4 On routes in Temperature Zones II and I, 22.9 t operation may be continued at 60 kmph. However, measures related to WILD, Weigh bridge, Deep screening, Rail grinding, Traffic block and Adequate powering, as brought out in para 1.2 above, would be implemented in right earnest. Track renewal to 60 Kg track structure would be planned as per the extant provisions of IRPWM.

### **3 Operation CC+8+2t (22.9t) axle load on new routes**

3.1 A thorough review would be undertaken of the route on which CC+8+2 operation is to be permitted.

3.2 It would be desirable that these routes are made compliant to the requirements of Para 1 above.

3.3 However, operation may also be permitted on those routes which are having 60 kg track structure. Measures related to WILD, Weigh bridge, Deep screening, Rail grinding, Traffic block and Adequate powering, as brought out in para 1.2 above, must be comprehensively addressed before permitting operation of 22.9 t axle load on new routes.

3.4 22.9 t operation may also be permitted on those routes which are having very small stretches of 52 kg track. However, Track renewal work for up-gradation of such stretches to 60 kg track will be required to be sanctioned and a time frame for its execution decided before permitting the operation. While permitting operation on 52 kg track, level of risk to passenger operation must be taken into consideration based on the speed of passenger trains and number of such trains on the particular route.

3.5 Speed of operation would be decided as per Para 1 and 2 above.

4 Review of operation of 22.9 t axle load, as recommended in para 2 and 3 above, would be undertaken by Zonal Railways based on revised norms duly involving Civil, Mechanical and Traffic departments as per requirement.

This will supersede all instructions related to track structure and permissible speed on existing and new CC+8+2t loading routes.

  
(Pradeep Nagar)  
Director Civil Engg. (Planning)  
Railway Board

Copy to : ED/Track-I/RDSO for Information pl.