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No.: W-HQ/W-4/Track-II/PCE/CIR/4 **Date:** 16.06.2025

PCE Circular No. 26 / 2025-26

Sub: Maintenance of track in Sharp Curves (radius less than 600m), Ghat Sections, and Sections having curve sharper than 5° on gradient steeper than 1 in 100.

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Indian Railways Permanent Way Manual (IRPWM) and various other instructions, stipulate provisions for maintenance of all types of track geometry. However, track maintenance in Sharp Curves (radius less than 600m), Ghat Sections, and Sections having curve sharper than 5° on gradient steeper than 1 in 100 remains particularly challenging and demands enhanced attention in terms of inspection, maintenance inputs, and renewals. To improve track safety in these areas, following steps should be implemented in the field:

1. To avoid fast wearing of rails and smooth Rail-Wheel interaction, track mounted Automatic Gauge Face Lubricators (GFL) should be installed for greasing of gauge face of outer rail of curves as per Para 424 of IRPWM-2024. Till automatic GFL are installed, hand lubrication in curves should be done on all curves (irrespective of gradients) positively as per following schedule:
   (i) ≤ 3° - once in 15 days
   (ii) > 3°and ≤ 5° - once in 07 days
   (iii) > 5° - once in 03 days
2. In sections having curves sharper than 5° on gradients steeper than 1 in 100, measurement of track parameters (gauge, cross-level & twist) at every 5th sleeper should be carried out once in a month, preferably with recordable and GPS-enabled Track Measuring Trolley. Records of measurements should be kept safely for at least one year. The records to be countersigned by SSE/P.Way(In-charge) and ADEN during their field inspections.
3. To have stringent control over rail wear, lateral & vertical wear in curves having radius of 600 m or less should be measured for wear once in 3 months. Record of measurements should be entered in TMS. All such locations warranting premature renewal of rails on account of wear, should be processed for corrective action, including rail renewal.
4. The possibility of having same maximum permissible speeds for both passenger and goods trains may be explored on curves sharper than 5° with gradients steeper than 1 in 100. This would enable providing equilibrium cant (super- elevation) in curves thereby minimizing the lateral wear in rail.
5. In entire section, a strict 'Zero Missing Fittings' regime must be maintained at all times. Keymen working in the section should be sensitized properly and instructed to inform about missing fittings on daily basis. On receiving a report, missing fittings should be recouped on the same or next day.

6. Close watch should be kept on the available toe load of ERCs to ensure minimum 600 kg. The frequency of toe load measurement as stipulated in Para 628(1) of IRPWM-2024 should be strictly followed and recorded in TMS.
7. There should be no overdue track renewals in these sections. All sanctioned track renewal works must be executed on priority.
8. Need for check rail on curves milder than 8° may be examined. The check rail clearances should be measured once in a month along with measurement of track parameters as stipulated in para 2 above.
9. To reduce the wear on outer rail on the curve, slack gauge sleepers should invariably be provided in curves having curvature above 5° as prescribed in Para 424(1)(d) of IRPWM- 2024.
10. Rail creep shall be measured at every kilometre once a month and proper records must be maintained. The frequency of measurement may be increased by the concerned Sr.DEN/DEN depending on the incidence and severity of creep in the section. These records shall be scrutinized by the Sr.DEN/DEN during their trolley inspections to assess the effectiveness of corrective actions.
11. Based on the condition of rail joints, fish bolts, and overall creep behaviour, necessary action such as pulling back of creep and adjustment of joint gaps shall be carried out promptly to ensure proper rail expansion and joint integrity.
12. In Ghat section having curves sharper than 5° on gradients steeper than 1 in 100, the renewal of GRSP/CGRSP shall be carried out after completing 50% of the stipulated life applicable to plain track, as stipulated in the Note under Para 718 of IRPWM. Field units shall monitor the condition of rubber pads in these critical sections closely and plan renewal accordingly.
13. In non-track-circuited areas in locations of Ghat sections mentioned above, extra rib depth metal liners (RDSO/T-8995) should be used throughout. In track-circuited areas, extra rib depth HVN liners (RDSO/T-8992) should be used in place of GFN liners.
14. Consistent and correct sleeper spacing shall be ensured during both maintenance and track renewal works.
15. It must be ensured that the cess is maintained to prescribed standards and there should be no locations with low or deficient cess. Special attention shall be given to approaches of bridges, where wider cess is essential to ensure stability and proper drainage.
16. Adequate ballast cushion must be maintained throughout, with no deficiency permitted, to ensure proper track geometry, drainage, and long-term track performance.

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