तेज वक्र पर विस्तृत गेज स्लीपरों और चैक रेल का प्रावधान
Provision of wide gauge sleepers and check rails on sharp curves

1. परिचय / Introduction

There is no uniform practice being followed for laying wide gauge sleepers on curves and check rail special sleepers for sharp curves.

The minimum clearance required to permit the vehicles to negotiate a curve with free curving motion depends on the maximum rigid wheel base and the degree of curve for a particular track gauge. Over and above the minimum clearance, it is desirable to have additional clearance to cater to the angularity assumed by the wheel set while negotiating the curve. Gauge widening becomes necessary when the requirement of the clearance exceeds the standard play.

Check rails should be provided on sharp curves. It reduce the risk of derailment on the sharp curves.

2. कोड प्रावधान / Codal Provision

For BG curved track regarding gauge and check rails are summarized below:-

2.1 घुमाव पर गेज / Gauge On Curves

The gauge on curve shall be to the following standards : –

1) As per Para 403 of IRPWM, on new lines and on lines where complete renewal or through sleeper renewal is carried out, the track should be laid to the following standards : –

Radius in meters	Gauge
Broad Gauge (1676 mm)	
i. Straight including curves of radius up to 350 m and more	-5 mm to+3mm
ii. For curves of radius less than 350 m	Up to +10 mm

2) As per Para 224 of IRPWM, it is good practice to work within the following tolerances of gauge, provided generally uniform gauge can be maintained over long lengths:

Broad Gauge (1676 mm)	
i. On straight	-6 mm to + 6 mm
ii. On curves with radius 350 m or more	-6 mm to +15 mm
iii. On curves with radius less than 350 m	Up to + 20 mm

3) By incorporating above instructions of the IRPWM, following guidelines shall be followed for provision of ordinary/wide gauge sleepers with or without check rails on various curves:-

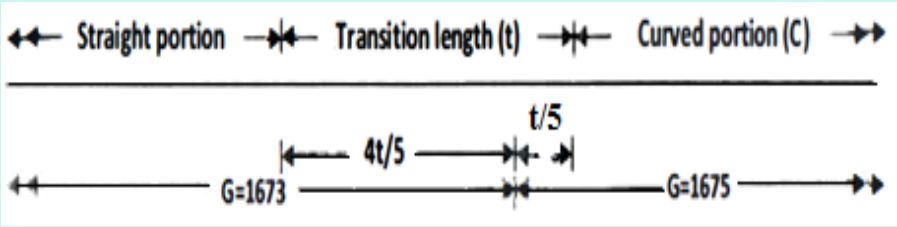
i. Ordinary PSC sleepers with 1673 mm gauge shall be provided on curves up to 4°.

ii. For curves sharper than 4° and up to 5°, up to 6 mm slack gauge (1679 mm) PSC sleepers to Drawing No . RT-4170 to RT-4172 should be used on pro-rata basis on circular portion. i.e. for curves sharper than 4° and

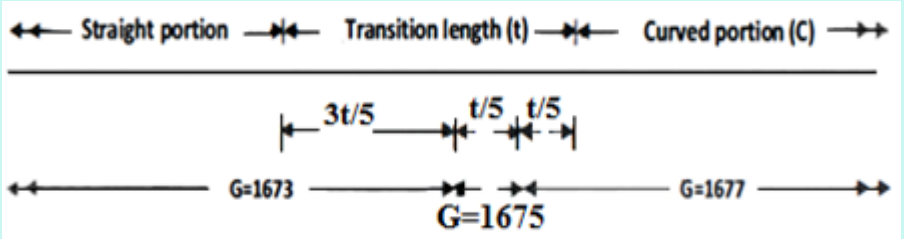
up to 4.33°. 2 mm slack gauge sleepers as per Drawing No. RT-4170 (2 mm slack) for curves sharper than 4.33° and up to 4.67°, 4 mm slack gauge sleepers as per Drawing No. RT-4171 (4 mm slack) for curves sharper than 4.67° and up to 5°, 6mm slack gauge sleepers as per Drawing No. RT-4172 (6mm slack) should be used on circular portion of curve.

4) वक्र के विभिन्न त्रिज्या पर स्लैक गेज स्लीपर प्रदान करने के लिए व्यवस्था / Arrangement for Providing Slack Gauge Sleepers on various Radius of Curves.

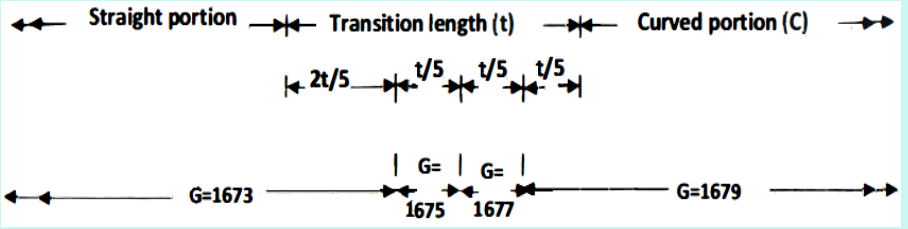
i. The arrangement for providing 2 mm slack gauge sleepers on transition and circular portions of curves sharper than 4° and up to 4.33° should be as shown below:-



ii. The arrangement for providing up to 4 mm slack gauge sleepers on transition and circular portions of curves sharper than 4.33° and up to 4.67° should be as shown below:-



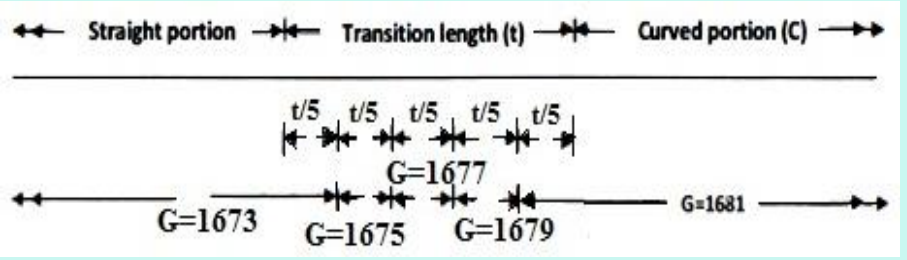
iii. The arrangement for providing 6 mm slack gauge sleepers on transition and circular portions of curves sharper than 4.67° and up to 5° should be as shown below:-



The gauge shall be increased from normal 1673 mm to 1679 mm in steps of 2 mm. The transition length shall be divided into 5 equal parts as shown above.

iv. For curves sharper than 5^0 but less that 6^0, 8 mm slack gauge (1681 mm) PSC sleepers to Drawing no. RT-4173 (without check rail) should be used on circular portion.

The arrangement for providing slack gauge sleepers on curves sharper than 5° but less than 6° is shown below:



The gauge shall be increased from normal 1673 mm to 1681 mm in steps of 2 mm. The transition length shall be divided into five equal parts as shown above.

2.2 वक्र पर चेक रेल / Check rails on curves

As per Para 426 of IRPWM, Check rails should be provided on the inside of the inner rail of the curve as stipulated in the schedule of dimensions.

Check rails should be provided on all curves of 6^0 and above. For curves, where check rails have to be provided drawing No. RDSO/T-4183 to 4186 suitable for 60 kg running rail with 52 kg check rail should be used. Wherever 52 kg running rail are existing, then check rail should be 90 R rail.

The arrangement for providing slack gauge sleepers on such curves should be same as per Para 4) iv above, however, Drawing No. RDSO/T-4183 to 4186, to be adopted.

As per Sr. No. 4 of Chapter - I of SOD,
Minimum clearance of check rails for a curve - 44 mm
Note:
•This clearance must be increased by not less than half the amount of any difference between 1676 mm and the gauge to which the curve is actually laid.
•Check rails to be provided in curves where the radius is 218 meters or less *i.e.* curvature is 8° or more. They may be necessary also in the case of flatter curves, if high speed is contemplated.

हमारा उद्देश्य /OUR OBJECTIVE

To upgrade maintenance technologies and methodologies and achieve improvements in productivity and performance of all railway assets and manpower which inter alia would cover reliability, availability for use, utilisation and efficiency.

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अअमा सं RDSO रेल अग्रदूत Transforming Railways

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