

**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
(RAILWAY BOARD)**

सं.: 2017/CE-IV/ROB /164 (Policy)

दिनांक: 16.02.2021

- 1) General Managers,  
All Zonal Railways
- 2) General Manager (Construction),  
N.F. Railway

*M. Sridhar Rao*

**विषय:** Skew angles to be adopted in the Road Over Bridges (ROBs)

1. Demands for design of Road Over Bridges (ROBs) with skew angles are received by Zonal Railways due to site conditions. It may be noted that skew girders are subjected to torsional loads as well as extra bending moments on the obtuse corner. The acute corners are subjected to uplift as a result of the asymmetry of the load due to the skew girders. Larger skew angles are not desirable as capturing the proper behaviour of girder at larger skew angles is very difficult. Providing sufficient torsional restraint is also difficult. Therefore, efforts shall be made to get the square alignment, if possible, or to reduce skew angles to minimum.
2. Clause 105.3.3 of IRC:5-2015 mentions that skew angles in any bridge should preferably not exceed 30°. Hence Zonal Railways should ensure that skew angles in the ROBs should be within 30°.
3. In case it is not possible to keep the skew angle within 30° due to typical site conditions, then following should be followed:
  - (a) For skew angle beyond 30° and up to 45°: Chief Bridge Engineer (CBE) of Zonal Railway is competent authority to approve after considering all relevant site and design factors. Concerning road project executing authority (NHAI, PWD, etc.) should submit proposal with relevant site and design details. CBE may grant approval recording the reasons for the same.
  - (b) For skew angle beyond 45°: In exceptional circumstances if skew angle beyond 45° is required, approval of Railway Board should be taken.

*O. N. Sharma*  
16/2/22

(O. N. Sharma)

Director Civil Engg. (B&S)

**प्रतिलिपि:**

1. Chairman/NHAI for information.
2. DG/MoRTH for information.
3. PED/Bridge, RDSO for information.
4. PCE, All Zonal Railways for information and necessary action.
5. CAO/Con, All Zonal Railways for information and necessary action.
6. CMD/RVNL, DFCCIL, IRCON, MRVC, KRCL, RITES.