

Request for Feedback on IRC-81 and IRC-115

Indian Roads Congress H-2 committee on Flexible Pavement and Airfields & Runways is in the process of revising IRC:81-1997 (Guidelines for Strengthening of Flexible Road Pavements using Benkelman Beam Deflection Technique) and IRC:115-2014 (Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements using Falling Weight Deflectometer).

If you have any opinion/suggestion/data to share on any of the following points, please send your feedback to irc115fwd@gmail.com & tc.irc@gov.in

1. Comparison of deflections measured using falling weight deflectometer (FWD) and Benkelman beam (BBD) on the same road section?
2. Comparison of the deflections (FWD or BBD) measured periodically (at different times) on the same road section
3. Comparison of the FWD or BBD deflections measured on the overlaid section of original pavement and the widening portion (in widening projects)
4. Comparison of the FWD or BBD deflections measured before and after overlay on the same section of road?
5. For pavement sections evaluated using FWD or BBD, do you have any layer properties (resilient modulus or indirect tensile strength or volumetric properties or Marshall properties of cores of bituminous layers taken from field, lab CBR values of subgrade layer or other granular layers collected from the pavement measured at in-situ dry densities or DCP values, etc)?
6. Experience with FWD or BBD survey on different types of pavements: conventional bituminous pavements, bituminous pavements with cement treated bases and subbases, bituminous pavements with emulsion, foam bitumen treated aggregate/RAP bases, main carriageways and service roads? Any experience with structural evaluation of existing pavements before overlay, overlaid pavements immediately after construction and after months/years of traffic? Any special trends noted in deflection data or backcalculated moduli?
7. Experience with structural evaluation on pavements with different types of bituminous mixes including SMA, GGRB, etc
8. Your experience with other backcalculation softwares in comparison with KGPBACK
9. Any specific issues with the FWD equipment (a) limitations (b) calibration as mandated in IRC:115 (c) availability of equipment (d) availability of expertise to conduct tests and interpret data (e) degree of compliance with IRC:115 in terms of calibration of FWD
10. Difficulties, if any, encountered while conducting FWD or BBD survey due to site specific conditions such as surface condition (rutted or cracked surfaces, uneven surfaces, milled surfaces), longitudinal or transverse slopes, superelevated sections, approaches etc
11. Data on the variation of FWD or BBD surface deflections measured at the same location at different times of the day (with corresponding pavement temperature

or air temperatures) so that temperature correction models given in IRC:81 and IRC:115 can be validated

12. The necessity or otherwise of collecting surface distress data which are currently being used to identify uniform sections based on which spacing for deflection measurement. Comment on the need for collecting the surface distress data and how the data is currently being used along with BBD or FWD deflection data. Is there any need for collection of additional data such as roughness?
13. Your comment on the current recommendations in IRC:81 and IRC:115 for selection of spacing or sample size for deflection measurement.
14. Any need for revising the ranges of layer moduli suggested in IRC:115 for backcalculation?
15. Your comment on the current recommendations in IRC:81 and IRC:115 for pooling the deflection/backcalculated moduli measured on different lanes of multi-lane carriageways, for analysis and overlay design
16. Are the recommendations of IRC:81 and IRC:115 about calibration of BBD and FWD complied with routinely?
17. Are subgrade soil samples being collected alongwith field moisture contents for FWD survey also (In IRC:81, field moisture content and soil classification are required for moisture correction)?
18. Any specific suggestions for recommendations on safety measures to be taken during the survey?
19. What is the current practice of identifying homogeneous sections? Is it as per the recommendations of IRC:115?
20. What is the reasonable spacing for excavation of test pits, collection of samples from pavement layers for pavements being evaluated using FWD or BBD and how this information (alongwith deflection measurements) should be used for remaining life estimation, identification of sections for reconstruction, pre-overlay repair and overlay design?
21. Any other item on which you want share your feedback?