

PENNDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Application Division



FBLRFD

No. 003
August 8, 2011

Release of Version 1.3.0.0

The Department's Floorbeam Analysis and Rating Program (FBLRFD) has been revised as described on the attached Summary of July 2011 Revisions – Version 1.3.0.0.

The new program has been placed on PENNDOT servers for use by the Districts. Consultants and others, who have a current license agreement for FBLRFD Version 1.2.0.0, can obtain the updated version for a license update fee of \$500 for private organizations and \$50 for local governmental agencies and educational institutions. Updates for FBLRFD Version 1.1.0.0 and 1.0a require an additional fee documented on the FBLRFD update fee details page (<http://penndot.engrprograms.com/home/Ordering/FBLRFD.htm>). No update fee is required for Federal and State Transportation Agencies. The forms for Software Update Request and Request for PennDOT's Engineering Software License can be downloaded from the web site at <http://penndot.engrprograms.com>.

Please direct any questions concerning the above to:

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Attachment

Archived copies of all previously distributed e-Notifications can be obtained from the PENNDOT LRFD and Engineering Programs website at <http://penndot.engrprograms.com/home> and clicking on "e-Notification" and then "Mailing List Archives."

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SUMMARY OF JULY 2011 REVISIONS - VERSION 1.3.0.0

Since the release of FBLRFD Version 1.2.0.0 several revision requests and user requested enhancements have been received. This release of FBLRFD Version 1.3.0.0 contains the following revisions and enhancements.

Specification Related Revisions

1. The Service Limit State Control of Permanent Deflection output table has been revised to report the results in terms of stress. Previously, this table reported the results in terms of moment. In addition, the flexural ratings for service limit states are now computed in terms of stress (Request 233).
2. The effective slab width calculation has been updated to the 2008 AASHTO Interims Article 4.6.2.6.5. (Request 279).

Input Revisions

3. A separate input parameter for the dynamic load allowance applied to the P-82 vehicle is now available on the CTL command (Request 073).
4. The TK527 vehicle is now included for several live load codes for analysis and rating (Request 097).
5. As a result of a decision by the AASHTO Subcommittee on Bridges and Structures to no longer publish SI unit specifications, the program only supports US customary (US) units. The only acceptable entry for the CTL command parameter 1, System of Units, is "US" (Request 283).
6. The input consistency checking now allows the user to enter a sidewalk on only side of the bridge. However, if the user enters a distance to one side of the sidewalk, they must enter the distances to both sides of the same sidewalk. For example, if a user enters LEFT SIDEWALK LEFT EDGE (parameter 9 on the GEO command), they must also enter LEFT SIDEWALK RIGHT EDGE (parameter 10). Parameter 10 cannot be left blank (Request 123).
7. If a floorbeam has no overhangs, it must be entered with the TYPE OF SUPPORT (CTL command) set to type "S", simple span with or without applied moments at the ends and no overhangs (Request 131).
8. Trapezoidal distributed loads are now mirrored correctly for symmetrical floorbeams (Request 240).
9. If a floorbeam has overhangs, it now must be entered with the TYPE OF SUPPORT set to "C" or "O" (Request 269).
10. The Engineering Assistant configuration files have been modified to only allow a single bearing

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stiffener location to be defined per BST record, and the number of BST records that can be defined has been revised from 41 to 42. Previously, two bearing stiffener locations could be entered per record, but FBLRFD could only accept one location per record (Request 289).

Output Revisions

11. Pedestrian live load effects will no longer print for a sidewalk if no pedestrian live load is defined on the sidewalk (Request 074).
12. FBLRFD will now produce PDF versions of all output in addition to the text-only files (Request 278).
13. If the governing rating location is on the left overhang, the governing ratings will now print on the RATING FACTORS - SUMMARY output reports. Previously, governing ratings that occurred at a negative distance (left of the left support) would not print in the program output (Request 281).

Girder Analysis/Design Revisions

14. The definition of analysis points has been changed to use a fraction of the span length, rather than adding a fixed value on to each analysis point. This helps to avoid rounding issues in the definition of the analysis points (Request 121).
15. The brace point calculation has been modified to avoid rounding errors that could lead to a program crash (Request 192).
16. If, due to floorbeam geometry, there are no points of dead load contraflexure on the floorbeam, the program will now define effective points of contraflexure at the mid-length of the floorbeam, if the user has not entered them via the ECP command. These effective points of contraflexure are only used to define the shear connector design ranges (Request 265).

Documentation Revisions

17. The User's Manual has been revised for the Stringer Dead Load (SDL) command to reflect that FBLRFD will allow up to 100 stringer dead loads to be defined and that all parameters must be repeated when repeating the command (Request 119).
18. An additional footnote has been added to the "Range" shown in the figure for Parameter 1 of the APL command. The footnote defines the minimum range distance between a floorbeam section change (Request 291).
19. User Manual Section 6.5.5 has been added to show examples of the bridge cross section for each of the CTL command, Type of Support, S, C and O (Request 293).

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Programming Revisions

20. The program has been updated to work with Visual Studio 2008 and Intel Fortran version 11.1.067 (Request 287).
21. The program has been revised for a situation where multiple rolled beams (of different sizes) would cause the program to terminate without a successful analysis (Request 293).