

PennDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Applications Division



PSLRFD

No. 009
July 19, 2010

Release of Version 2.4.0.0

The Department's LRFD Prestressed Concrete Girder Design and Rating (PSLRFD) program has been revised as described in the attached "Summary of May 2010 Revisions – Version 2.4.0.0".

The new program has been placed on PennDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **PSLRFD Version 2.3.0.0**, can obtain the updated version by submitting an Update Request form along with the **update fee of \$500 for private organizations and \$50 for governmental agencies**. Updates for **PSLRFD Version 2.2.0.0 or earlier** will require an **additional fee**. For PSLRFD update fee details, refer to the following link: <http://penndot.engrprograms.com/home/Ordering/PSLRFD.htm>. The update fee is waived for federal and state transportation agencies.

The Software Update Request form can be obtained on the PennDOT Engineering Software Support website at <http://penndot.engrprograms.com> by clicking on "Ordering/Updating" and, then on "Update Form".

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."

SUMMARY OF MAY 2010 REVISIONS - VERSION 2.4.0.0

Since the release of PSLRFD Version 2.3.0.0 several revision requests and user requested enhancements have been received. This release of PSLRFD Version 2.4.0.0 contains the following revisions and enhancements.

Input Revisions

1. An input check has been added for the Support Distance parameters of the SKW command requiring a minimum distance of the input beam projection plus 1/8" for interior supports. This will provide a minimum 1/4" gap between the beam ends. Previously, the support distances could be equal to the beam projection and for some debonded examples incorrect debonded strand data was reported. An additional check was added for the Support Distance parameters to provide a minimum 4" gap between beam ends at an interior support in accordance with BD Standards. Violation of this check will only result in a warning and the program will continue execution using the input support distances. (Request 395)
2. The program has been revised to avoid a program crash and stack dump caused by a larger number of diaphragm loads and concentrated loads occurring in a single span. Previously, an example with 14 diaphragm loads and 6 concentrated loads would result in a stack dump. (Request 380)
3. The program has been enhanced to allow up to 5 special live loads to be entered in a single run. The input commands SLL and SAL now includes "Special LL Number" as the first parameter. Any existing input files that use SLL and SAL commands will need to be modified. (Request 143)
4. The program has been enhanced to allow each parameter of a command to be processed when a previous parameter had an error. Previously, when an error was detected for a parameter the remaining parameters were skipped. Multiple runs were required to detect other parameters with errors on the same command. (Request 359)

Output Revisions

5. The program has been revised to correctly identify the regions where shear rating are not computed. Previously, locations were identified as interior supports even for single span runs. (Request 400)
6. The program has been revised to apply the user entered MC2 load factors to MC2 loads. Previously, the DC load factors were being applied to the MC2 loads. (Request 369)
7. The program has been enhanced to provide a PDF output file in addition to the text output file. When possible, the PDF file contains bookmarks for easier navigation of the output. The PDF file also makes it easier to print and paginate the program output. (Request 398)

8. The program has been revised to use the larger of the two C.G.S. values when computing the positive moment connection steel at an interior support with equal beam depths. Previously, unsymmetrical positive moment connection steel was designed for a 3-span symmetric bridge. (Request 154)

Distribution Factor Revisions

9. The program has been verified to be using the correct multiple presence factor when computing deflection distribution factors for bridges that include sidewalks. (Request 392)
10. The program has been modified to consider the violated $d(e)$ limits when computing the distribution factors for fascia beams for both 1) bridges with no sidewalks and 2) bridges with sidewalks investigated for the sidewalk not present. Previously, the case of bridge with no sidewalks was not considering the violated $d(e)$ limits when computing the distribution factors. (Request 372)
11. The program has been modified to apply the correct distribution factor to positive moments located between the point of contraflexure and interior supports for the live load analysis with the sidewalk present. Previously, the DF2 distribution factor was being used rather than the DF1 distribution factor. (Request 303)

Specification Revisions

12. The program has been revised to use the simplified effective slab width from AASHTO 2008 Interims Article 4.6.2.6. Implementation of the simplified effective slab width has made the ECP (Effective Contraflexure Points) command unnecessary and is now ignored. (Requests 399)
13. 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. (Request 403)
14. The program has been updated to use the final version of CBA 3.6.0.0. (Request 391)

Debonding Revisions

15. The debonding design algorithm has been revised to allow a reduced inflated allowable to be tried before forcing strands to be added when the current trial fails because the cutoff length exceeds the maximum allowed. Previously, the debonding design would fail or require a large number of strands. (Requests 246, 247)

User Manual Revisions

16. The Revision Request Page of the User Manual has been revised to the current names of the Bureau, Division and Section organizations to be contacted for requests about the program. (Request 388)

17. The User Manual has been updated to include equations from the PS3 User manual for computing the uniform dead load from formwork. (Request 229)

18. The ECP (effective Contraflexure Points) command has been removed from the User Manual since it is unnecessary with implementation of the simplified effective slab width. (Request 399)