

PennDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Applications Division



PS3

No. 002
September 18, 2013

Release of Version 3.6.0.0

The Department's LFD Prestressed Concrete Girder Design and Rating (PS3) program has been revised as described in the attached "Summary of August 2013 Revisions – Version 3.6.0.0".

The new program was previously placed on PENNDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **PS3 Version 3.5.x.x**, can obtain the updated version by submitting an Update Request form along with the **update fee of \$50**. Updates for **PS3 Version 3.4 or earlier** will require an **additional fee**. The update fee is waived for federal and state transportation agencies. For PS3 update fee details, refer to the following link: <http://penndot.engrprograms.com/home/Ordering/PS3.htm>.

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 note that the software will no longer be provided on a CD. Once payment is received, an e-mail will be sent with download instructions. The new installation will require a License Key that will be provided in the e-mail. A valid e-mail address must be provided on the Update Form in order to receive the download instructions.

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 AUGUST 2013 REVISIONS - VERSION 3.6.0.0

PS3 v3.6.0.0 contains the following revisions and enhancements.

General Program Revisions

1. The program code was converted for use with the Intel Visual Fortran compiler. (Request 001)
2. The program has been converted to run as a Windows DLL allowing a seamless interface with Engineering Assistant (EngAsst) and APRAS. (Request 002)
3. The program code was upgraded to current programming standards. (Request 003)
4. The program has been enhanced to provide a PDF output file in addition to the text output file. The PDF file makes it easier to print and paginate the program output. (Request 008)

Input Revisions

5. The maximum number of input axle loads for special live loads was increased from 24 axles to 80 axles. (Request 004)
6. A default was added for the Strand Area input field for design runs. For analysis/rating runs, both the Strand Area and Strand Diameter input fields must now be entered. This corrects a problem for rating runs with the Strand Area was left blank resulting in the program attempting to run in design mode. (Request 006)
7. The input Strand Diameter and Strand Area are checked against standard strand sizes. If the input values do not correspond to a standard strand size, a warning message is printed. A warning message will also be printed if the input Strand Diameter and Strand Area do not correspond to the same standard strand size. (Request 007)
8. For design runs, the defaults for the Strand Diameter and Strand Area have been revised. If the Strand Diameter is entered and the Strand Area is left blank, the Strand Area will default to a standard strand area based on the input strand diameter and the Grade of the prestressing strand. Likewise, if the Strand Area is entered and the Strand Diameter is left blank, the Strand Diameter will default to a standard strand diameter based on the input strand area and the Grade of the prestressing strand. If both are left blank or the input Strand Diameter or Strand Area do not correspond to a standard strand size, the defaults for the Strand Area and the Strand Diameter are now set to 0.167 in² and 0.52 in. (½" special strand) for Grade 270 and 0.144 in² and 0.50 in. (½" strand) for Grade 250, respectively. (Request 007)
9. The Shear Distribution Factor input description now clearly states that one-half the wheel load distribution factor needs to be entered. (Request 011)
10. The DL1 input description was amended to include wearing surface, parapet and sidewalk loads for non-

composite adjacent box and plank beams. (Request 013)

Beam Section Revisions

11. Bulb-tee sections can now be designed and analyzed by the program. The dimensions for all standard PA Bulb-tee section listed in BD-652M are provided by the program. (Request 009)
12. The effective slab width is determined in accordance with the 2002 AASHTO Standard Specification Article 9.8.3. (Request 012)

Specification Check Revisions

13. The iterative procedure used to compute the moment strength at a specified stress level, M_{fy} , is stopped when the strain due to the prestressing force is greater than the maximum allowable strain since the procedure will not converge. M_{fy} is then reported as -9999.9 indicating that the section has no reserve resistance. Also, a detailed description of the iterative procedure used to compute M_{fy} was added to Section 3.8 of the User's Manual. (Request 005)
14. The maximum debonded length check, removed in v3.3, was reinstated to avoid a possible infinite loop problem during debonding design trials. (Request 010)

Load Ratings

15. A new SLC LEVEL option was added, which will produce a rating factor based on a percentage of the Operating rating factor. (Request 014)