

PennDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Applications Division



SIGN

No. 004
September 15, 2014

Release of Version 1.5.0.0

The Department's Sign Structure Analysis (SIGN) program has been revised as described in the attached "Summary of Version 1.5.0.0 Revisions".

The new program has been placed on PennDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **SIGN Version 1.4.0.0**, can obtain the updated version by submitting an Update Request form along with the **update fee of \$50**. Updates for **SIGN Version 1.3.0.0 or earlier** will require an **additional fee**. For more details concerning the SIGN update fees, please refer to the following link: <http://penndot.engrprograms.com/home/Ordering/SIGN.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".

NOTE: SIGN v1.5.0.0 is not compatible with Windows XP.

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 VERSION 1.5.0.0 REVISIONS

SIGN Version 1.5.0.0 contains the following revisions and enhancements:

General Program Revisions

- 1. The method of calling the engineering program DLL from the Engineering Assistant has been changed for compatibility with EngAsst v2.5.0.0 which uses Microsoft's .NET Framework, version 4.5. Because of this, SIGN will no longer work with EngAsst v2.4.0.6 or v2.4.0.9 unless the EngAsst "Edit / Run EXE - Command Window" option is selected. SIGN will no longer work with EngAsst v2.4.0.0 and earlier.**
2. 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 067)
3. The SAPV input and output files created by the program will now be uniquely named so that they will be retained and not be overwritten as in previous versions. The SAPV input file will be named "<input filename>_SAPV.inp". The SAPV output file will be named "<input filename>_SAPV.oui". Both files will be created in the same folder as the SIGN input file. (Request 068)
4. The program is now compiled with Intel Visual Fortran Composer XE version 2011.9.300 using Visual Studio 2010.

Specification Check Revisions

5. Revisions made for Request 050 in v1.4.0.0 mistakenly removed a line of code that retrieved the post yield strength for a polygonal tube. This could result an incorrect yield strength being used for the post, which could in turn result in specification check problems. This was only a problem for polygonal tubes when the post yield strength was different from the other members. The program now retrieves the correct post yield strength. (Request 054)
6. Fatigue Details #14 and #15 are now checked for all branching member section types for all truss models. Previously, details #14 and #15 were only checked for pipe sections with the slotted tube-to-gusset connection. Details #14 and #15 also include angle-to-gusset connections. (Request 055)
7. The post stress calculation at the hand hole for Fatigue Detail #20 has been corrected. Previously, the post stress based on the gross section was incorrectly added to the post stress based on the net section. (Request 056)
8. Primary (i.e., post, truss chord, chord and strut) members in compression for the load case with the worst combined stress ratio are now considered as stress reversal members if at least one load case produces tension in the member. Previously, only primary members in tension for the load case with the worst

combined stress ratio were considered for stress reversal. This will increase the slenderness ratio limit for primary members in compression for the load case with the worst combined stress and subject to stress reversal. However, the upper chord members of the Two Post Planar Truss model are always considered compression members regardless of any load cases that may produce tension. (Request 062)

9. The strut-to-column pass-thru connection (fatigue detail #18) for centermount and cantilever structures was changed from category E' to category E for post members. (Request 065)

Input Revisions

10. The Section Yield Strength input check was revised to allow yield strength ranging from 35 ksi to 50 ksi. Previously, the only valid input was either 36 ksi or 50 ksi. PENNDOT's BD Standards specify that 35 ksi be used for welded and seamless pipe sections. (Request 057)
11. The Engineering Assistant (EngAsst) configuration files were revised so that the Details tab is enabled when a non-zero value is entered for the Number Details field of the Criteria tab. Previously, the Details tab remained disabled for non-zero Number Details values less than 10. (Request 059)
12. The maximum footing length was increased to 50 feet. An input check limited the Footing Length input for analysis runs to 30 feet. However, the program allows footing designs with lengths greater than 30 feet and the current PENNDOT Sign Standards include footing lengths greater than 30 feet. (Request 064)
13. The input descriptions for the hand hole, weep hole and wire outlet area were clarified removing references to the "net" area. (Request 066)

Structure Modeling Revisions

14. The orientation of the truss cross bracing was corrected for the 4-post 4-chord truss model when the first cross brace is located between the second and third truss panels from the end. (Request 063)