

PennDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Applications Division



STLRFD

No. 007

August 1, 2011

STLRFD v2.0.0.0 Potential Rating Issue in Negative Moment Region when compared to STLRFD v1.7.0.0 results

A rating issue has been identified in STLRFD v2.0.0.0 whereby the ratings for certain bridges may be significantly lower than those computed by the previous version, STLRFD v1.7.0.0.

Specifically, the issue occurs in the negative moment region when v2.0.0.0 assumes that the girder is non-compact, while the previous version assumed that the girder is compact. The current User Manual on page 3-62 regarding "flexural capacity" notes:

"Optional AASHTO Appendix A has NOT been implemented."

BACKGROUND

STLRFD v2.0.0.0 brought the program up to the 2007 DM-4 / 2004 AASHTO LRFD Bridge Design Specifications, but provisions in Appendix A (which are allowed as per PennDOT Design Manual Part 4) have not yet been included. Since Appendix A was not included, STLRFD v2.0.0.0 will provide VERY conservative ratings for certain situations analyzing sections with compact or non-compact webs in straight I-girder (or straight rolled beam) bridges. In these cases, STLRFD v1.7.0.0 may be used and will provide improved ratings. The provisions of Appendix A will be included in the next version of STLRFD. Refer to 2004 AASHTO LRFD Bridge Design Specifications commentary CA6.1 (excerpt shown below):

"The potential benefits of the Appendix A provisions tend to be small for I-sections with webs that approach the non-compact web slenderness limit of Eq. 1. For these cases, the simpler and more streamlined provisions of Article 6.10.8 are recommended. The potential gains in economy by using Appendix A increase with decreasing web slenderness. The Engineer should give strong consideration to utilizing Appendix A for sections in which the web is compact or nearly compact. In particular, the provisions of Appendix A are recommended for sections with compact webs, as defined in Article A6.2.1.

The provisions of Appendix A are fully consistent with and are a direct extension of the main procedures in Article 6.10.8 in concept and in implementation."

WORKAROUND

The temporary workaround is to use the previous version, STLRFD v1.7.0.0, for the specific cases where the rating issue occurs until the next STLRFD revision, including Appendix A, is released.

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."

PennDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Applications Division



STLRFD

No. 007
August 1, 2011

**STLRFD v2.0.0.0 Potential Rating Issue in
Negative Moment Region when compared
to STLRFD v1.7.0.0 results**

PERMANENT RESOLUTION

The permanent resolution is a program revision to implement Appendix A to provide comparable ratings to STLRFD v1.7.0.0. The new STLRFD release is expected by mid-September pending successful beta-testing of the revisions.

Direct any questions concerning the above issue to:

Geoffrey F. Elsavage, P.E., | Civil Engineer Consultant
PA Department of Transportation
Bureau of Project Delivery | Bridge Design & Technology Division
2140 Herr Street, Harrisburg, Pennsylvania 17103-1699
Phone: (717) 783-2817 | FAX: (717) 705-2262
gelsavage@pa.gov

NO LONGER APPLICABLE - RESOLVED BY STLRFD v2.0.0.3

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."