

6.10.6.2 – Strength Limit State – Flexure

Steel girder bridges with corrugated metal decks shall be designed and load rated using the provisions of section 6.10.6.2.3 of the AASHTO LRFD BDS based on the non-composite girder behavior. Using Appendix A6 and plastic analysis for bridges that don't meet the requirements in section 6.10.6.2.3 is not allowed.

Commentary:

Recently, skewed bridges (over 20 degrees) with corrugated metal decks have been designed using plastic analysis theory from Appendix A6, which is explicitly not allowed in the code. During the load rating of these bridges, the HL-93 inventory rating was less than 1.0. The research to determine if steel members subjected to lateral loads caused when a skewed bridge with staggered cross frame can obtain plastic capacity is limited. Thus, AASHTO uses a potentially conservative approach for the design of skewed non-composite steel sections. More research is anticipated; however, ITD will follow this provision of the code unless research verifies non-composite skewed girders reaches plastic capacity.

Revisions:

Oct 2023 Added new article.