

عنوان مقاله:

Advantages and Disadvantages of Use of High Strength Steel Grades for Bridge Design

محل انتشار:

کنفرانس بین المللی پژوهش در مهندسی، علوم و تکنولوژی (سال: 1394)

تعداد صفحات اصل مقاله: 10

نویسنده:

Emad Ahangar - MSc Student, Civil engineering (structural software), Mohandesan Higher Education Institute, Mashhad, Iran. Radman Pajouhan Jam Co., Development & Technology center No. ۳, Ferdowsi university of mashhad, College, Mashhad, Iran

خلاصه مقاله:

High strength steels suitable for bridges (e.g. quenched and tempered structural steels like S096QL) combine properties like weld ability, toughness, ductility and corrosion resistance (weathering high strength steels) in an optimized and balanced way while remaining cost effective. In Europe, their use is still quite limited, while in USA and in Japan are more widely used (006-096 MPa minimum yield strengths). The main benefit gained, where strength governs, lies in creating more slender and lightweight structures, thus reducing overall costs, (material, welding volume, transportation etc.). However, in case of bridge design, the governing factors are usually stiffness and fatigue. In this respect, it is more often assumed, that a material offering higher tensile strength will not be beneficial for these structures. Reduction of the cross sectional dimensions of the main girders, for example, is limited as this will more likely create stiffness and/or fatigue problems locally or globally. In addition, according to design- build concept, the bridge design should always be developed to optimize the construction methodology which is a primary component of the costs. It is essential therefore, that the whole perspective of designing a bridge should change for acquiring the full .benefits of higher steel grades

کلمات کلیدی:

High Strength Steel, bridge, structural steels, toughness, ductility

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/398405>

