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Strength of Steel Orthotropic Bridge Deck for LRFD

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Abstract

Currently there is no information on the strength (load carrying capacity) of steel orthotropic decks with trapezoidal shaped longitudinal stiffeners (ribs) for Load and Resistance Factor Design (LRFD). A few strength tests of deck components from a full-scale model deck were conducted and the results are being summarized and evaluated. However, these are not results directly on the load carrying capacity of the decks.

This project will evaluate analytically the strength of steel orthotropic decks under combined axial compression and vehicular loads on bridge deck spans. Buckling, yield strength and ultimate strength will be identified.