

Contribution of Intermediate Diaphragms on LDFs of Straight and Skew Concrete Multicell Box-Girder Bridges

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Abstract : Current studies indicate that neglecting the effect of intermediate diaphragms might lead to highly conservative values for bending moment distribution factors and result in non-economic designs for skew bridges. This paper reports on a parametric study performed on 160 prototypes of straight and skew concrete multicell box-girder bridges. The obtained results were used to develop practical expressions to account for the diaphragm effects on American Association of State Highway and Transportation Officials formulas for live load distribution factors. It was observed that decks with internal transverse diaphragms perpendicular to the longitudinal webs are the best arrangement for load distribution in skew bridges.

Keywords : box bridges, truck, distribution factor, diaphragm

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