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16. Abstract

Four different types of dowels, 1½ inch diameter epoxy-coated steel bars, 1½ inch diameter fiberglass, 1½ deep steel and fiberglass I-beams, were instrumented with strain gages and installed. Forces that developed in these dowel bars due to curling and non-destructive testing using falling weight deflectometer (FWD) were examined.

Based on the data obtained in this study, it can be concluded that generally moments due to curling were significantly higher than moments developed during the non-destructive testing (FWD). Also, forces in the fiberglass dowels were less than those in the steel dowels. It is obvious that dowel bars function as a load transfer mechanism at joints, but also, they served to reduce the magnitude of curling at the joints.

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