

# LOAD RESPONSE OF COMPOSITE DECKS WITH PRECAST PRESTRESSED FOLDED CORRUGATED PANELS

M.seyed I, A EL-Sayed 2, H. Bahnasawy 3 and A. Ragab 4

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## Abstract:

*Composite decks composed of precast panels and cast-in-situ layers are widely used in bridges. Investigations showed that such composite decks with prestressed panels are economically and structurally attractive. Durability, ease and speed of construction, together with reduced need for maintenance are all advantages in using such system. In this paper, the behavior of a new proposed composite deck, consists of precast prestressed concrete folded corrugated panel and lightly reinforced concrete, cast-in-sit , layer was investigated. Concrete shear keys with different percentages were utilized to work as horizontal shear connection between the composite deck layers.*

*Three composite decks with precast prestressed concrete folded corrugated panels were tested under uniform load to study the overall behavior. the experimental results reveal the importance of prestressing the precast panel since it enhances the overall behavior of such composite decks. Also, the experimental results showed that the behavior of the new proposed composite deck is less affected by tile increase of the concrete shear keys rather than other similar decks with reinforced precast panels.*