

FLOOR DECK DESIGN MANUAL

SECOND EDITION

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Question:

“If reinforcing steel in deck-slabs is removed or replaced with fibers, are concentrated load distribution methodologies and FDDM load tables still valid?”

Answer:

No.

The current SDI methodology is based on relative stiffness of the deck-slab/transverse beam and cracked sections. When no reinforcing steel is present in the transverse beam, ϕM_w is limited by the un-cracked section and modulus of rupture f_r . If the transverse beam is uncracked, the deck-slab must also remain uncracked and ϕM_n is invalid.

Limited test data is available for deck-slabs with steel fibers in lieu of temperature and shrinkage steel; however, the results suggest equivalent stiffness. More testing is required before SDI could validate load distribution methodology for fiber reinforced deck-slabs.