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Flexural Characteristics of Post-tension HSRC Slabs with Opening under Distributed Load

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Abstract

The target of this paper is to investigate the behavior of post-tensioned (PT) slabs after applying openings at different locations of the simple slab under distributed load. Using RAM CONCEPT software, eighteen post-tension High Strength Reinforced Concrete (HSRC) slabs with openings under distributed load were numerically investigated. The studied parameters were the opening dimension, aspect ratio, and location. The flexural behavior of the tested specimens was evaluated based on stress transferred by the numerical slab, short- and longterm deflection, and distribution of PT strands. Considerations and results done in this parametric study are referenced according to ACI 318-14. By reviewing the available literature, it was found that there were no experimental results for slabs has the same condition of the investigated slabs which made it difficult to compare the numerical results obtained from RAM CONCEPT with any experimental results.

Keywords: Post-tensioned salbs- openings at different locations- RAM CNCEPT software- numerical investigation-short and long-term deflection