

A Photoelastic investigation of the stress distribution in the anchorage zones of post-tensioned concrete slabs

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Abstract

The present work is a photoelastic investigation of the stress distribution in the anchorage zones of post-tensioned concrete slabs. The general form of stress diffusion has been established and the critical tension zones have been identified. The critical shear and tensile stresses as well as tensile forces have been evaluated and their sensitivity to the interactive load positions established. The results of critical values are compared with the various theoretical solutions in common use for design purposes. A mechanism of failure has been suggested and recommendations have been made for the design of the anchorage zone.