

Evaluation of the Bursting Force of Post-Tensioned Anchorage Zones

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Abstract—In Post-tensioned concrete beams, the longitudinal compressive stress from concentrated to linearly distributed produces high transverse tensile stresses in the vertical direction. When this tensile stresses exceed the modulus of rupture of the concrete, the anchorage zone has cracks. The appropriate vertical reinforcement is required based on calculation of tensile stresses (bursting stresses). In this study, the analytical results were used to examine the validity of different proposals for bursting force. The angle of tendons, eccentricity, and shape of anchorage were considered as variables. This comparison demonstrates that the Morsch equation is able to predict bursting force reasonably well than the other equations.

Keywords—bursting force, post-tensioned concrete, anchorage zone, finite model

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