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BEHAVIOUR OF REINFORCED AND PRESTRESSED HIGH STRENGTH CONCRETE BEAMS

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Abstract:
Owing to the increased use of high strength concrete in long span beams in bridges and buildings the validity of exact methods for combined bending and shear behaviour is examined using Modified Compression Field Theory (MCFT).
A method is developed for evaluation of deflections during cracking stage. Theory developed earlier by using Finite layers and Mohr's stress and stain circles is applied, using a computer programme. Based on previous experimental studies qualitative behaviour of such beams is reviewed.
Improvements in the theory are suggested by using actual stress-strain curves, variable angles for location of cracks in place of 45 degrees, computing shear deflection, and accurately computed values for Young's Modulus of concrete and tensile strength.

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