

STUDY ON PARTIAL FACTOR DESIGN METHOD FOR CONCRETE HIGHWAY BRIDGES

Abstract : This study aims to propose the design methods for concrete highway bridges based on the partial factor design. 1) Principles for concrete members, prescribed as allowable stress of materials, are identified considering harmonization to the general requirements for highway bridges. 2) Provisional values of resistance factors in the verification of structural safety are determined. 3) The effect of drying shrinkage and creep to the long-term change of crack widths in concrete beams are discussed with the data of sustained load test. 4) Modified allowable tensile stress in re-bar are proposed based on the result of the exposure test with cracked concrete specimens.

Keywords : partial factor design, reliability based design, concrete bridge, durability, cracking