

A STUDY ON PARTIAL FACTOR DESIGN METHOD FOR HIGHWAY BRIDGE SUBSTRUCTURES

Abstract: The adoption of a reliability design concept has been enthusiastically encouraged so that new design approaches or materials can be compared with current practices in terms of reliability. Accordingly, the Japanese Specifications for Highway Bridges are being revised toward the implementation of the load and resistance factor design (LRFD) format with a reliability design concept. This study has proposed limit states and resistance factors in design of pile and shallow foundations that ensure bridge performance demands using the reliability analyses of in-situ load test data, model uncertainties, soil investigation quality and quantity etc. Especially, it is highlighted that proposed resistance factors are the function of soil investigation quality and structural redundancy.

Key words: reliability design, pile foundation, shallow foundation, reliability, partial factor