

RESEARCH ON RETROFITTING FOR CORRODED STEEL GIRDERS AROUND EXPANSION JOINTS

Abstract :

In this research, a retrofitting method using cover plates fixed by bolted connection and adhesives, and a practical procedure for selecting efficient retrofitting methods were discussed. In FY2008, static and fatigue bending tests, and cyclic longitudinal loading tests using steel beams containing artificial structural deficiency were carried out. In addition, when the bolted cover plates with epoxy resin adhesives were applied to the deficiency in the beams, the cover plates indicated good performance to improve the static and fatigue behavior. Based on the results, the simple retrofitting method using the bolted-bonded cover plates was proposed. Additionally this research provided the tentative procedure for selecting the retrofitting methods.

Key words : corrosion, retrofitting, bolted connection, adhesive, stress concentration, fatigue, earthquake, cyclic loading