

Publication of Collected Highway Bridge Repair and Retrofitting Cases (2009 Edition)

TAMAKOSHI Takashi, Head HOSHINO Makoto, Senior Researcher
Bridge and Structures Division, Road Department

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Highway bridges in Japan deteriorate and are damaged in a variety of ways as they age, increasing their need for repair or retrofitting work. And to repair or retrofit existing bridges, it is necessary to carry out a detailed study of each bridge at each step from hypothesizing the causes of the deterioration and damage to selecting the countermeasure method because, as a result of the complex interaction of an extremely wide range of factors, universal countermeasure methods have not been established.

Based upon precautions clarified by the study of the analysis of deterioration and damage and by research on its evaluation, technical guidance for repair and retrofitting measures is provided. To take advantage of the results, the Division has collected and analyzed information concerning deterioration of and damage to highway bridges which have been the objects of technical guidance by the National Institute for Land and Infrastructure Management. Based on these, detailed survey methods needed to hypothesize causes, know-how concerning the selection of repair and retrofitting work methods and measures to ensure quality during execution have been organized at the same time

as measures taken in typical damage cases have been reviewed.

With regard to fatigue cracking of corners on steel bridge piers and of steel deck slabs for example, the Division has clarified measures and precautions to deal with this problem by analyzing the results of surveys and inspections by regional development bureaus throughout Japan, by analyzing past designs and executions, and by surveying bridge manufacturing technologies.

The achievements of these survey and research projects have been reviewed along with repairs and retrofitting works by other road companies and local governments, and reflected in the Collected Cases of Highway bridges Repair and Retrofitting (2009 Edition) published by the Japan Road Association, a technical document prepared for road administrators and engineers performing repair and retrofitting work in the field.

References

- 1) Note on structural details about the beam-column connection of steel pier of highway bridges, Technical Note of NILIM, No. 229, January 2005, etc.