

## **Test research regarding rationalization of long-span bridge face structure ( Part 1 )**

### **[ Point ]**

In order to reduce the cost of long-span bridges, economical and rational bridge structures by reductions of bridge structures' dead load and construction process, is required, and examination of plate deck structure and research regarding durability are also necessary. In this research, we aimed proposing rational plate deck structure form regarding rationalization steel plate deck and open grating plate deck; therefore we researched and organized previous studies, as well as verified fatigue durability of open grating plate deck by wheel load driving test. As a result, regarding rationalization steel plate deck, we clarified necessity of comprehensive examination from perspective view of improvement of fatigue durability and structure rationalization, including stiffness balance of cross-section shape and each member, details structures and effect of pavement. Moreover, regarding open grating plate deck, comparing with concrete plate deck, which designed by current standard, it's difficult to say to have the same durability, from the perspective of obtaining fatigue durability, we found necessity of examination of necessary stiffness of surface member and detailed structures.

Keyword : steel plate deck, open grating plate deck, fatigue, long-span bridge, bridge deck structure, wind resistant, dead load, wheel load, test