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Remedial Measures for Bridges: Case Studies

By

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ABSTRACT

Bridges are the back bone of highway and railway infrastructure. It is therefore important to take remedial action promptly if any defects are noticed or if the bridge requires to be upgraded. Only with frequent periodic inspections can such defects be identified timely. Service life of bridges can be increased considerably when remedial action is taken after inspections which may involve retrofitting, rehabilitation or merely repairs, and sometimes strengthening. In rare cases the remedial action can be taken only 'after the event' (eg terrorist action).

A Planned strategy for remedial action has to be evolved from the beginning of the project. The design itself must cater to some features like the possibility of replacement of bearings after 20-30 years of service life. Also, increased robustness of the structural concept often reduces maintenance activities. Special features in the design concept can also reduced the chances of accidents during construction.

The case studies to be presented cover the following topics:

1. Design Issues
2. Construction Issues
3. Deterioration of Materials (including Bearings, Expansion Joints, Articulations)
4. Upgradation for Codal Requirements
5. Earthquake Damage
6. Terrorist Action

The basic requirements of remedial action are:

- Should be economically feasible
- Should be technically viable
- Should surmount functional constraints