

Assessment and Strengthening of Existing Rc Framed Structures

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Tomme: LII (LVI) | **Fascicle:** 1-2 | 2006

Pages: 79-88

Abstract text:

Existing structures built before the 1970s are gravity load designed with inadequate lateral load resistance because earlier codes specified lower levels of seismic loads and many of these structures are still in service beyond their design life. On the other hand, some deterioration of component parts of buildings is encountered in old structures due to the actions of different hazard factors. Theoretical aspects on the risk assessment of the reinforced concrete structures are presented. The earthquake capacity ratio is analyzed for reinforced concrete framed structure. More attention is paid to the seismic shear force capacity and some new procedures are introduced to estimate the earthquake capacity of existing structures. The assessment, rehabilitation and redesign were performed on an industrial RC framed structure. The main problems comprised local damage due to industrial exploitation of some structural elements (concrete cover dislocated over a large surface, complete corrosion of many stirrups, deep corrosion of main reinforcement, some broken reinforcement) and weak reinforcement of columns and beams under seismic action. The redesign and rehabilitation of the RC structure was performed for both types of damages by using reinforced concrete jacketing solutions.

Key Words:

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T. LVI (LX), Fasc. 3, 2010

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