

8. Development of Aseismic Reinforcements by Precastblocks and Additional Tendons - APAT Method -

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The steel plate wrapping method has been adopted widely in aseismic reinforcement for existing viaduct columns of railway. However, the steel plate wrapping method has difficulties in both quick inspections of damages and urgent recovery. As a solution to the problem, a new reinforcing method named APAT Method, in which spiral tendons so manufactured are in use along with pre-cast concrete blocks, has been developed to ensure cost and working efficiency. Each of pre-cast concrete blocks is placed around an existing column and then spiral tendon is tied up.

We confirmed that stiffness and shear strength of the column were increased with the Method better than the steel plate wrapping method, and that the Method allowed a visual inspection at all time, by experimental investigation and horizontal cyclic load test. Also, We developed the automatic spiral tendon machine in order to improve workability and control tension of spiral tendon.

More than 200 columns have been done aseismic reinforcement with APAT Method.

Key words: aseismic reinforcement, RC column, horizontal cyclic load test, ultimate ductility factor