

**Development of Inspection and Evaluation Methods of
Roadbed Concrete in Tunnels**

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Cyclic load by train causes subsidence of railway track level in tunnels, which is caused by the ground deformation under roadbed concrete. Based on the progress of track disorder and core drilling results, the deformation of the roadbed concrete have been evaluated, but there have been no quantitative inspection method until the present. To develop a method for quantitative evaluation of the slab track from the view point of train running stability, a method to survey the properties of roadbed concrete by vibrating it with vibration exciter was proposed. Vibration characteristic of roadbed concrete was evaluated with accelerometers fixed around the vibration location. Then the correlation between the results of vibration tests and progress of track disorder considered to be correlated with the soundness of roadbed concrete was verified, and an evaluation method making use of the correlation was proposed.