

**Evaluation of Soundness of Railway Retement using the Topographical Conditions
and the Results of Vibration Test**

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Evaluation methodology of soundness of railway retement is discussed in this report. It was found out from the field investigation of the railway retement that significant damage of the retement was mostly caused by the scoring of the retement foundation. Therefore, a series of percussion and vibration test were conducted on existing railway retements, which were subjected to the damage of scoring, so as to examine their applicability as the inspection method of scoring. The test results show that the changes of vibration characteristics can be used as an index to detect the scoring progression. In additions to the above, such topographical conditions as would seriously affect the occurrence of scoring, were extracted based on the results of the additional field survey on the damaged retement.