

## **Floor Heave Mechanism and the Effect of Countermeasures for Mountain Tunnels**

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In mountain tunnels, floor heave may gradually progress, so that its countermeasures possibly be required. However, the occurrence mechanism of it has not been fully revealed at present. Therefore, a design method for the countermeasures against floor heave has not been established so far. In this study, we first conducted a literature survey on the cases of floor heave to study its occurrence mechanism. Then, by a model experiment, we reproduced the mechanism estimated from the literature survey. Based on the results, this paper proposes an occurrence mechanism of the floor heave and the countermeasure against the floor heave. The effect of the proposed countermeasure is evaluated by numerical analysis.