

## **Rapid and Strengthened Retrofitting Method of Damaged Embankment**

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In Japan, due to severe rainfalls and massive earthquakes, there are many cases where embankment failure suspends the operation of railway services. Once an embankment is damaged, the embankment is requested to be retrofitted rapidly. In contrast, reinforcements of embankments, which usually lengthen retrofitting periods, are also recommended to avoid the repeats of the collapse against the future rainfall and earthquake. To answer these conflicting social requests, the authors develop a rapid retrofitting method with reinforcement of damaged embankment using the soil reinforcement and the gabion. This paper presents the process of the development of the procedure and an example of the applications.