

“Spacepack[®]” : A Tunnel Lining Backfill Grouting Method

Kenji Akiyoshi ▶ Senior Chief Engineer

Civil Engineering Construction Division,
OBAYASHI CORPORATION

The Spacepack is an injection method using one-component and two-component plastic grout (Photo 1) suitable for filling cavities in the back of tunnel linings and under road surfaces. By filling cavities in various structures, the grout restores their functions and contributes to extending the service life of tunnels and other social infrastructures. The features of this method are as follows:

- 1) The method is cost beneficial because it uses inexpensive materials and can be implemented using general-purpose machinery.
- 2) The material has moderate fluidity and shows little shrinkage and segregations, which makes it reliable as filling.
- 3) Material loss can be minimized since the material can be used for limited injection, and there is only small material leakage from cracks in the lining and construction joints (Photo 2).
- 4) Stable quality can be ensured even in cavities underwater or filled with spring water (Photo 3).
- 5) The material can be pressure fed up to 2,000m away, allowing flexible choice of manufacturing system that suits the conditions for construction.



Photo 1 Plastic grout

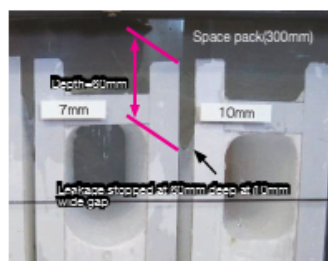


Photo 2 Leakage proof

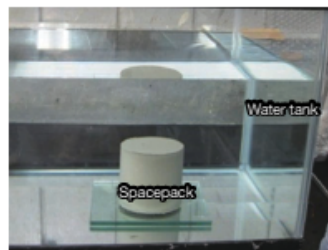


Photo 3 Resistant to segregation under water