

## Development of the Accelerator Applied to an Early Stage High-Strength Shotcrete

**Authors :** Ayanori Sugiyama, Takahisa Hanei, Yasuhide Higo

**Abstract :** Domestic demand for the construction of tunnels has been increasing in recent years in Japan. To meet this demand, various construction materials and construction methods have been developed to attain higher strength, reduction of negative impact on the environment and improvement for working conditions. In this report, we would like to introduce the newly developed shotcrete with superior hardening properties which were tested through the actual machine scale and its workability and strength development were evaluated. As a result, this new tunnel construction method was found to achieve higher workability and quicker strength development in only a couple of minutes.

**Keywords :** accelerator, shotcrete, tunnel, high-strength

**Conference Title :** ICCSGE 2017 : International Conference on Concrete, Structural and Geotechnical Engineering

**Conference Location :** Barcelona, Spain

**Conference Dates :** October 30-31, 2017