

Evaluation of temperature dependency of creep behavior based on unconfined compression test

TETSUJI OKADA[1]

[1] CRIEPI

<http://criepi.denken.or.jp/jp/>

The geological disposal is expected to be the most practical measure for isolating high-level radioactive waste. Since heat is generated due to the collapse of nuclide in HLW, the rock mass around the geological disposal facility will experience high temperatures. Therefore, it is important to understand the effect of high temperature on the rock masses. In this study, under different temperature from 24 degrees to 95 degrees, a series of unconfined creep tests was conducted on a mudstone and tuffaceous rock, Ohya stone. The results show that the time to failure of Ohya stone is decreased, while the minimum strain rate is increased for high temperature. However, the relationships between the time to failure and the minimum strain rate are dependent on neither creep stress nor temperature.