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EFFECTS OF WATER ON CREEP DAMAGE PARAMETER OF PLAGIOCLASE

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Summary

Rock will be soften and weakened its physics mechanics parameters by water, then resulting in the deterioration of stability of geotechnical engineering. The effects of water on creep damage parameters of rock become more distinct for pore water dissipation with time passing. So it is important to study the damage parameters by creep effect under the water-saturated condition.

In the present paper, a set of uniaxial compression creep experiments of plagioclase specimens were performed under dry and water-saturated in Jinchuan Mine a.! by a circular increment step load and unload method using RYL-600 Shear Rheometer. Creep experiment curves were obtained. The effects of water-saturated on creep mechanical properties of plagioclase was studied according to the experiment results, showing that the creep curves and creep strain rate curves of water-saturated specimens are above corresponding curves of dry specimens at same stress level, i.e. the deformation of water-saturated specimen is larger than that of dry specimen. The time is longer which creep strain rate of water-saturated specimen reaches steady phase than that of dry specimen. Damage-stress curve shows water increases damage of rock. The results are in accordance with the real practice.