

Chemical and Textural Changes in Weathering Processes of the Aso Welded Tuff

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Changes of chemical, physical and rock textures with weathering in the Aso welded tuff have been studied to understand the weathering processes in such rocks. Hydration and solution of volcanic glass were confirmed in addition to the increase of porosity. Micro-cracking and opening of such cracks tend to appear along obsidian lenses within remarkably weathered rocks, and some of them are filled with limonites. This reduces the strength of rocks. A distinct correlation is recognized between index of chemical changes and hardness of rock masses expressed by rebound values of Schmidt rock hammer. This means that chemical changes of materials brought about by water flows through rocks may control the properties of not only intact rocks but also rock masses in these rocks.