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## ASSESSMENT OF GEOMECHANICAL PROPERTIES OF IGNIMBRITES IN ERENLERDAG-ALACADAG VOLCANIC COMPLEX (KONYA, CENTRAL ANATOLIA)

**Ali BOZDAĞ**

Konya Technical University, Faculty of Engineering and Natural Sciences, Department of Geological Engineering  
ORCID: 0000-0003-2590-8798

### ABSTRACT

Neogene volcanic rocks cover large areas in the southwest of Konya, Central Anatolia. These volcanics named as the Erenlerdag-Alacadag Volcanic Complex (ErAVC) consist of lava and pyroclastic units in andesitic, dacitic composition. The pyroclastic units in the volcanic complex are volumetrically dominant and consist of different types of lithological units. These units are represented by pyroclastic fall, ash and block flows and ignimbrite type lithologies. The ErAVC ignimbrites are represented by four different units, namely as Kızılören, Erenkaya, Detse and Sadıklar. These ignimbrites covering large areas around the Konya are natural building materials that offer easy transport due to their easy processing and low density. In the past, shelters and places of worship were carved in ignimbrites, and they were also used as a natural building stone in historical buildings. At the present time, they are widely used as building stone material in low-rise buildings. The aim of this study is to evaluate the usability as building blocks of ignimbrites in the ErAVC, which have different age and lithological (color, texture, structure, welding degree etc.) properties. In order to evaluate the usability of ignimbrites as building blocks, their petrographic properties, density, porosity, water absorption by weight, P wave velocity, Böhme abrasion loss, Schmidt hammer rebound value and uniaxial compressive strength properties were investigated. According to the results obtained, it was determined that there are meaningful relationships between some physical mechanical properties of ignimbrites. Besides, these ignimbrites having different petrographic and physico-mechanical properties, should be evaluated in detail for different usage areas and the application areas should be preferred accordingly.

**Keywords:** Ignimbrite, Natural building stone, Physico-mechanical property, Pyroclastic rock