

THE INFLUENCE OF PETROGRAPHICAL CHARACTERISTICS ON ENGINEERING PROPERTIES OF SELECTED GRANITIC ROCKS USED AS BUILDING AND ORNAMENTAL STONE

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Granitic rocks are widely used as building and ornamental stone in Turkey. This type of rock show a variety of engineering properties that may affect quarrying operations and use of rock as construction material. The engineering properties are a function of the mineralogical and textural characteristics of the rock. The purpose of this study is to apply correlation analysis to investigate relationships between petrographical and engineering properties of granitic rocks. Rock samples were collected from different parts of Turkey. The specimens were first subjected to petrographic studies. The same samples were then tested to determine specific gravity, unit weight, water absorption, effective and total porosity, P-wave velocity, Schmidt hardness, point load strength index, uniaxial compressive strength, tensile strength and modulus of elasticity. Finally, physico-mechanical properties and the petrographical characteristics of the granite specimens were correlated by statistical analyses. The study implies that the influence of textural characteristics on the engineering properties appears to be more important than mineralogy. It is also determined that types of contacts, grain (mineral) shape and size have significant influence on engineering properties of the granitic rocks.