THE TESTING ANALYSIS ON MECHANICAL PROPERTIES OF MARBLE EFFECTED BY THE HIGH TEMPERATURE

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ABSTRACT

The mechanical properties of marble are studied by the MTS810 Rock Mechanics servo-controlled testing system at the temperature up to 800°C to analyze the stress-strain curve, peak stress, peak strain, modulus of elasticity of marble. The results show that the peak stress and elastic modulus decreases with the increasing of the temperature in different degree, especially the rock mechanical strength would decrease suddenly in some certain period of temperature, while the peak strain increases step by step with the temperature. The ductility of the marble increased greatly at 800°C, meanwhile the strain increases slowly with the increasing temperature after the peak stress occurs.

Key words: marble, high temperature effect, mechanical properties, testing analysis.