高围压条件下含充填裂隙类岩石水渗流试验研究

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EXPERIMENTAL STUDY OF PERMEABILITY OF ROCK-LIKE MATERIAL WITH FILLING FRACTURES UNDER HIGH CONFINING PRESSURE

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摘要 进行高围压、高水压条件下的含充填裂隙类岩石的渗透性试验研究，根据配比试验，制作模拟砂岩的试样，并应用自主研发的三轴试验仪器进行试验研究。研究发现：(1) 不同充填裂隙试样的渗透系数不同，但不同围压下渗透系数均处于同一数量级；(2) 围压升高时，充填裂隙介质的渗透系数呈下降趋势；(3) 渗透结构面几何特征是影响试样渗透性的主要因素之一；(4) 试样渗透性规律应建立在试验的基础上。

关键词： 岩石力学 充填节理 相似材料 渗透性

Abstract： The tests for permeability of rock-like sample with filling fractures under high confining pressure and hydraulic pressure are carried out. Based on the ratio test，the specimens simulating sandstone are made；and the tests are made by self-developed triaxial instrumentation. From the results，it is found that：(1) The permeability coefficients of different filling fractures specimens are different；but they are always in the same magnitude under different confining pressures. (2) The permeability coefficient shows downward trend with the increase of confining pressure. (3) The geometrical characteristic of permeability structural surface is one of main factors influencing permeability of sample；(4) Permeability law of sample should be based on the test results.

Keywords： rock mechanics filling joint similar material permeability

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