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岩体质量评价在清江水布垭面板坝趾板建基岩体验收中的应用

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摘要 清江水布垭面板坝坝高233 m，为目前世界最高面板坝，其趾板建基岩体软硬相间，岩性复杂，如何从经济和工程安全两方面，确定建基岩体利用和验收标准值得研究。以往经常采用岩体风化程度或者岩体波速作为水工建筑物建基岩体利用和开挖后的验收标准，但不能全面反映岩体强度、变形特性及抗渗性等岩体质量特征。提出以工程岩体分级作为趾板建基岩体质量评价方法，建立了相应的岩体利用和验收标准，并应用于趾板建基岩体验收。通过岩体声波测试和岩石抗压强度试验，对趾板建基岩体质量进行评价，并进行岩体质量分区，指出了质量较差岩体分布部位，在施工过程中得到及时处理。

关键词 岩石力学；岩体质量评价；工程岩体分级；趾板；建基岩体；验收标准

分类号

APPLICATION OF EVALUATION OF ROCK MASS QUALITY TO ACCEPTANCE OF TOE-SLAB OF SHUIBUYA CONCRETE FACED ROCKFILL DAM ON QINGJIANG RIVER

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Abstract

Shuibuya concrete faced rock-fill dam(CFRD) with a height of 233 m on Qingjiang River is the highest CFRD in the world at present. The foundation rock under toe-slab has complicated lithological condition，and the rock masses are soft layers alternating with hard layers. It is worth to study that how to establish the utilizable and acceptable criteria of foundation rock with consideration of economy and engineering safety. In the past，the weathering degree or sonic wave velocity of rock mass was often used as the acceptance criterion for the utilization and caving of the rock foundation of hydraulic structure；but these criteria cann¢t reflect the comprehensive characteristics of rock masses，such as the compressive

strength，deformation properties and anti-permeability of rock mass. The engineering classification of rock masses is used for evaluating the quality of foundation rock under toe-slab；and the corresponding criteria of rock utilization and acceptance are established，which are applied to the acceptance of foundation rock under toe-slab. The quality of foundation rock under toe-slab is evaluated and divided by using elastic wave and compression tests in laboratory；and the distribution of rock masses with poor quality is pointed out，which can be remedied timely during construction process.
Key words rock mechanics；evaluation of rock mass quality；classification of engineering rock mass；toe-slab；foundation rock；acceptance criteria

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