

Understanding Mudrocks and Their Shear Strength Deterioration Associated with Inundation

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Abstract : Mudrocks is considered as a problematic material due to their unexpected behaviour specifically when they are contacting with water or being exposed to the atmosphere. Many instability problems of cutting slopes were found lying on high slaking mudrocks. It has become one of the major concerns to geotechnical engineer as mudrocks cover up to 50% of sedimentary rocks in the geologic records. Mudrocks display properties between soils and rocks which can be very hard to understand. Therefore, this paper aims to review the definition, mineralogy, geo-chemistry, classification and engineering properties of mudrocks. As water has become one of the major factors that will rapidly change the behaviour of mudrocks, a review on the shear strength of mudrocks in Derbyshire has been made using a fully automated hydraulic stress path testing system under three states: dry, short-term inundated and long-term inundated. It can be seen that the strength of mudrocks has deteriorated as its condition changed from dry to short-term inundated and finally to long-term inundated.

Keywords : mudrocks, sedimentary rocks, inundation, shear strength

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