

The residual shear strength of the shaly and sandy facies of the Opalinus Clay

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Abstract

The paper presents a comprehensive laboratory campaign carried out with the aim to assess the residual strength of the Opalinus Clay. Ring shear tests with vertical effective stress up to 1 MPa were performed on remoulded samples of two different facies of the Opalinus Clay. Test results show that the «Shaly» facies is characterized by a low range of variation of residual strength while the strength of the «Sandy» facies is very sensitive to the variation of grain size distribution. Microstructural analyses (SEM) suggest that the difference in the observed mechanical behavior of the two facies can be related to different particles arrangements along the shear surfaces.