

# **Impact of drained heating and cooling on undrained shear strength of normally consolidated clay**

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## **Abstract**

This study focuses on the effects of a heating-cooling cycle on the undrained shear strength of normally consolidated clay specimens. A clear increase in undrained shear strength was observed for specimens sheared after drained heating to an elevated temperature, while a further increase in undrained shear strength was observed for specimens sheared after a drained heating-cooling cycle. This is attributed to the permanent decrease in volume during drained heating followed by the elastic decrease in volume during drained cooling. The initial mean effective stress was also observed to play an important role in the magnitude of the increase in undrained shear strength, with greater increases observed for normally consolidated specimens with lower mean effective stresses.