

## Method for Predicting the Deformation of a Swelling Clay of the Region of N'Gaous (Batna, in Algeria)

**Authors :** Ferrah F., Baheddi M.

**Abstract :** This study relates to how water content in some clay soils affects their structure by increasing or decreasing the volume. These cyclic phenomena of swelling-shrinkage cause parasitic stresses in structures and at the foundation. These stresses create damage in buildings, highways, pavements, airports and structures lightly loaded. This study was conducted on soil from a site near the hospital of N'gaous (Batna), whose soil is at the origin of cracks in the filler walls of the hospital. After a few years of exploitation, and according to the findings of experts in subdivision of construction and urbanism (SUCH), cracks appeared just after the heavy rains that the region experienced in 1987. Our study shows the need to become aware of the importance of damages occasioned by swellings by adopting construction techniques to solve this problem. The study is to determine a methodology to take into account the effects of swelling in calculating long-term foundations.

**Keywords :** clay, swelling, shrinkage, swelling pressure, compressibility

**Conference Title :** ICCEAUE 2024 : International Conference on Civil, Environmental, Architectural and Urban Engineering

**Conference Location :** Tunis, Tunisia

**Conference Dates :** October 24-25, 2024