

SUMMARY

Observation and measurement of long-term volumetric deformation of clay are important in tackling different geotechnical and geological issues. The area of interest is the northern part of Vienna Basin, where Miocene clays sedimented. It is locally known as Brno Tegel. The Thesis deals with the secondary compression of clays, which can be defined by the $C\alpha/Cc$ concept. The one-dimensional creep can be determined using the numerical values of the coefficient of secondary compression $C\alpha$ and subsequently the thickness of overburden of sediments can be estimated. The two different theories, known as Hypothesis A and B are also discussed, which have been used to interpret the effect of creep during the primary consolidation phase.

The laboratory measurements of long-term oedometric tests are presented for two undisturbed samples and one reconstituted sample of Brno clay. A nonstandard behaviour in uniaxial creep is also discussed, namely the observed diffusion collapse.