

# Consolidation Testing

Alliance employ the best specialist laboratory people in the commercial sector investigating soil settlement and swelling potential. We use the latest GDS Automated Oedometer Machines and GDSLAB control and data acquisition software. This allows us to provide a complete array of tests beyond those which a hanging weight oedometer can perform.

Settlement is the most common reason for the failure of foundations and, therefore, is critical to understand the mechanics of settlement. The consolidation test gives a guide to the amount of consolidation which will occur on-site and the rate at which it proceeds. There may be further settlement when consolidation nears completion, known as secondary settlement, due to 'creep' in the soil mass.



## Variables Determined

- **M<sub>v</sub>** Coefficient of Volume Compressibility
- **C<sub>v</sub>** Coefficient of Consolidation
- **k** Permeability
- **C<sub>c</sub>** Compression Index
- **C<sub>r</sub>** Recompression Index
- **C<sub>α</sub>** Secondary Compression Index
- **e** Void Ratio
- **S** Degree of Saturation
- **P<sub>c</sub>** Preconsolidation Pressure (Casagrande Method)
- **OCR** Over Consolidation Ratio

