

25 Soil Testing - Consolidation

One-dimensional Consolidation

The One-dimensional Consolidation test is used to determine the consolidation characteristics of soils of low permeability. Tests are carried out on specimens prepared from undisturbed samples. Data obtained from these tests, together with classification data and a knowledge of the soils loading history, enables estimates to be made of the behaviour of foundations under load.

Consolidation Apparatus

BS 1377; EN 1997-2; ASTM D2435, D4546; AASHTO T216

- ◆ High capacity – 8800 kPa on 50 mm diameter specimens using 11:1 beam ratio
- ◆ Triple beam ratio, 9:1, 10:1, 11:1
- ◆ Compact unit ensures maximum space saving

The ELE Oedometer is rigidly constructed to ensure minimum frame distortion. The frame is designed to load the specimen through a yoke assembly and one of three alternative beam ratios. The beam is fitted with a counterbalance weight and beam support jack.

The cell platform will accept the complete range of ELE consolidation cells and is fitted with a central spigot to ensure accurate centring of the cell under the loading yoke. Dimensions without hanger 711 x 203 x 508 mm (l x w x h). Weight 22 kg.

Ordering Information

EL25-0402 Consolidation Frame supplied without dial gauge and weights.

Accessories

EL25-0408 Set of Weights. 100 kg comprising 9 x 10 kg, 1 x 5 kg, 2 x 2 kg, 1 x 1 kg. Weight 100 kg. For individual weights see EL26-2137 to EL26-2147.

EL25-0429 Floor-mounting Stand. A versatile modular steel stand. Holes in the shelf are provided for securing up to three EL25-0402 Consolidation Frames. Dimensions 610 x 915 x 865 mm (l x w x h).



Vertical Settlement Measurement

Various methods of measuring vertical settlement can be supplied. These range from dial gauges to displacement transducers. All devices comply with the accuracy specified in BS 1377, ASTM D2435 and D4546. Displacement transducers are supplied with a calibration certificate.

The table below shows the range of devices available for fitting to the EL25-0402 Consolidation Frame. Transducers are supplied complete with mounting brackets as required.

Ordering Information

| | BS | ASTM |
|--|-----------|-----------|
| Dial gauge 10 mm travel x 0.002 mm div | EL25-0440 | - |
| 10 mm displacement transducer fitted with 5 pin DIN plug | EL27-1649 | EL27-1649 |



Computer Controlled Recording and Analysis

Geotechnical laboratories make extensive use of computers and automated testing, and we offer specially written software packages designed to record and analyse test data. Presentation of results is in test report format, giving geotechnical engineers total control over all areas of analysis where an engineering judgement is required.

Software packages are described in Section 27.