

# 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 DD ENV 1997-2; ASTM D2435, D4546; AASHTO T216

- High capacity- 8800 kPa on 50mm 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 508mm (l x w x h). Weight 22kg.

### Ordering Information

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

### Consolidation Cells

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

- Fixed ring type
- Integral water reservoir
- Choice of three sample sizes

The ELE fixed ring consolidation cells are manufactured from corrosion-resistant materials and conform to the requirements of the relevant standards. An integral water reservoir is incorporated in the cell which allows the specimen to be inundated when required. All cells are supplied complete with upper and lower porous disc, pressure pad and cutting (specimen) ring.

### Typical Loading

The table below shows typical loading of cells giving unit stress when used with EL25-0402 Consolidation Frame.

Cell model no.	EL25-0455	EL25-0479	EL25-0503
Application	High pressure	ASTM	BS
Specimen dia	50 mm	2.5 inch	75 mm
Specimen area	1963 mm <sup>2</sup>	4.909 inch <sup>2</sup>	4418 mm <sup>2</sup>
Beam ratio	10:1	10:1	9:1
Load	1kg	1.55kg	1kg
Stress	50 kPa	1,000 lb/ft <sup>2</sup>	20 kPa
Typical max stress	8 MPa	103,200 lb/ft <sup>2</sup>	3.2 MPa
Stress for 1 kg	50 kPa	645 lb/ft <sup>2</sup>	20 kPa

### Consolidation Cells Ordering Information

Nominal sample diameter	50mm	2.5 inch	75 mm
Consolidation Cell complete	EL25-0455	EL25-0479	EL25-0503
Calibration disc	EL25-0461	EL25-0485	EL25-0509

### Accessories

- EL25-0440** Dial gauge, 10mm travel x 0.002mm div.
- EL25-0445** Dial gauge, 0.5in. travel x 0.0001in. div.
- EL25-0408** Set of weights 100kg comprising, 9 x 10kg, 1 x 5kg, 2 x 2kg, 1 x 1kg.