

CONSOLIDATION TEST SET

STANDARDS: ASTM D2435, D3877, D4546, AASHTO T216, CEN ISO/TS 17892-5, BS 1377:5

The one-dimensional consolidation test of a soil sample enables to ascertain the settlement characteristic over a given period of time. Loads are applied with progressive increases and the settlement values are read on a dial gauge.

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 behavior of foundations under load.

The Front Loading Oedometer is rigidly manufactured from aluminum alloy casting to provide a high degree of accuracy with any frame distortions under load. The frame is designed to load the specimen through a lever arm assembly and one of three alternative beam ratios as 9:1, 10:1 and 11:1. The beam is fitted with a counter balance weight and beam support jack. The cell platform will accept the complete range consolidation cells and is fitted with a central spigot to ensure accurate centering of the cell under the loading.

Bench for Consolidation is 3 Oedometer capacity.

The fixed ring Consolidation Cells are manufactured from corrosion-resistant materials and conform to the requirements of the relevant standards. All cells are supplied complete with Upper and Lower Porous Disc, Pressure Pad and Cutting (Specimen) Ring. Any Consolidation Cells are listed below can be chosen. Any Dial Gauges and Set of Weights are listed below can be chosen.

Apparatus for prepare Consolidation Samples and Calibration Disc should be ordered separately.



CONSOLIDATION COMPLETE SET

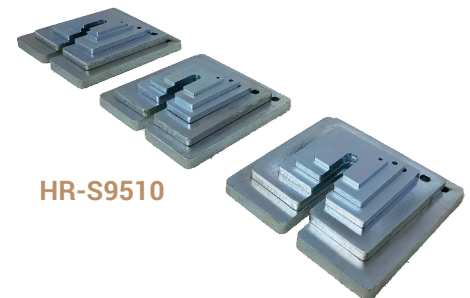
| Product Code | Product Name | Dimensions (mm) | Weight (kg) |
|--------------|--|-----------------|-------------|
| HR-S9000/1 | Front Loading Oedometer | 870x830x1600 | 30 |
| HR-S9000/2 | Bench for Consolidation, 3 Oedometer Capacity | --- | 20 |
| HR-S9100 | Consolidation Cell, Ø 50 mm | Ø 50 | 5 |
| HR-S9100/1 | Upper and Lower Porous Disc for Ø 50 mm Cell | --- | --- |
| HR-S9100/2 | Pressure Pad for Ø 50 mm Cell | --- | --- |
| HR-S9100/3 | Cutting (Specimen) Ring for Ø 50 mm Cell | --- | --- |
| HR-S9100/4 | Calibration disc for Ø 50 mm Consolidation Cell, stainless steel | --- | --- |
| HR-S9100/5 | Apparatus for prepare Consolidation Sample for Ø 50 mm samples | --- | --- |
| HR-S9200 | Consolidation Cell, Ø 63,5 mm | Ø 63.5 (2.5") | 6 |
| HR-S9200/1 | Upper and Lower Porous Disc for Ø 63,5 mm Cell | --- | --- |
| HR-S9200/2 | Pressure Pad for Ø 63,5 mm Cell | --- | --- |
| HR-S9200/3 | Cutting (Specimen) Ring for Ø 63,5 mm Cell | --- | --- |
| HR-S9200/4 | Calibration disc for Ø 63,5 mm Consolidation Cell, stainless steel | --- | --- |
| HR-S9200/5 | Apparatus for prepare Consolidation Sample for Ø 63,5 mm samples | --- | --- |
| HR-S9300 | Consolidation Cell, Ø 75 mm | Ø 75 | 7 |
| HR-S9300/1 | Upper and Lower Porous Disc for Ø 75 mm Cell | --- | --- |
| HR-S9300/2 | Pressure Pad for Ø 75 mm Cell | --- | --- |
| HR-S9300/3 | Cutting (Specimen) Ring for Ø 75 mm Cell | --- | --- |
| HR-S9300/4 | Calibration disc for Ø 75 mm Consolidation Cell, stainless steel | --- | --- |
| HR-S9300/5 | Apparatus for prepare Consolidation Sample for Ø 75 mm samples | --- | --- |
| HR-G0875 | Analog Dial Indicator, 10 x 0,01 mm | --- | --- |
| HR-G0876 | Analog Dial Indicator, 30 x 0,01 mm | --- | --- |
| HR-G0877 | Digital Dial Indicator, 12,7 x 0,01 mm | --- | --- |
| HR-G0878 | Digital Dial Indicator, 25 x 0,01 mm | --- | --- |
| HR-G0879 | Digital Dial Indicator, 12.7 x 0,001 mm | --- | --- |
| HR-G0880 | Digital Dial Indicator, 25 x 0,001 mm | --- | --- |

HİRA TESTING EQUIPMENT



Set of Weights

| Product Code | Set of Weights for Consolidation |
|--------------|--|
| HR-S9500 | 16 kg Set (2x 5 kg, 1x 2 kg, 2x 1 kg, 3x 0,5 kg, 2x 0,25 kg) |
| HR-S9510 | 32 kg Set (1x 10 kg, 3x 5 kg, 2x 2 kg, 1x 1 kg, 3x 0,5 kg, 2x 0,25 kg) |
| HR-S9520 | 50 kg Set (3x 10 kg, 2x 5 kg, 3x 2 kg, 2x 1 kg, 3x 0,5 kg, 2x 0,25 kg) |
| HR-S9530 | 64 kg Set (4x 10 kg, 3x 5 kg, 2x 2 kg, 3x 1 kg, 3x 0,5 kg, 2x 0,25 kg) |
| HR-S9540 | 80 kg Set (6x 10 kg, 2x 5 kg, 3x 2 kg, 2x 1 kg, 3x 0,5 kg, 2x 0,25 kg) |



AUTOMATIC DIRECT/RESIDUAL SHEAR TEST MACHINE

STANDARDS: ASTM D3080; BS 1377:7; AASHTO T236, CEN-ISO/TS 17892-10

The test measures the consolidated drained shear strength of a soil material in direct shear. Automatic Direct Shear Test Machine is motorized with servo motor and measuring sensors are electronically connected to a digital readout unit to get accurate readings. Supplied with carriage assembly load hanger and integral 9:1, 10:1 and 11:1 lever loading device as standard. The loading arm which is used to amplify the vertical load on the shear box assembly can receive up to 50 kg of weight. The total load on the specimen can reach up to 5 kN.

The shear machine is driven by high resolution servomotor and gear box assembly. Speed range is fully steeples variable over the range 0.00001 to 9.9999 mm/min. 5 kN load cell is used for load measurement. 10 x 0.002 mm and 25 x 0.001 mm sensitivity displacement sensors are used for vertical and horizontal displacement measurements respectively. Displacement limits are controlled by limit switch. Maximum Vertical load is 5000 N from 0 to 500 N, applying using 10:1 beam loading device.

The machine shear box tests on 60 mm and 100 mm square, Ø60 mm round, Ø100 mm round and Ø2,5" round samples. All Shear box assemblies can contain water that surrounds the specimen. The Assemblies consist of a shear box with a rigid wall square, complete with a Vertical Loading Pad grooved back face, a Grooved Retaining Plate, 2 pieces Porous Plates, 1 piece Plane Grid, 2 pieces Perforated Grids and software. Direct Shear Test Machine Supplied with 50 kg Slotted Weight Set.

Shear Box Assembly, Specimen cutter and Extrusion Dolly should be ordered separately depending on the sample size.

Touch Screen Graphic Display Automatic Control Unit

Real time Load vs. Displacement or Stress vs. Displacement graphs can be seen on the Graphic Display. The Software calculates both the maximum and resilient shear stress.

After minimum three tests, the software calculates the cohesion value "c" and shear resistance angle "φ" by using the best straight line fit.