RING SHEAR TESTING MACHINE - TORSHEAR EMS

Torshear EmS is a versatile and fully automatic ring shear testing machine that benefits from the new low maintenance, efficient and environmentally-friendly Electromechanical Servoactuation (EmS) technology.

Ring shear test description

The test provides a procedure for performing a torsional ring shear test under a drained condition to determine the fully softened shear strength and nonlinear strength envelope of cohesive soils.

The fully softened strength is used to evaluate the stability of slopes that do not have a pre-existing shear surface. The fully softened shear strength also corresponds to the peak shear strength of a normally consolidated specimen. This test method focuses on the use of a reconstituted specimen to measure the fully softened strength.

This test is performed by shearing a normally consolidated, reconstituted specimen at a controlled displacement rate until the peak shear resistance has been obtained.

Fully automatic

The TORSHEAR EmS can complete the whole test from consolidation to shear stage automatically; selecting the load (stress) for consolidation and a pre-defined shear speed for shearing stage offering a practical and accurate way to obtain reliable results without any need for manual intervention, reducing the risk of human error.

Complete stand-alone system

Total control of a single unit, including full test execution is achieved without the need of a PC. The user interface is based on a large 6” touchscreen color display permitting to start, pause and stop the test, choose the data recording mode, show the readings during the test execution and carry out the transducers calibration.

It comes supplied with a USB pen drive allowing unlimited storage, TXT format data output.

Totally new and ingenious software (optional)

- Allows the remote control, from a single PC, of multiple Torshear Ems machines. When the Remote Control mode is used, the PC software becomes the user interface and manages the main functions as well as the channels calibration by linear, polynomial and multi-coefficient curves.
- Can pilot up to six Torshear EmS units from one single PC with user able to select single or multiple unit batches.
- Once the software is installed and linked to the first TORSHEAR EmS, it is easy to add more units by enabling the associated LAN communication (IP address) without complications or extra costs.
- Calibrations of displacement transducers and load cells are stored as txt file and easy to recall, up to 10 calibration points can be recorded for each channel.

Clarity in results

- Test results are saved and displayed in real-time, speeding data capture.
- Results are then processed using Wykeham Farrance (WF)’s easy-to-use Geo-Analysis templates, written by experts around international standards allowing you to concentrate on analyzing your materials; not on programing your testing machine.

Stainless steel shear boxes

40 cm2 stainless steel ring shear box fitted with easily removable sintered porous stone.

Ensuring complete application of torsional force

Sintered porous stone with special pattern design guarantees torsional shear force application.

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SPECIFICATION

Maximum vertical stress: 1,200 kPa
Maximum shear stress: 1,000 kPa
Test Speed: from 0.00001 to 1000°/min
Specimen dimensions: Internal dia. 70 mm external dia. 100 mm
Sample area: 40 cm2
Sample thickness: 5 mm (various thickness available on request)
Weight approx.: 60 kg

STANDARDS

- BS 1377:7
- ASTM D6467
- ASTM D7608

FEATURES

- **Fully automatic standalone ring shear soil testing system** for performing torsional ring shear test in drained condition to determine the residual shear strength of cohesive soil.
- Managed by local user interface with **6” touch screen high resolution color display**
- **Environmentally friendly and quie**t with brand new Electromechanical Servoactuation (EmS) technology

- **Lightweight and compact,** Torshear EmS can be placed on a standard bench. Maximizes use of space in your laboratory.
- **Smart and easy-to-use with removable load cells and displacement transducers**. Simplifies testing, maintenance and calibration.
- **High-performing:** Maximum vertical stress 1,200 kPa; Maximum shear stress 1,000 kPa; Test can be perform with vertical load control or at constant volume.
- Infinite variable speed from **0.00001 to 1000°/min**, with pre-shearing stage selectable and adjustable number of cycles of shearing.
- **Lightweight and easy to clean**. Top-quality techno-polymeric materials offer excellent resistance to corrosion, wear and tear and to chemicals often mixed with soil specimens.

ACCESSORIES

27-WF22E02/3

Sintered porous stone for Torshear testing machine

30-WF6016/T16

Ring Shear Geo-Analysis MS EXCEL template conforming to ASTM D6467

30-WF6016/T3

Ring Shear Geo-Analysis for MS EXCEL Template according to BS 1377:7

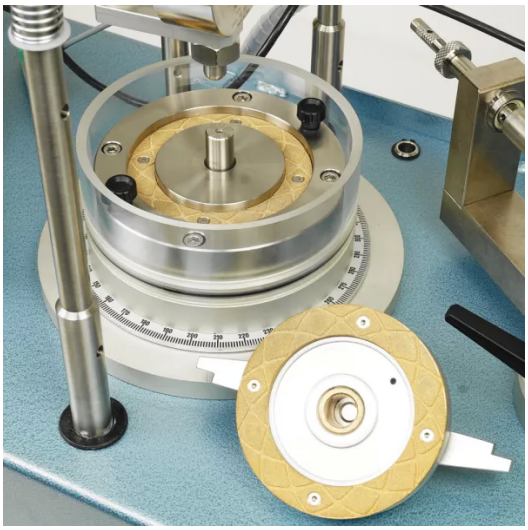
27-WF22E02/SW

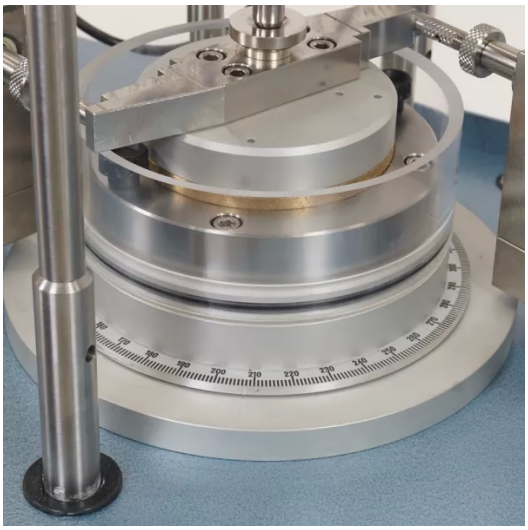
Torshear EmS software activation code. For remote PC control and data aquisition from Torshear EmS (27-WF22E02), multiple units connectable to a single PC

ORDERING CODE

27-WF22E02

TORSHEAR EmS - Electromechanical servoactuated automatic ring shear machine. 220-100 V / 50-60 Hz / 1 PH.





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