

Achieve new levels of 24/7 Automatic Operation, Accuracy & Flexibility when Shear Testing

- Automatic Operation – reduces testing time
- Compact footprint – saves laboratory space
- Less noise and reduced energy consumption
- Simple and easy to operate – improves efficiency
- Save configurations for easy set-up of multiple and repeat tests
- Includes latest DS8.0 Software
- Control up to 16 ASD machines from one PC
- 7" waterproof, colour, graphical touchscreen
- Improves test quality and better flexible reporting



New
SUPPLIED WITH
LATEST DS8.0
SOFTWARE

SoilTest PRO Range
AUTO Soils Direct Shear (ASD)

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AUTO Soils Direct Shear (ASD)

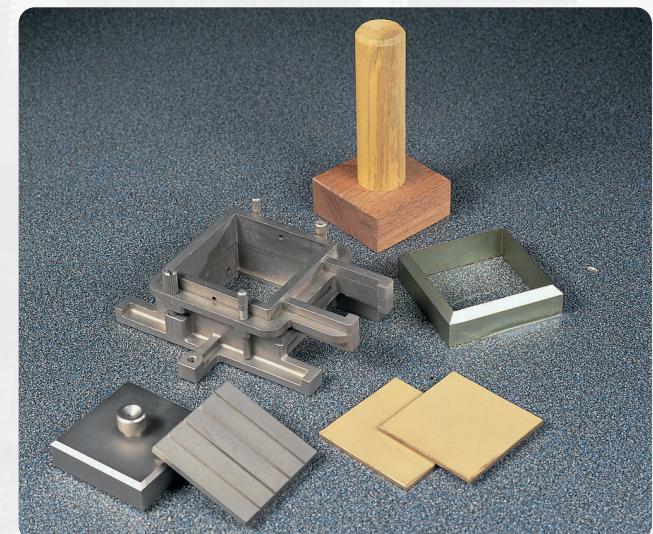
Designed and engineered for geotechnical laboratories to increase throughput of soil samples with exceptional accuracy and reliability.

Shear testing of soils

Soil strength is vitally important in most construction projects; if soils fail, embankments collapse and structures fail, with potentially catastrophic consequences. The measurement of shear strength is therefore key to the understanding of soil stability.

Soil derives its shear strength from cohesion between particles (stress independent) and frictional resistance between particles (stress dependent). Shear failure occurs when the stresses between the particles are such that they slide over each other, resulting in slippage. Shear strength is not a fundamental property of soils because it depends on in-situ conditions, so it is important for laboratory test conditions to be similar to field conditions, in terms of stress, moisture and density.

A direct/residual shear apparatus conducts shear tests in the laboratory on specimens that are prepared in shear boxes which are available in a variety of sizes.



The ASD is fully automatic, dispensing with the need for dead weights and employing a microprocessor controlled stepper motor, which provides speed control, accuracy and consistency of testing. The first stage of the test is consolidation, after which the specimen is sheared at a constant speed that is determined by the consolidation stage. The measurement of horizontal and vertical displacement is measured automatically by highly accurate transducers, which are supplied with traceable calibration certificates.

The advantage of automatic over manual

Traditional Direct/Residual Shear frames require frequent operator involvement to progress from one stage of the test to the next, but this is a time-consuming activity and creates opportunities for human error.

The test runs automatically without user intervention (apart from removing the shear box pins prior to first shearing stage) which saves valuable time. The built-in electronic stepper motors ensure precise control of loading over the entire 15 kN consolidation and 5 kN shear range. This design avoids the need for a compressor which improves the accuracy of loading, and can dramatically lower noise levels in a busy laboratory.

AUTO Soils Consolidator features

- Fully automatic – reduces testing time
- Compact footprint – saves laboratory space
- Less noise and reduced energy consumption
- Simple and easy to operate – improves efficiency
- Save configurations for easy set-up of multiple shear boxes and repeat tests
- Includes DS8.0 One-Dimensional Consolidation Software with auto-analysis
- Control up to 16 ASD machines from one PC
- Wide range of shear boxes available
- Complies to the following Standards:
 - BS 1377-7
 - ISO 17892-10
 - ASTM D3080 / D3080M
 - AASHTO T-236

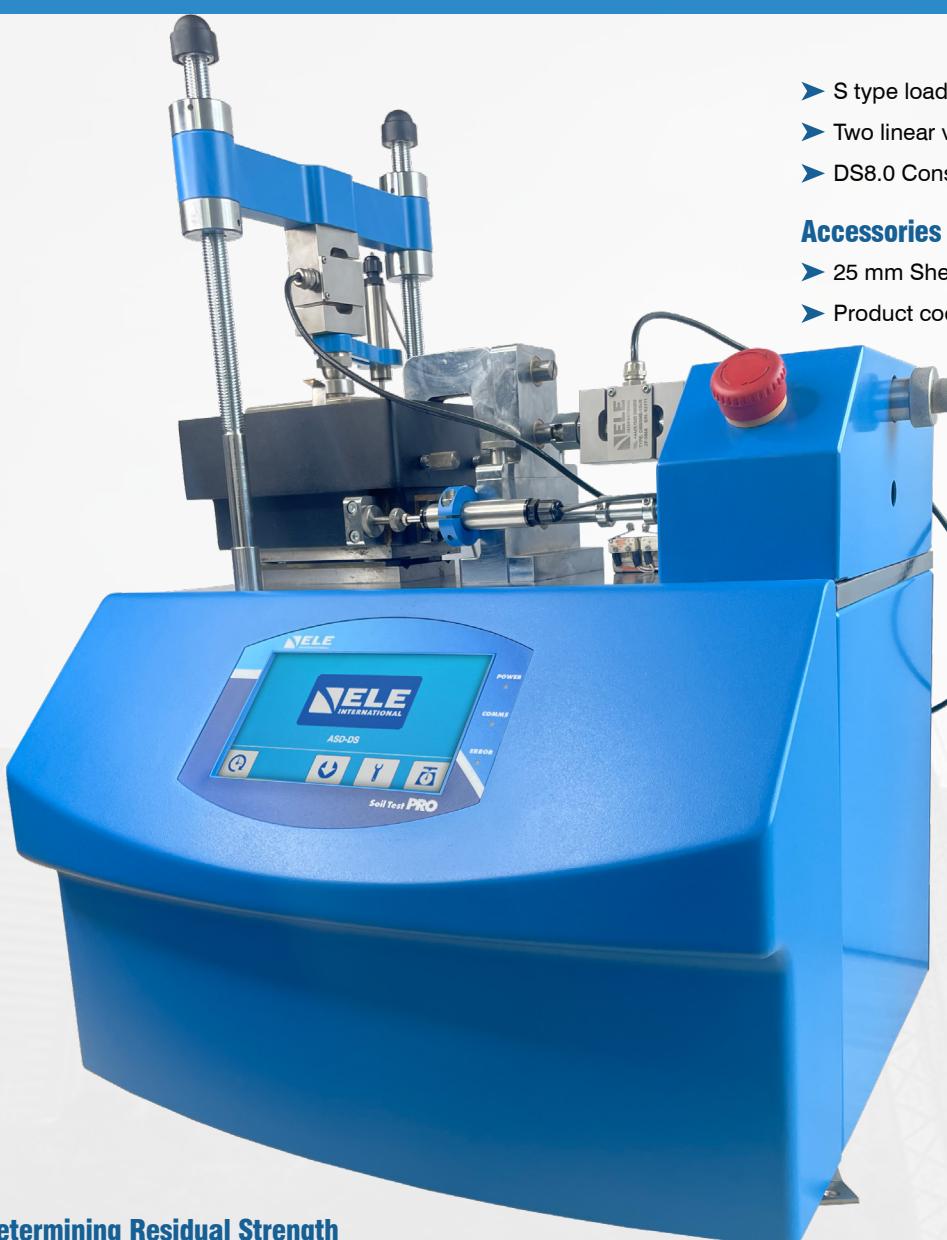
ASD Key Features

- Ease of maintenance and setup with an easy release consolidation arm and simple carriage drain to remove excess liquid on test completion
- 7" waterproof, colour, graphical touchscreen
- Multi language
- Swan-neck loading design avoids friction error
- No compressor – stepper motors improve accuracy across entire 15 kN consolidation and 5 kN shear range
- 15 kN vertical load capacity with variable speed
- Supports multi-stage tests and modification of stages mid-test
- Improves test quality and better flexible reporting

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ASD supplied complete with



- S type load cells
- Two linear variable displacement transducers (LVDT)
- DS8.0 Consolidation Software

Accessories

- 25 mm Shear Travel Accessory (available on request)
- Product code: 27-1655



7" HD Colour Display

The ASD has a large waterproof, high-definition colour graphical touchscreen which provides a display of set-ups, logs, graphs and calculations, as well as user-defined views. The software is simple, easy to use and can save configurations for quick repeat testing.



The display is available with four languages: English, Spanish, Portuguese and French.

Determining Residual Strength

The residual strength of a soil sample can be determined by performing multiple direct shear tests on the same specimen until the residual shear stress remains constant at the subsequent shearing stages.

The ASD Complies to the following standards

BS 1377-7

Methods of test for soils for civil engineering purposes.
Shear strength tests (total stress).

ASTM D3080/D3080M

Standard Test Method for Direct Shear Test of Soils under Consolidated Drained Conditions

ISO 17892-10

Geotechnical investigation and testing - Laboratory testing of soil - Part 10: Direct shear tests

AASHTO T-236

Standard Method of Test for Direct Shear Test of Soils Under Consolidated Drained Conditions

DS 8.0 ATM Software

Data System Auto Test Management Software

Stay in full control with our systematic soil test management software

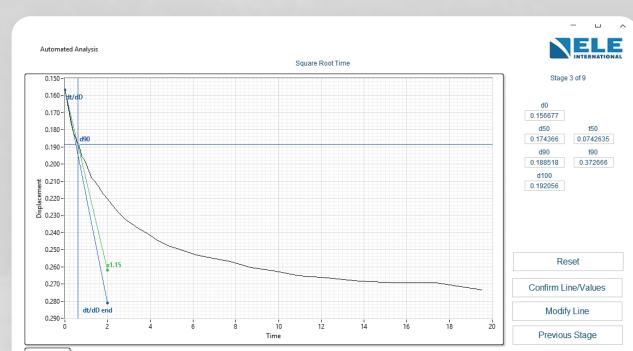
The ASD is compatible with DS8.0 software, the latest version of ELE's Data System soil test management software which is loaded with the current BS, ASTM, ISO and AASHTO standards, and compliant with Windows 7 and 10.

By simplifying control of the test procedure, DS8 lowers the cost of testing and frees staff time for other work. The ASD also speeds up test times by managing the set-up procedure; intuitively taking the operator through the process, ensuring that the correct standard is applied and that the set-up is appropriate for the sample and cell. Loading and unloading increments can be defined by users and configuration templates can be stored so that subsequent tests can be set up quickly and easily.

To increase the speed of testing, operators are able to set the ASD to skip steps automatically if required. It is also possible to change the target load during a test.

With Ethernet connectivity, DS8.0 is able to manage up to 16 machines simultaneously; each undertaking an individual test for automatic consolidation, manual consolidation or direct/residual shear. This connectivity enables users to monitor tests remotely 24/7, and also provides an opportunity for remote service diagnostics.

Real-time graphical outputs are available in the DS8.0 software, and operators now have the ability to make changes to tests as they proceed; target loads for subsequent stages can now be changed after a test has started, without having to restart the test from the beginning.



The reporting capability of DS8.0 has been significantly expanded over previous versions. For example, users now have the ability to select plots to be included in the report, and templates can be modified with results presented in an editable pdf format.



AUTO Soils Consolidator/Shear Specifications

	Consolidation	Shear
Frame capacity	15 kN	5 kN
Travel	15 mm	15 mm Standard, 25 mm Optional
Standards	BS 1377-7 / ASTM D3080/D3080M / ISO 17892-10	
Available range of Cell / Shear boxes*	mm inches	
Maximum sample size	60 / 100 Square	
Maximum piston travel	2.42 / 2.5 Round	
	100 mm Square	
Speed	26 mm	25 mm
Fast approach speed		10 mm per minute
Transducers		40 mm per minute
Maximum number of units per PC		Two linear variable displacement transducers (LVDT)
Unit display		16 (can be combination of shear and consolidation)
Dimensions W x D x H (mm)		High resolution, 7" colour touchscreen
Weight		520 x 450 x 740
Clearance Vertical/Horizontal		73 Kg
Power supply		270 / 220 mm
		90 - 240 V AC, 50-60 Hz, 1 ph

Ordering Information For AUTO Direct Shear ASD

Product Code	Product
25-0600/09	AUTO Direct Shear machine (ASD)
27-1655	25 mm Shear Travel Accessory (available on request)

Size	Available Range of Cell / Shear boxes*				Spares	Specimen Cutter 20 mm Thick	Specimen Cutter 25 mm Thick	Standards
	Shear Assembly with Porous Discs	Specimen Extrusion Tool	Calibration Block	Porous Disc				
60mm Square	26-2181	26-2189	26-2181/15	26-2181/10	26-2185	26-2186		BS1377-7
100mm Square	26-2197	26-2205	26-2197/15	26-2197/10	26-2201	26-2202		ISO 17892-10
2.42 inch Circular	26-2223	26-2222	25-0489/15	26-2223/10	26-2219	26-2220		ASTM D3080 / D380M
2.5 inch Circular	26-2213	26-2221	25-0490/15	26-2213/10	26-2217	26-2218		AASHTO T-236

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