

## DATA SHEET

### Rock shear box apparatus

ASTM D5607

#### MAIN FEATURES

- Shear box made in aluminium alloy
- Maximum axial and shear load capacity: 50 kN
- Reversible shear action with 48 mm stroke
- Double version available: analogic and electronic
- Data processing template available as accessory for the digital version
- 2 mould formers included in the testing configuration

#### GENERAL DESCRIPTION

This apparatus was originally developed at Imperial college, London, by Professor E. Hoek. It is a simple and practical method of determining the strength and slope stability of rock, both in the field and in the laboratory. The apparatus consists of a shear box designed to accept samples not larger than 115x125 mm, or alternatively cores up to 102 mm dia. The shear box consists of two halves, the upper being connected to two rams for reversible shearing action and the lower connected to a ram for normal load application. The loads are recorded by Bourdon tube load gauges or by pressure transducers (in this case external datalogger is needed). The normal loading system is complete with an adjustable low friction pressure maintainer to absorb volume changes of the specimen during the shearing action and to ensure a constant vertical stress. It is conforming to ASTM D5607.

Two versions are available:

- **Basic model.** It is supplied complete with: 5 digital gauges 25x0.001 mm (4 vertical and 1 horizontal); 2 mould formers; 2 hand operated pumps for lateral and vertical load fitted with Bourdon gauges. The pump for vertical load is fitted with a pressure maintainer to assure uniform load during the test.
- **Electronic model.** It is supplied complete with; 5 potentiometric transducers with 25mm travel (4 vertical and 1 horizontal); 2 mould formers; 2 hand operated pumps for lateral and vertical load fitted with Bourdon gauges; 2 pressure transducers for the direct acquisition of the load values. The pump for vertical load is fitted with a pressure maintainer to assure uniform load during the test.

Displacement and load readings shall be acquired by suitable datalogger that has to be add as accessory. Two versions can be used to complete the testing configuration: standard model with dedicated display suitable for laboratory use or with battery operated model for on-site use. For more info please refer to Related Products below and Accessories section.

The high alumina cement for the cementation of the sample is not included and have to be ordered separately. See Accessories

#### TECHNICAL SPECIFICATIONS

- Max. axial and shear load capacity (for both models): 50 kN
- Manometers range (for both models): 50 kN x 1 kN
- Displacement reading (for Basic model): 5 digital gauges 25x0.001 mm
- Displacement reading (for Electronic model): 5 potentiometric transducers with 25mm travel
- Max. sample dimensions: up to dia. 102 mm (for core specimens) and 115 mm x 125 mm (for prism specimens)
- Overall dimensions (loading frame only): 460x250x600 mm

## DATA SHEET

- Weight approx.: 45 kg

### ORDERING INFO

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#### **32-D0548/A**

Basic rock shear box apparatus with digital gauges to ASTM D5607

#### **32-D0548/D**

Electronic rock shear box apparatus with potentiometric transducers to ASTM D5607

### ACCESSORIES

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#### **Datalogger (only for electronic model 32-D0548/D)**

##### **82-P9008**

DATALOG 8, 8 channels **stand alone** multipurpose data logger.  
110-230V / 50-60Hz / 1 Ph.

##### **82-P9008/F**

DATALOG 8, 8 channels **stand alone** multipurpose data logger **battery operated with rigid carrying case** suitable for use on field.

##### **82-P9008/ELT**

Set of four cables for connecting load cells, pressure transducers, strain gauges, LDT / LVDT / potentiometric type displacement transducers to DATALOG 8 (82-P9008). Two set of cables are required.

##### **82-P9008/SOF**

DATACOMM 2 data acquisition software and LAN cable for PC connection of DATALOG 8 (82-P9008).

- Up to 8 datalogger (total 64 channels) can be connected to a single PC creating a modular network (LAN hub is required)
- Free user setting of channel groups (nr. and type of channels)
- Numerical and graphical display of the readings
- Fully customizable multi-diagrams function including multi-channels plotted against the same axes and / or one channel plotted in relation to another
- Data export ASCII format
- Possibility to save and recall different calibration files allowing quick transducers swapping

##### **32-P0070/6**

Excel data sheet for Direct Shear Strength Tests of Rock according to ASTM D5607

#### **Sample preparation**

##### **32-D0548/8**

Mould former

#### **High alumina cement**

##### **32-D0548/9**

High alumina cement for the cementation of the sample in the shear box. 50 kg bag.

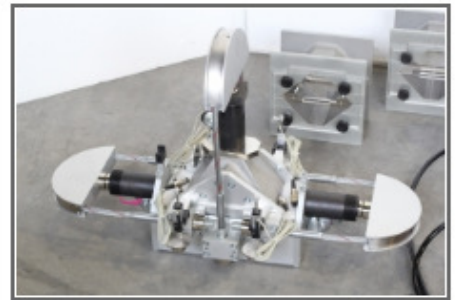
**DATA SHEET**



32-D0548/A: complete digital rock shear apparatus



32-D0548/A: Detail of the shear box apparatus fitted with 5 digital gauges (4 vertical and 1 horizontal)



32-D0548/D: Detail of the shear box apparatus fitted with 5 displacement transducers



32-D0548/D: Detail of hydraulic pumps fitted with Bourdon gauges and pressure transducers



82-P9008, DATALOG 8, 8 channels stand alone multipurpose data logger