

## S D INSTRUMENTATION Ltd

### CLEGG IMPACT SOIL TESTER Type CIST/882

#### Simple Tool for Checking Trench Re-instatement & Soil Strength



The Clegg Impact Soil Tester type CIST/882 manufactured by SD Instrumentation (SDi) provides a means for measuring and controlling soil strength and consolidation levels during trench re-instatement. It is also used to confirm uniform compaction over wide areas of ground, identifying poorly compacted areas and ineffective rolling of materials. A special lightweight version of the Tester is also available for checking sports turfs whilst a heavy duty version is supplied for testing harder materials and roadworks.

The *New Roads and Street Works Act 1991* sets out a Specification for the Reinstatement of Openings in Highways, creating the need for a tool to check the performance of trench filling operations and compaction levels of materials, and imposing penalties on undertakers who fail to meet the specified standards. The Clegg Impact Soil Tester provides a compact and reliable instrument for monitoring and controlling the quality of reinstatements while the work is in progress, avoiding the need for re-excavation should later tests reveal poor workmanship.

A simple test procedure was introduced by British Gas following extensive trials of the Clegg Impact Soil Tester in the field and in their engineering

research laboratories at Killingworth. Several thousands of the instrument are now being used throughout the United Kingdom and overseas, with operators employing these recommended test routines. Our website explains the test routine.

The Tester consists of a 4.5 kg compaction hammer operating within a vertical guide tube. When the hammer is released from a fixed height, it falls through the tube and strikes the surface under test, decelerating at a rate determined by the stiffness of the material within the region of impact. A precision accelerometer mounted on the hammer generates an electrical charge which is fed by a cable to a hand-held digital readout unit. The readout unit scans and filters the signal and registers the deceleration in units of Impact Value (IV). The Impact Value is an indication of soil strength and shows good correlation with results from CBR tests. Data from the Impact Soil Tester can therefore be used in a similar manner to results from CBR tests performed in the laboratory and in the field.

The Tester has been approved by the American Society for Testing and Materials and a Standard, under Designation No D 5874 was issued in 1995, entitled "Standard Test Method for Determination of the Impact Value (IV) of a Soil". A copy of this standard is available on request.

The Clegg Impact Soil Tester is designed manufactured and marketed by SD Instrumentation (SDi, UK) under an exclusive licence from Dr Baden Clegg, the Australian inventor.



# CLEGG IMPACT SOIL TESTER CIST/882 Continued

## CIST/882 HAND-HELD READOUT UNIT



The CIST/882 Readout Unit is held in the hand during testing. It displays readings of Impact Value (IV) and also shows the number of times that the hammer has been dropped during each test operation. Unlike previous models the user does not need to keep the 'On' button pressed during testing.

To carry out a test, the ground surface is brushed lightly with the foot to remove loose material and the guide tube is placed in position. With the digital readout switched on and held in one hand, the hammer is raised to a height of 450 mm as indicated on the hammer head and then allowed to fall freely. This procedure is repeated four times, the fourth reading is taken as the Impact Value.

Tables of target IV for a range of backfill and subgrade materials are given in the operating manual, enabling the operator to check the compliance of reinstatements with the specification levels.

The %CBR display and TREND inter-reading check is simply enabled / disabled by the 'On' button.



### Specification and Ordering Code

<b>CIST/882 Specification:-</b>	<b>Order Code:- CIST/882/4.5K</b>
Model Number	: CIST/882/4.5K
Hammer Weight	: 4.5 Kg.
Readout Display ( <i>alphanumeric</i> )	: Backlit – easy to view. Hand held readout unit.
Readout Range	: Up to 101 Impact Values (IV).
Power Source	: 3V : 2 x AA batteries located behind detachable rear sealed panel.
Battery Life	: 12 Month typical battery life - dependant upon frequency of usage.
Power 'On' & Controls	: Single momentary push button - also enables / disables %CBR Display.
Data Storage in Readout	: Not available. (But available with the CIST/883 and CIST/884 models).
Readout Displaying %CBR	: Enabled / disabled by pressing & holding the 'On' button. When enabled displays 4 <sup>th</sup> drop %CBR value (with Inter-drop IV check TREND algorithm).
Transit & Storage Case	: Type CIST/ATS/15. Aluminium case for added protection in transit.
Size & Weight (approx).	: 71 x 13 x 13 cm. Instrument weight 6.9 Kg. Packed weight in case 12.2 Kg.

Specifications subject to change without prior notice



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