S D INSTRUMENTATION
SD Instrumentation Ltd. Registered in England No. 6174219

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 fast microcontroller in the readout 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 is powered by a single 9V PP3 battery accessible in a pull-out drawer on the side of the readout unit.

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 SDi of Trowbridge 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 displays readings of Impact Value (IV) and also shows the number of times that the hammer has been dropped during each test operation.

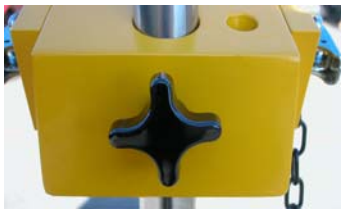
To carry out a test, the ground surface is brushed lightly with the foot to remove loose material and the guide tube is placed in position. With the digital readout switched on and held in one hand, the hammer is raised to a height of 450 mm as indicated on the hammer head and then allowed to fall freely.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

20 Kg HEAVY CLEGG IMPACT SOIL TESTER

Pictured on the left is the 20 Kg version of the Clegg Impact Soil Tester. This model is designed for use on harder materials such as those employed in roadworks. Here the tester may be used in obtaining data for estimating the traffic carrying potential of lightly surfaced low traffic roads. Technical Note No 3 (Aug 97), available from SDi, reports the results of field tests to evaluate the tester for estimating Benkelman Beam Deflection and the Surface Modulus of flexible pavements (Clegg Hammer Modulus, CHM).

The hammer has a mass of 20 Kg and a diameter of 130 mm. To simplify carriage and handling, the tester guide tube is fitted with wheels, making it into a pull-along cart, and the readout is fixed to the handle.



Data Sheets and Technical Notes on all Clegg Products and Services are available from SDi on request.

Product sales are supported by a full after-sales programme, catering for maintenance, repairs, supply of spare parts and the provision of a regular re-calibration service.

Specifications subject to change without prior notice

Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.

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