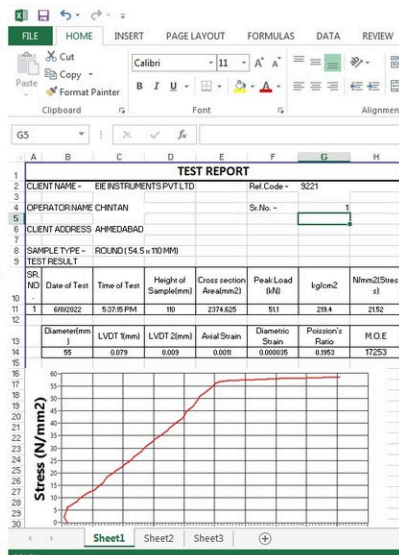




EIE INSTRUMENTS PVT. LTD.
(An ISO 9001:2015 Certified Company)

MODULUS OF ELASTICITY FOR ROCK - IS : 9221-1979



Standards:

- Based on **IS:9221-1979 (Reaffirmed 2021)** – "Method for Determination of Modulus of Elasticity and Poisson's Ratio of Rock Materials in Uniaxial Compression" and ASTM D7012

Purpose:

- To determine the **Modulus of Elasticity (E)** and **Poisson's Ratio (ν)** of rock materials under **uniaxial compressive load**, using axial and lateral strain measurements.

Test Type:

- Static uniaxial compression test within elastic limit of the rock specimen.

Features of the Set up:

- Automatic Test Execution : Once the machine has been switched on, the specimen positioned and centered, the only required operations are
- Set test parameters - including load rate
 - Press the start button
 - Tighten the pressure valve
 - The machine automatically: starts the rapid approach; switches to the test speed once the specimen comes into contact with the upper platen; automatically stops the motor upon specimen failure

- Release the pressure valve
- The test execution conforming to Standards can be easily proved.
- Working on 240V, 50-60Hz, single phase.
- Dual stage pump assuring fast piston approach and precise test execution
- Test execution conforming to IS:9221-1979
- Controllable pace rate from 1 KN/Sec to 10 KN/Sec.
- Auto stop after completion of each test.
- Soft platen-to-specimen contact and smooth load rate control from the very beginning of the ramp
- Supplied complete with a displacement sensor
- Displacement range : 0.01 mm to 15 mm
- Least count : 0.01 mm
- Accuracy : 1%
- Graph can be stored in computer and printed from the computer
- Direct report can be generated from the computer
- Software can be connected to any computer with I3 or above processor and operating system windows 10. Min 4 ram and 500 GB hard disk required.
- Displacement sensor can be adjusted as per the size of the sample.
- **Rock sample has to be surface grinded, capped and levelled**



Frame:

- Four column high stiffness welded frame tested for stability.
- Heavy duty spherical seat , allowing initial free alignment at the initial contact with the specimen and automatic jamming up to the end of test.
- Surface hardness of platen is 55 HRC, flatness tolerance 0.03 mm. Traceable certificate of surface hardness available on request.
- Piston travel limit switch
- Emergency stop button

Salient features of data manager PC software:

- Multi-channel input for strain and load data
- Real-time data capture and graph plotting
- Two way communication i.e machine operates from computer and from the touch screen controller both (Start, stop, save data and save graph)
- Results directly saved in excel file
- Graph also saved in excel file
- Capable to save customer name, other details of customer, ageing of test specimen, identification mark of the test specimen, date and time of testing
- Capable to save customer name, other details of customer, ageing of cube moulds, identification mark of the cube mould, date and time of testing
- Capable to print direct report from the computer
- Capable to select different test parameters like pace rate, sample size and area from the computer (software)
- Stress Vs. strain graph
- Direct determination of the poisson's ratio and MOE in software

Report Contents:

- Rock type and source
- Specimen dimensions
- Axial and lateral strain readings
- Graphs: Stress vs Axial strain, Stress vs Lateral strain
- Modulus of Elasticity (E)
- Poisson's Ratio (ν)
- Test date and operator

Ancillaries required for the test (at extra cost)

- Capping material (e.g. sulphur compound)
- Capping set
- Calipers/micrometers for dimension measurement

**Note:**

- **It is recommended to use the machine with 3 KVA servo stabilizer**

Details of Modulus Of Elasticity Attachment To CTM Automatic With Data Acquisition System And Software:

- Modulus of elasticity attachment to Automatic Pace Rate controlled CTM with data acquisition system and software. Will be supplied with one Horizontal and One vertical displacement sensor to measure the displacement in concrete specimen.
- **The CTM machine should be EIE Make only or has to be procured from us.**
- Least count of displacement : 0.01 mm
- No of Horizontal and vertical LVDT supplied : 1 no each (Additional LVDT at extra cost)
- Accuracy of displacement : 1% or better

Technical Specification

- Capacity : 500 Kn (Higher Capacity available)
- Platen size in mm : 200 mm Dia
- Ram Dia in mm : 120 mm
- Ram Travel in mm : 50 mm
- Vertical daylight in mm : 230 mm
- Horizontal daylight in mm : 230 mm
- Weight approx in kg : 292 Kg.
- Least count : 0.01kN
- Controller : 7" touch screen controller
- Accuracy : 1% or better
- Pace rate controlling accuracy : 10% (1% accuracy also available at extra cost)
- Least count of displacement : 0.01 mm
- Measuring accuracy of displacement : 1% or better

- Overall Dimensions in Inches (L x W x H) :
- Weight (Approx.) : 292 Kgs Approx.

Corporate Office:

A-1301, BVR Ek, Opp. Hotel Inder Residency,
Near Gujarat College, Ellisbridge,
Ahmedabad-380 006.
Phone : (079) 6621 1234
Website : www.eieinstruments.com

Calibration Laboratory:

Survey No. 1098, Nr. Mahakali Temple,
Opp. Primary School, Village Kubadthal,
Tal-Daskroi, Ahmedabad-382 433.
Phone: (079)-3520 8300
E-mail : info@eieinstruments.com

GST TIN No. : 24AABCE4018L1ZU
I.T. PAN No. : AABCE 4018L
IEC No. : 0813026598 Dt. 04/03/2014
CIN No. : U29199GJ2004PTC045078
TAN No. : AHME00572F

