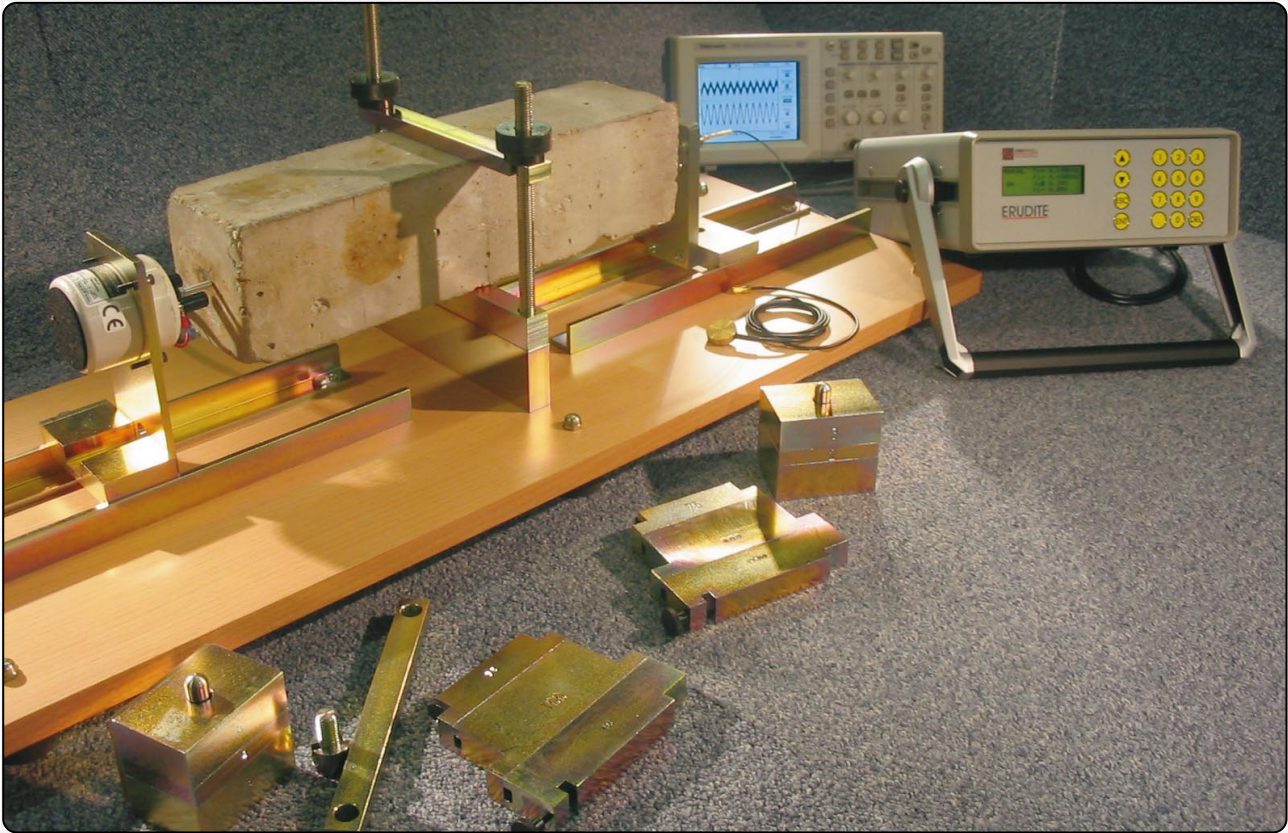


# ERUDITE MkIV



## Used the world over to test -

- Concrete
- Ceramics and refractories
- Stone and rock
- Carbon and graphite

## Automatically measures -

- Fundamental resonant frequencies - longitudinal, torsional and flexural
- Damping constant

## Can be used to determine -

- Dynamic modulus of elasticity
- Dynamic modulus of rigidity
- Dynamic Poisson's ratio
- Ultrasonic pulse velocity

## KEY FEATURES

- Automatic mode: For fast testing - automatically sweeps through a range of frequencies.
- Manual mode: allows user to analyse waveforms on an oscilloscope and provides more control and flexibility in testing.
- Battery-backed data storage of experimental results.
- RS232 Serial port enabling direct connection to a PC or printer.
- Sealed membrane switch panel for use in dusty and dirty environments.

## SPECIFICATION

### Measurement Ranges

- Frequency range: 1Hz to 100kHz
- Frequency resolution:
  - 1-99.99Hz = 0.01Hz
  - 100-999.9Hz = 0.1Hz
  - 1000-9999Hz = 1Hz
  - > 10kHz = 10Hz
- Output voltage: 0 to 2V pk-pk into 3W load (0.707V R.M.S. into 3W, 1.5W).
- Output monitor: 0 to 2V pk-pk from BNC socket on rear panel for oscilloscope 'X' input.
- Input monitor: 0 to 2.5V pk from BNC socket on rear panel for oscilloscope 'Y' input.

### Display

- Frequencies, voltages and option menus displayed on a 20 character x 4 line liquid crystal display.

### Keypad

- 16 key sealed membrane, for entering data and control parameters.

### Drivers

- Contact vibrator for large mass specimens.
- Electro-magnetic air gap driver for small mass specimens.

### Vibration Sensors

- Miniature accelerometer for large mass specimens.
- Electro-magnetic air gap receiver for small mass specimens.
- Surface mounting accelerometer for transverse mode tests.

### Environmental

- Power supply: 110/230V, 50/60Hz single phase AC (user selectable)
- Operating Temperature Range: 0°C to 40°C
- Packaging (std kit only): 3 cartons.
- Weights: Net 27kg, Gross 32kg, Volumetric 40kg

## KIT OPTIONS:

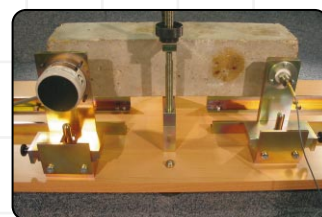
The standard kit includes everything you need to carry out longitudinal resonance tests – ideal for freeze-thaw testing for instance.

### Standard Kit:

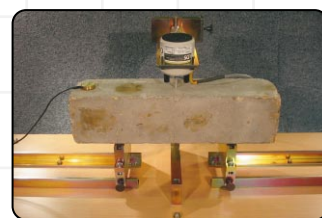
- Test bench with accessories for longitudinal testing
- Electronics unit
- Vibrator assembly
- Accelerometer assembly

### Optional Extras:

- Torsional Testing Kit
- Flexural Testing Kit
- Pickup Kit – includes surface mounting accelerometer and air plates (required for flexural testing or small samples)
- Oscilloscope and connecting leads (as shown on front page photo)



Torsional Testing Kit



Flexural Testing Kit

## STANDARDS

Resonant frequency tests are specified for various materials as follows:

### Concrete:

BS1881: Part 209, ASTM C 215, ASTM C 666 and JIS A 1127

### Stone and rock:

EN 14146

International Society for Rock Mechanics 'Suggested Methods for Determining Sound Velocity'

### Ceramics, refractory materials and glass:

ASTM C 623, C 848, C 885

### Carbon and graphite:

ASTM C 747

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