

ANNEXURE TO TENDER NO. DPS/MRPU/1/3/3536

1. Description of the item:

ULTRASONIC PULSE VELOCITY TESTING INSTRUMENT WITH TRANSDUCER

General requirements:

- Instrument shall have rugged high resolution touch screen with intuitive user interface for measuring and analysis of the measured data.
- Settings directly accessible on measuring screen
- Instrument shall support metric units and English language
- All the settings of instruments must be directly accessible on measuring screen
- On board storage and review of waveforms
- Robust construction for on-site test requirements

Equipment must facilitate following measurements on specimens:

- Pulse velocity
- Automatic surface velocity calculation according to standards
- Direct calculation of Modulus of elasticity (E) on the instruments
- Compressive strength correlation
- Determination of depth of perpendicular cracks
- Line Scan
- Area Scan
- Measuring P and S wave velocities on the same screen
- A-Scan update rate up to 25 Hz
- Zoom and scroll for precise A-Scan inspection
- Dual cursor for manual A-Scan evaluation
- Separate cursor to measure signal amplitude
- Automatic and manual triggering and user adjustable trigger threshold
- Data logging to set-up automated test sequence for long term measurements
- Countdown timer to indicate time to next measurement
- Graphical indication of pulse velocity development on screen

Results from area scan shall facilitate following:

- User definable color classification based on pulse velocity / transmission time
- User definable grid pattern for small to large scale measurements
- All measurements can be edited (deleted, re-measured)

The instrument shall consist of the following.

- Pundit touch screen instrument
- Transducers - 54 kHz - 2 Nos
- BNC cables 1.5 m
- BNC adapter cables (1.5 m long) – 2 Nos
- Couplant
- Calibration rod
- Battery charger
- USB cable
- DVD with necessary software
- Documentation (user manual, warranty cards etc)
- Carrying strap and Carrying case

2. Technical specifications

Technology	Ultrasonic pulse velocity (through transmission mode)
Range	0.1-7930 μm
Resolution	0.1 μs (< 793 μs), 1 μs (> 793 μs)
Display	7" colour display 800x480 pixel
Pulse Voltage	100 - 450 Vpp
Bandwidth	20 - 500 kHz
Receiver gain	1x – 10'000x (0 – 80dB) [11 steps]
Memory Internal	Internal 8 GB flash memory
Battery	Battery: Lithium Polymer, 3.6 V, 14.0 Ah Battery Lifetime : > 8h (in standard operating mode)
Operating temperature	Operating Temperature: 0°C – 30°C (Charging, running instrument) 0°C – 40°C (Charging, instrument is off) -10°C – 50°C (Non-charging)
Nominal Transducer Frequency	24 – 500 kHz
IP classification	IP54
Humidity	<95% RH, Non condensing
Standard	ASTM C 597-02, IS 13311

3. Accessories to be supplied

- Dry point shear wave Transducers set (Consisting of 2 dry point shear wave Transducer (40 kHz) and DPC calibration plate)

4. Warranty :

The Instrument shall be warranted for 12 months from the date of delivery/installation.

Training is required at Purchaser's premises for two persons.