SCXT 3000

Cross hole sonic logging system

SCXT3000 is a self-contained sonic logging system, suitable for testing concrete piles, barrettes and other mass concrete structures.

Engineered by James Fisher Testing Services' own development team, this ultra-sonic pile testing system is supplied with a military spec rugged notebook computer as standard, enabling the operator to perform testing in difficult conditions.

The electronic, stainless steel winch unit is easy to operate by a single user. Transducer cables can be supplied to customised lengths and are lifted with submarine type connectors which are also compatible with CS87 or CS97 transducers.

Benefits

- Calculation of FAT and energy changes
- Compliant to ASTM 6760 and AFNOR NFP94-160-1
- User friendly reporting software
- Military spec rugged notebook
- Accommodates up to 12 tubes and 66 profiles
- 320GB of storage
- Full equipment training available
- James Fisher Testing Services complete test package available

Software

The SCAP3000 comprehensive analysis software enables defects to be fully assessed on site, with up to 12 tubes (66 profiles). Signal threshold levels can be selected both manually and automatically.

The software enables the user to produce complete reports, including a pile data sheet to show tube references, levels, depths tested, plumbed lengths and interpretation. Signal threshold levels can be selected both manually and automatically.

The waterfall plot, signal energy plat and FAT (First Arrival Time) plots can be displayed individually or together, enabling the user to differentiate between features such as tube de-bonding and true concrete defects.

2D and 3D tomography modules provide easy to read visuals and each individual signal is also stored for post analysis if required.

How it works

SCXT3000 uses ultra-sonic transducers to measure the transit time of sound in concrete through steel tubes which have been installed in foundations during construction.

As the winch turns, the emitter sends ultra-sonic signals which travel between selected tubes to a receiver and are captured as a time / amplitude trace every 1cm of the pile length.

Single traces are combined into one sonic profile or waterfall plot. The operator can choose to display the first arrival time (FAT) and signal energy simultaneously. The first arrival time can be used to determine the ultrasonic pulse velocity if the distance between the tubes is measured.

Logging unit hardware	
Features	Rugged PC construction with IP65 protection Battery and/or mains powered 1cm logging interval Daylight viewable screen
Display	1GB RAM & MicroSD/MicroSDHC slot
Operating system	Windows 7 professional
Media	USB & DVD/CD RW
Ultrasonic frequency	50-60KHz
Depth range	100m cables supplied as standard
Depth interval of readings	1cm
Time base	200 to 100 microseconds
Typical path length	500 to 3000mm in hardened concrete
Storage	8GB RAM with 320GB hard drive Result data includes all individual signals and header information File size depends on depth of pile
Accuracy	Time base: ± 2% Depth: ± 1%
Power	External wall plug-in adapter for 110-240VAC inputs External cigar plug-in charger for 12-32VDC inputs
Battery life	4 hours +
Charge time	Approx 8 hours
Battery type	Li-on rechargeable
Protection	MIL-STD-810G and IP65 certified
Operating temperature	-20°C to +50°C
Dimensions	L 410mm x W 290mm x D 130mm
Weight	9Kg

Logging unit software	
Max no tubes/profiles	12 no tubes/66 profiles
Display	Waterfall/first arrival/signal energy
Analysis	% increase in signal arrival time and % decrease in signal energy against selectable reference zones
Referencing	Reference against either top of tubes or absolute level with automatic normalising of profiles
Output	Expanded or compressed vertical scale options or export of FAT data to ASCII
Tomography	2D and 3D tomography modules included as standard

Transducers	
Emitter probe	Piezo ceramic radial emitter type - 50 to 60KHz operation 25mm diameter 300mm length High pressure Jupiter connector
Receiver probe	Piezo ceramic tube receiver type 25mm diameter 300mm length High pressure Jupiter connector

All of our equipment is supplied fully calibrated to UK national standards.

SCXT3000 user training

We provide full training for all equipment purchased from JFTS. Our training sessions are created and led by our in-house experts, providing you with the skills and knowledge needed to operate the equipment safely, efficiently and with confidence.

We offer classroom and site training within the UK, on-site training overseas and virtual classroom training. No matter what your needs or technical experience we can provide the right training solution for your requirements.