JFTS Equipment

Specialist testing systems for construction, power and rail sectors.
Foundation testing systems:

**Pile integrity testing**

---

**TECO-LITE**

A wireless accelerometer time-domain system used to assess the integrity of concrete piled foundations.

The TECO-Lite system is supplied with an impulse hammer and Bluetooth accelerometer, which uses a rugged PDA to receive and analyse data wirelessly to measure the acceleration response of the foundation.

Data is transferrable via USB or Bluetooth to the windows-based TEAP analysis software for more detailed analysis and reporting. The flexibility of this system means it can be used to test precast concrete piles, cast-in-place foundations and timber piles of most dimensions. Typical anomalies that may be located include shaft discontinuities, overbreak or bulges, reductions in section or necking and zones of poor quality concrete.

**Benefits:**
- Wireless Accelerometer
- Rapid testing - up to 300 piles per day
- Operates for up to 8 hours on a full charge
- Compliant with ASTM D5882

---

**TECO**

A time-domain system used for checking the integrity of concrete piled foundations. Can be upgraded to combined TDR2/TECO.

This versatile system can be used to test pre-cast concrete, cast-in-place concrete and timber piles of most dimensions. It also comes equipped with a wired accelerometer, impulse hammer and rugged solid-state acquisition unit. The TECO is designed for speed of operation, low power consumption and ease of use in inclement weathers. A user-friendly menu system guides the operator and displays data in an easy to follow format. Data is easily transferred to TEAP analysis software via USB for analysis and reporting. The site unit can measure pile length and provides the operators with a choice of filters to suit the application.

**Benefits:**
- Operates for up to 8 hours on a full charge
- Rapid testing - up to 300 piles per day
- Backlit LCD screen for dark/ daylight working
- Storage for over 700 results
- Compliant with ASTM D5882

Can be combined with a TDR2 system.
TDR2 system

A lightweight, rugged pile integrity testing system for measurement in time and frequency domain.

Supplied with instrumented force hammer and geophone sensors, the TDR2 is designed for rapid testing all types of pile and can locate the depth and relative size of any significant pile shaft anomalies including over-break, cracks, reductions in section and zones of poor quality concrete. It can calculate the depth of anomaly and pile head stiffness.

The TDR2 unit is supplied as standard with both simulation and impedance profiling software, enabling detailed analysis of changes in the pile section and the influence of soil.

Benefits:
- Fast testing of 200 plus piles per day
- Operates for up to 8 hours on a full charge
- Backlight LCD screen for dark/daylight working
- Storage for over 700 results
- Includes software for analysis of pile and soil properties

PARAS

A hydrophone system for assessment of sub-structure foundations.

Designed to check the depth and integrity of concrete, masonry or steel foundations that are considered to be inaccessible or unsuitable for other non-destructive conventional pile testing techniques, PARAS offers an alternative.

Benefits:
- Compliant with NFP94-160-3
- Storage for over 700 results
- Can be combined with TDR2 pile testing system
- Used on sheet steel piling and foundations under structures
- Operates for up to 8 hours on a full charge
- Easy data export
- All weather signal acquisition

Can be combined with a TDR2 system.
SCXT3000

An ultrasonic cross-hole logging system for assessment of concrete piles, diaphragm walls and other mass concrete foundations.

Supplied with a high performance, battery powered aluminium Military spec rugged notebook computer as standard, enabling testing in challenging site conditions. The stainless steel electronic winch features a display and control to enable testing by a single user. Transducers are fitted with submarine connectors and supplied with 100m cables as standard, although other lengths are available if required.

Full analysis can be carried out on site, including 2D and 3D tomographic imagery and assessment of signal FAT (First arrival time) and energy. The versatile software enables the test reports to be customised to suit client requirements.

Benefits:
- Calculation of FAT and energy changes
- Compliant to ASTM 6760 and AFNOR NFP94-160-1
- Military spec rugged notebook
- Accommodates up to 12 tubes and 66 profiles
- 320GB of storage
- 1cm resolution and storage of every signal
- Waterfall, FAT and energy plots
- Automatic levelling of profiles

“The versatile software enables the test reports to be customised to suit client requirements.”
Foundation testing systems: 
Dynamic load testing

“The SIMBAT high speed opto-digital theodolite captures real-time elastic and permanent displacement without calculation producing more accurate test result.”

SIMBAT

Widely regarded as the most accurate dynamic load testing method available.

Suitable for both cast-in-place and pre-cast piles, the SIMBAT multi-blow dynamic load testing technique has been developed from the original method first formulated in the 1980s. Dynamic pile testing is generally seen as a much quicker and more cost-effective load performance test than traditional static test methods.

The SIMBAT system offers the following advantages over traditional dynamic testing techniques:

- The Simbat high speed optical/digital theodolite captures real-time elastic and permanent displacement without calculation.
- High and low strain blows enable conversion from dynamic to static reaction without the need to assume soil damping factors.
- Acceleration data is corrected using displacement data from the theodolite.
- A simulation model available and is based on accurate displacement rather than calculated velocity.

Benefits:

- Most accurate high strain dynamic testing method available
- Unique theodolite measures elastic and permanent displacement remotely
- Instant dynamic reaction and displacement readings
- Storage for over 700 results
- Compliant to EN ISO 22477-4
SLT2

A purpose-designed semi-automatic system to perform and monitor static pile tests and improve operational safety.

Whilst load is applied manually as for traditional static load test, the load, pressure and displacements are all monitored, displayed and recorded remotely on a supplied computer. This enables the operator to monitor the test safely and accurately from distance, eliminating the need for personnel to enter potentially dangerous testing zones.

The user-friendly software allows operators to view data in real-time whilst plotting the load settlement data and calculating rate of settlement as the test progresses. Should the test be stopped for any reason, data is backed up at every minute, to enable testing to recommence without any loss of data.

Benefits:
- Rugged transducers suitable for use on construction sites
- Supplied with notebook PC and SLT2 software
- Displacement and load displayed in real-time
- Load / settlement graph plotted in real-time
- All data recorded as test proceeds
- Includes test report feature

ASLT

A fully automatic system to perform and monitor static load tests on foundations with improved operator safety and test accuracy.

The ASLT system is supplied with a rugged site notebook, pre-loaded with the ASLT controlling software and calibrated load, pressure and displacement transducers. The ASLT has all the features of the SLT2, with the addition of a 110VAC powered hydraulic load maintainer. The system also incorporates a data acquisition battery back-up, which allows testing to continue using a manual pump in the event of a power failure, without the loss of any data.

The ASLT software enables the user to programme a test load template, for the load maintainer to follow automatically. This includes safety cut-outs in the event of excessive movement.

Benefits:
- Fully automatic control and logging
- Remote control option available
- Supplied with calibrated sensors to suit required range
- Data displayed in real-time
- Power failure protection
- Customised alarming conditions
The PLATEMAN system has been engineered for safe, accurate and efficient plate load testing. PLATEMAN provides dynamic plate load test information in real-time, allowing you to act on data immediately and with confidence. The Bluetooth wireless remote logging capability ensures the safety of site operatives, whilst the robust protective casing enables testing to be conducted in all weathers. The Rugged PDA’s graphical user interface enables the user to create custom loading profiles, and presents sensor information, test curves and rate of settlement in real-time. Estimated CBR can be calculated immediately and data can be transmitted by 3G/4G direct to your office for production of detailed test reports using the PLATEMAN PC software.

The system features a GPS tag for each test result and also includes a lightweight, adjustable reference beam to attach transducers. This that can be easily transported between test locations without dismantling and used in most site situations.

Benefits:

- Wireless remote logging
- Compliant to BS1377 and DIN18134
- Customisable loading templates prompts for reliable data
- Easy to handle and transport between test locations
- Test results viewed in real-time
- Instant estimated CBR calculation
- GPS location tag on all test results
- 3G/4G transmission of data direct from site possible
SPT Hammer Energy  **SPTMAN**

A user friendly system for measuring the energy of SPT hammers.

The SPTMAN system measures the actual energy transferred from the SPT trip hammers or window sampler drop weights, to the top of SPT drive rods. The hammer energy coefficient is then calculated by comparison with the theoretical potential energy.

The heart of the system is a purpose made rugged, portable signal analyser with solid-state memory, which is connected to any suitable SPTMAN instrumented rod. The standard instrumented rod supplied is 54mm diameter. Tests are carried out using an easy to follow menu display which enables the user to enter hammer information, and then display hammer energy and energy ratio in real-time.

**Benefits:**
- Instant hammer energy measurement and transfer coefficient calculation
- Storage for over 700 results

Complies with the relevant parts of both BS EN ISO 22476-3 and ASTM D 4633-10.

---

**SB2010**

The SB2010 large scale shear is the most up-to-date and technologically advanced fully automatic direct shear box available.

Designed and developed to determine the shear strength of soil specimens in accordance with BS1377 Part 7 1990, the SB2010 can also be used on geo-synthetics and can be supplied with inserts for testing smaller samples and core samples. The fully automatic SB2010 incorporates a PC controller for setting test templates, operating the machine, logging and displaying test data in real-time and also for reporting.

**Benefits:**
- Complies to BS1377 Part 7 1990
- Fully automatic loading and displacement measurement
- Integral reference arm, optional rated winch for easy handling
- Hydraulically controlled 100KN vertical loading system
- Precision stepper motor for 100KN horizontal loading
- Direct measurement of load by calibrated load cells
- Full calibration and support services available

---

**Soil testing systems: Direct shear**
The BGCMAP corrosion system has been designed to assess potential corrosion in steel below ground using LPR technologies to help develop effective maintenance schedules for the electrical power industry.

The BGCMAP system provides a rapid and reliable way of assessing the potential life of buried steelwork using Linear Polarisation Resistance (LPR) techniques to determine the rate of corrosion. This can be used to define effective and targeted inspection and maintenance schedules for lighting columns and transmission tower foundations. Powered by rechargeable batteries, the system integrates GPS technology to provide an accurate location, date and time stamp for every test result.

The BGCMAP system glossary is designed specifically for the transmission line and road lighting industry and can be classified in terms of structure, component, line, segment, circuit and street. The user is also able to enter details of the inspector as well as soil and weather conditions. The unit will automatically determine Ecorr and then apply a current to the structure from which polarization resistance Rp and corrosion current Icorr can be determined.

Benefits:
- On-site measurement of Ecorr, the full LPR curve, and polarization resistance
- Integrated GPS provides location date and time stamp for every test result
- Transmission line and road lighting terminology
- Storage for over 700 results
- Battery operated, rugged unit for use in remote locations
- PC based software for determination of Icorr, estimation of rate of steel loss and reporting
Railways:

Signal Lever Force Indicator (SLFI)

SLFI

The SLFI improves safety, by providing railway asset managers with the information they need to assess manually operated signal levers.

Excessive signal lever pull force often indicates that maintenance is required somewhere in the system. The Signal Lever Force Indicator (SLFI) can provide routine measurements that can be used as part of an ongoing maintenance regime to trigger targeted lubrication or component replacement. Furthermore, high pull forces can often be a cause of back injury to signal operatives and, by identifying these situations early, the SLFI supports pre-defined safe operating levels.

The real-time force measurements from the SLFI can be used to develop energy-efficient practices and form part of a training programme that demonstrates how force can vary according to the technique used to operate signal levers.

Benefits:
• Instantly measure pull force
• Pre-set warning lights for excessive load
• Adaptable for different lever types
• Use as part of an ongoing maintenance regime

Fully-calibrated across the working range.
AXILOG II

A state-of-the-art vibration monitoring system designed to quantify vibration and determine the risk of damage on buildings and other structures.

The AXILOG II system is a user friendly tri-axial vibration monitoring system, which is easy to operate, providing real-time measurements of vibration levels in accordance with BS, SBR or DIN guidelines with the additional advantage of remote monitoring. Multiple alarm levels can be programmed into the system, providing the operator with an early warning in the event of pre-set levels being exceeded. The automated reporting function and long battery life make this product ideal for long-term monitoring. The AXILOG II is supplied with a two-year calibration certificate and rugged carry case.

Benefits:
- Built-in modem as standard
- Real-time remote monitoring
- Multiple alarm notifications for important events
- Automatically generates reports for easy long-term monitoring
- Rugged lightweight system
- Up to 3 months’ internal battery life

Built-in GPS sensor to record location.
Equipment support services

JFTS offers an end to end support service on all of its products, including training, consulting and a worldwide sales network.

Training
- Online training
- On-site training
- Technical seminars
- Teaching aids

Consulting
- Recommendation of suitable testing regimes
- Assistance with analysis and reporting

Research and development
- Development of new systems
- Custom software solution

Equipment hire
- Available for certain systems

Repair and calibration
- UK based repair workshop for fast turnaround repairs

Worldwide sales network
- Distributors in major centres