Transmission tower foundation assessment

Enhance the performance and reliability of your assets
Lightweight, highly efficient and accurate testing equipment enables the enhanced performance and reliability of your assets.

James Fisher Testing Services is a leading independent supplier of foundation testing equipment and services for the transmission line industry, enabling enhanced performance and reliability of power assets.

Our expert solutions support design validation by providing crucial information to help confirm that foundation properties are adequate to support the needs of a structure, during its lifespan and in the event of asset upgrade.

We have developed a range of lightweight, highly efficient, cost effective and non-destructive equipment, which can safely determine the integrity of transmission tower foundations without the need to dig.

With a long established reputation for the design and manufacture of high quality, specialist testing equipment, JFTS’s products help to ensure fewer failures and outages whilst improving safety and lowering costs.

Benefits of using JFTS’ solutions:

- A modular network of data acquisition units (DAUs)
- Fully integrated systems including GPS, corrosion and weigh-in-motion
- Sensors including: strain gauges, accelerometers, temperature, tilt and displacement transducers
- Other data inputs, including inspector records

Foundations are a key component to the integrity of a tower structure and need to provide reliable and cost-effective support for the life of the line, providing both uplift capacity as well as traditional load-bearing.

Equipment training and support services

We offer full equipment training for all products 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.

A trusted brand and international partner

A part of James Fisher and Sons plc, JFTS facilitates the implementation of proactive asset maintenance strategies delivering significant cost and operational efficiencies, with its industry leading structural monitoring and specialist testing solutions.

By leveraging the companies’ global reach, complimentary services and breadth of expertise, we have an unrivalled ability to meet the constantly developing needs of the markets in which we work.

James Fisher Testing Services Ltd. / Transmission tower foundation assessment

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Foundation testing equipment

TDR2 foundation integrity tester

Proven to minimise impact and cost, TDR2 is the world’s best-selling pile integrity system. This lightweight, battery-powered system is easy to transport and suitable for rapid and remote testing.

TDR2 is a non-destructive testing method for determining the depth of foundations on-site and for providing assessments of base enlargement using sophisticated impedance profiling and simulation software.

Benefits:
- Lightweight and portable battery powered system
- Allows for rapid testing – less than 5 minutes per foundation
- Powerful software analysis program
- Determines foundation depth on-site
- Sophisticated impedance profiling and simulation software

PLATEMAN plate load tester

PLATEMAN provides a safer, quicker and more accurate way to determine load bearing capacities for tower access roads and mobile crane set-up points.

The PLATEMAN system delivers dynamic intelligence in real-time, allowing you to act on data immediately and with confidence. The wireless remote logging feature ensures the safety of site operatives, whilst the robust protective casing enables testing to be conducted in all weathers.

Benefits:
- Wireless remote logging increases safety of site operatives
- Easy to handle and transport between test locations
- Allows for rapid on-site analysis - results viewed in real-time
The BGCMAP corrosion system has been designed to help develop effective maintenance schedules for the electrical power line industry.

The system provides a rapid and reliable way of assessing the potential life of steelwork using the linear polarisation technique to determine the rate of corrosion. The BGCMAP integrates GPS technology and the system glossary has been designed specifically for the power line industry with structure, component, line, segment, circuit and street classifications.

**Benefits:**
- Lightweight, easy to use system
- Rapid testing – less than 5 minutes per foundation
- Integrated GPS provides location, date and time stamp for every test result
- Power line industry glossary
- User friendly Windows based software for reporting

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**Case studies**

**Non-destructive testing of concrete leg foundations in New Zealand**

JFTS successfully completed field trials to determine the effectiveness of non-destructive testing techniques for assessing the concrete foundations of tower legs.

The trials, commissioned by Transpower were part of a wider study on upgrading assets to increase transmission system capacity, testing multiple technologies against a range of soil conditions, structural loading and foundation types.

**Providing corrosion assessment and monitoring equipment to Saudi Arabia**

JFTS supplied a number of BGCMAP corrosion assessment systems as well as technical support and training to Saudi Electric National Grid asset maintenance division, to enable the assessment of corrosion activity in transmission line towers below ground.

Saudi Electric National Grid will use this equipment to check corrosion conditions and devise relevant and economic investigation programmes, to prolong the life of their critical assets.

**JFTS' TDR2 pile testing system goes Arctic**

JFTS successfully delivered 30 bespoke TDR2 pile testing systems to the Russian Federal State Power Company for assessing the condition and integrity of transmission line tower foundations across the Russian electricity network.

The specially developed TDR2-ARCTIC system is designed for use in temperatures as low as -20°C and the displays were adapted for the Russian language.