

Foundation and pile testing specialists

The stability of a structure starts with a strong foundation

Driving innovative and cost-effective testing solutions to provide safer, faster and highly accurate results.

Strainstall instills significant confidence in the long-term performance of foundations, delivering fast and highly accurate on-site verification services which take into account critical design parameters.

As the leading, independent provider of foundation and pile testing services, Strainstall verifies design parameters thereby instilling significant confidence in a foundation's ultimate long-term performance under load.

Our breadth of resources allows us to deliver a rapid response, with minimal disruption to on-going work within the test location, with results instantly available on-site. Our experience and expertise enables us to provide practical advice on the best testing methods for your project needs.

Using only the latest innovative products, we cater for a broad range of loading capacities and offer a wide range of non-destructive testing methods to meet the industry's exacting requirements. The real-time distribution of invaluable data facilitates informed decision making, improving overall project performance in terms of safety, productivity and asset protection.

Our scope of foundation testing includes:

- Below ground corrosion assessment
- Bi-directional static load testing
- Cross hole sonic logging
- High strain dynamic pile testing
- Low strain integrity pile testing
- Static load testing
- Parallel seismic testing

We can also provide a fully integrated geotechnical monitoring service which includes ground movement monitoring, noise and vibration monitoring, landslip monitoring, tunnel monitoring and building movement monitoring.



A trusted brand and international partner

A part of James Fisher and Sons plc, Strainstall is an innovative and fast growing company. Our highly skilled team has significant experience in structural monitoring and pile testing, delivering solutions across the Middle East, Malaysia, Asia Pacific, the UK and Ireland.

Working in partnership with our sister company Testconsult, an expert provider of specialist testing services and equipment and structural health monitoring, Strainstall is able to provide solutions for the most operationally challenging projects undertaken by our customers around the world.

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



Specialist foundation testing equipment

We design and manufacture our own range of specialist foundation testing equipment in-house, driving innovative and cost-effective solutions to deliver improved operational performance for our customers worldwide.



Committed to quality and safety

Strainstall is committed to delivering high quality solutions throughout all of its operations. We ensure best practice and compliance with industry regulations, as evidenced through our industry accreditations and memberships. We are committed to delivering the highest standards in order to meet our customers' exacting requirements.

Foundation testing services

Our range of highly accurate pile testing services is critical for verifying foundation design parameters and communicating corrective actions.

High strain dynamic pile testing | SIMBAT



Our high strain dynamic pile testing offers a fast and cost-effective method of determining the performance of pile foundations.

Using the SIMBAT technique, testing includes a number of features that enable data validation, including the specially designed optical theodolite. The prime advantage of dynamic load testing is the speed of testing and its low cost. Typically up to 10 piles can be tested per day with preliminary results available immediately.

Low strain integrity pile testing | TDR2



We are a specialist provider of advanced pile integrity testing services used to assess the condition of concrete pile foundations.

Using the latest portable system, the TDR2, we are able to provide advanced interpretations of data measuring pile length, pile head stiffness and pile shaft mobility. Analysis can be carried out instantly on-site and in normal conditions we can easily test up to 60 piles per day, increasing to 200 where access is particularly good.

Cross hole sonic logging | SCXT2000



Cross hole sonic logging provides a full and thorough investigation of the quality and consistency of concrete bored piles.

Testconsult uses the latest SCXT2000 sonic logging system to test, view and store critical data on the structural soundness of concrete. We offer a high-end analysis service which includes 2D and 3D tomography reporting for fast visualisation of foundation defects.



Below ground corrosion assessment | BGCMAF



Using our own specially developed equipment we provide a below ground corrosion assessment service as an alternative method to traditional excavation techniques.

Traditional excavation methods can be a costly and time consuming means of assessing of underground corrosion. Testconsult's alternative technique, using our own specially developed equipment, provides a more efficient and less intrusive way of evaluating corrosion rates.

Parallel seismic testing | PARAS



Our parallel seismic testing service is regarded as the only reliable method for checking the durability of foundations beneath existing structures.

Occasionally doubts about the integrity and length of concrete and sheet piling, only arise after the structure is complete and pile heads are no longer accessible for testing.

The parallel seismic test and the PARAS seismic test system have been developed by Testconsult for testing in these situations.

Bi-directional static load testing



Our bi-directional static load testing (BDSLT) method is a truly innovative and highly effective static load testing technique.

The speed and accuracy of the testing method has made BDSLT a valuable tool and the wealth of information produced is the reason so many engineers are now turning to this method. Using a hydraulically driven, high capacity, sacrificial pressure cell, the test provides separate measurements of a pile's end-bearing and skin friction - the only available test to do so.

Delivering improved asset safety and ensuring long-term performance.

Strainstall's static load testing is the most fundamental form of pile load test and is considered the benchmark of pile performance.

Static load tests can be used to determine the settlement that can occur at working load, or a multiple of it, and can also be used to verify the ultimate bearing capacity of a pile.

There a number of different static load test methods:

- Maintained load test - each increment of load is held constant for a specified period of time or until the rate of settlement falls below a specified value
- Constant rate of penetration (CPR) test - the load is applied to the pile in order to maintain the rate of penetration at a constant speed. This method is usually conducted for determining the ultimate bearing capacity of a pile
- Tension test - similar to maintained load test, except the purpose of this method is to determine how the pile will perform under a tensile load
- Zone testing

Zone testing

We are the leading industry expert in zone load testing. Zone testing is a method of static load test usually conducted after ground improvements made by dynamic compaction, soil stabilisation, vibro concrete and stone columns. Suitable for both short and long-term testing, it is the only method suitable for after ground remediation works.

Features and benefits of Strainstall's zone testing:

- Project managed by highly experienced and fully certified staff
- Exceptional safety record
- Up to the minute data streamed from site
- Detailed and customised graphical reporting



Case studies

Strainstall | Delivering industry first in Singapore



Strainstall Singapore successfully pile tested a 10,000 tonne load – the highest capacity ever tested for Dongah Geological Engineering Co. Ltd in Singapore.

The pile test was conducted at the confluence of different soil formations, making it challenging to design a test which could acquire meaningful data.

Strainstall was able to overcome this difficulty using BDSLT together with its experience and understanding of customer requirements.

Testconsult | Wind farm ground improvement verification



Testconsult ensured project safety during ground improvement works at a remote and exposed wind farm site.

Testconsult was asked to verify ground improvements initially made using vibrated stone columns through a peat stratum using its static load test (SLT) monitoring system. The loading process reached 50% of the maximum test load before the test was suspended due to excessive differential settlements across the test position. By testing in advance the project averted a potentially dangerous situation before the cranes began their lifts.

Strainstall | Structural monitoring of the Burj Khalifa Tower



Strainstall delivered a six year monitoring contract on the Burj Khalifa Tower in Dubai – the tallest man-made structure ever built.

Initially contracted to undertake preliminary pile tests to ensure the piles could bear the weight of the enormous structure, Strainstall went on to supply and install a structural monitoring system designed to monitor the structure's performance as construction progressed. This provided important ongoing data on the structural behavior of the tower during the initial commissioning period.

Testconsult | Sonic logging at Crossrail



Testconsult provided sonic logging on a range of deep piled foundations and diaphragm walls at four different underground stations as part of the prestigious Crossrail transport scheme in London – one of the biggest civil engineering projects in the UK.

The foundation testing contract win, followed four years of materials testing on the same project. Using Testconsult's latest SCXT sonic logging equipment, technicians were able to log a four tube pile profile in around 15 minutes, which meant to a fast and efficient testing service for the client.

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