

The State of Qatar uses State of the Art O-cell® Technology

In 2005, LOADTEST performed the first Osterberg cell (O-cell®) bi-directional load test in the State of Qatar. Although many tests have been performed in the region, the O-cell® is capable of far greater loads than possible with Kentledge or anchor pile reaction systems.

With designers pushing the “envelope” on many new structures which require ever larger bearing capacities; the Osterberg cell technology is ideally suited to test large capacity foundation elements and assist in removing the “factor of uncertainty” associated with large foundation design.



Buildings along Al Corniche, soon to be dwarfed by many new high rise projects

Following the construction of a new World class international airport, National Stadium and some of the finest and most exciting building projects in the World (over 200 new major structures are planned), Qatar is all set to compete with its neighbours for commerce and tourism.



One of many projects along Al Corniche, Doha

Once known for the pearling trade, Qatar is set to become the Pearl of the Middle East.

Amidst all these construction activities, LOADTEST have taken the lead in foundation testing with record breaking loads for Qatar with the patented bi-directional O-cell® testing method. The maximum test load that has been mobilised using O-cell testing now stands at 87MN. Loads of this magnitude, although easily achieved by O-cell technology, would have proved extremely difficult to achieve with other testing techniques.



Pile cage installation on site in Doha, where many exciting projects are under construction

As new structures continue to increase in size, the foundations required need to perform to higher loads. Until recently, all of the larger buildings were founded in the limestone or shale deposits. Now, as the projects get bigger and more impressive, consideration is being given to whether the piles need to be founded in the Rus Chalk below.



O-cell assembly being installed in Doha, State of Qatar

Several projects have now been undertaken in Qatar with tests numbering well into double figures.



Several O-cell assemblies ready for installation.

The bi-directional tests have also been designed to allow the performance of the piles to be evaluated without the need for concreting up to ground level nor complex de-bonding arrangements from final design level back to the current piling platform level, a depth of over 20 metres in one case. This has enabled preliminary piles to be tested at an early stage of the building process and with the same construction techniques as the working piles.

Several working piles have also been tested after excavation to confirm the pile design and tension tests have been performed up to 10MN.



Load testing in progress

Due to the complexity of the soils, foundation designs and the magnitude of the loads required, O-cell testing has proved to be an invaluable tool in the evaluation of the bearing capacity and soil properties and has allowed foundation designs to be both verified and optimised.

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LOADTEST: Providing Confidence in Foundations through Load Testing around the World.
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