Bored piling is a method that involves boring a circular hole into the ground, installing steel reinforcement and filling the bore hole with concrete to form a pile. Boring is carried out to the required depth by means of either a crawler crane-mounted rotary boring unit or a purpose-built hydraulic drilling machine. Bored pile foundations are suitable for all types of soil conditions and compared with conventional driven piling methods, bored piling activities generate less noise and vibration.

Aside from building foundation piles, the Bored piling method is also used to form Contiguous and Secant bored pile walls for earth retention. A Contiguous bored pile wall is formed by installing closely spaced Bored piles, with a small gap (typically 75 to 150 mm) between adjacent piles. A Secant pile wall is formed by installing overlapping Bored piles. Secant piles are usually selected where there are particular concerns about groundwater inflow.

Static load tests are used to verify the capacity of bored piles. The most common reaction frame is the kentledge system. Also used are reaction piles, to provide tensile resistance. Conventional static load tests provide valuable data regarding the actual capacity of the installed piles, the corresponding design assumptions, and the distribution of load along the length of the pile.

Over the years, Keller has provided various innovative piling solutions to construction markets. For example, in 2010, Resource Piling drilled 2.5 m diameter piles to unprecedented depths of 92 m for the Marina Coastal Expressway project, Singapore. Also in 2010, Resource Piling was the first piling contractor in Singapore to perform a 5,700 ton kentledge load test. Keller was one of the earliest contractors to utilise polymer for borehole stabilisation in India. In 2013, Keller performed a 7,500 ton reaction pile test on a 1.8 m diameter bored pile in Kuala Lumpur, Malaysia.

Keller is also able to combine bored piling with other geotechnical solutions such as grouting and ground anchors for retaining systems, and vibro stone columns for liquefaction mitigation. In Asia, Keller is known for its high safety standards, technical quality, on-time project delivery and overall cost-effectiveness.
OUR PROJECTS

Archean Chemical Plant, India
Over 1,600 piles were installed to support heavy plant structures, with the lighter structures founded on ground improvement.

Gardens by the Bay, Singapore
Over 1,500 piles were installed for various structures.

Vale Iron Ore Facility, Malaysia
1,000 Bored piles were constructed to support the stacker reclaimers and conveyor system, in combination with ground improvement.

Tun Razak Exchange Load Test, Malaysia
A 7,500 ton Reaction pile load test was performed on a 1.8 m diameter Bored pile.

The Bored piling method is used in a wide range of construction sectors including power plants, highways, railways and infrastructure. Our capability to offer bored piling and ground improvement solutions as a package enables us to offer optimal foundation solutions to our customers.

Some projects in Asia:
- Changi Airport Terminal 3, Singapore
- Cochin Metro Project, India
- Gardens by the Bay, Singapore
- Marina Barrage, Singapore
- Pipavav Shipyard, India
- Tun Razak Exchange Project, Malaysia
- Vale Iron Ore Facility, Malaysia
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