



Driven piles

Often the most cost effective deep foundation solution, driven piles can be concrete or steel. Unlike bored piles they do not produce any spoil.



Benefits

Keller’s driven piles are often the most cost effective heavy foundation solution for difficult ground conditions such as contaminated or “brown-field” sites, where the disposal of soil is difficult or expensive. There are several techniques of driven piles including:

- Franki or KGB piles. These piles are formed with an enlarged base, and can take high loads when compared to straight shafted piles.
- DCIS piles. Quick to install, these piles are often installed with an integral pile cap that can reduce the thickness of any floor slab that is supported by them.
- Precast piles. These can normally be reinforced or prestressed. They can be a variety of shapes, square, circular or hexagonal. Precast piles may also be coated with a bituminous layer to combat very aggressive ground conditions.
- Steel piles. Useful where there are obstructions in the ground or where piles have to be driven over water. These can be tubular or “H” in section shape.

Applications

The versatility and robust nature of Keller’s driven piles allows them to be used for all types of construction, particularly in aggressive soil conditions. The fact that they are driven to a “set” or a pre-determined resistance, means that they are well suited to sites where the ground conditions are highly variable.

Small pile size	Medium pile size	Large pile size
Underpinning houses and light buildings	Foundations for new buildings	Wind turbines and pylons
Limited headroom	Infrastructure	River bridge foundations
Difficult access	Floor slabs and load transfer platforms	Bridge abutments and piers
	Used in conjunction with king post walls - lateral support for earth retention	Marine construction

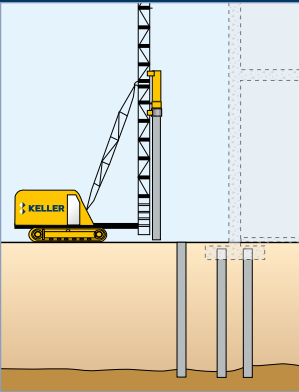
Technical highlights

- Resists compressive, uplift and lateral loads
- Extensive range of pile sizes
- Piles may be installed to significant depths > 80 m
- Rapid follow-on construction
- Unaffected by ground water
- No spoil generation
- Noise and vibration needs to be considered and managed

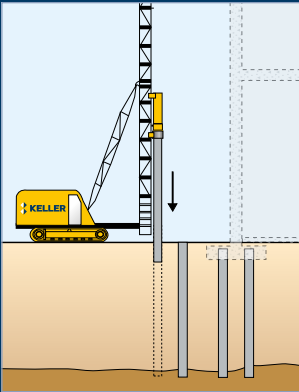
Driven piles – product description

Driven piles are installed using hydraulic or diesel hammers to a designed depth or resistance. For precast and steel piles individual elements may be joined together either using pile joints (Keller has developed its own range of cost effective pile joints) or by welding. This means that preformed piles may be driven to great depths (exceeding 80m).

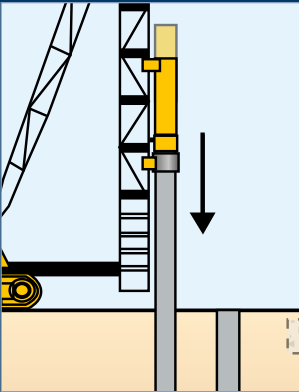
For driven pile derivatives that deploy wet concrete, heavy steel tubes are driven into the ground, again to a designed depth or resistance. Once the desired toe level is reached, concrete is introduced into the tube by skip or pump, reinforcement placed and the tube extracted. Various diameters may be selected and Keller will normally advise the client as to the optimum size, dependent on the ground conditions, to reduce the overall pile length (and cost).



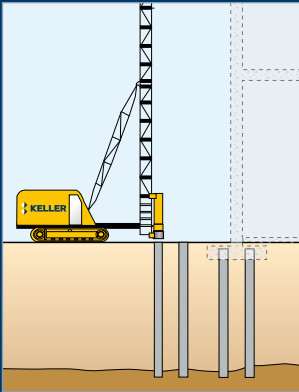
Locating



Driving the pile into the soil



Close-up



Final driven pile in the soil

Driven piles project Example: London's 2012 Olympic Stadium, UK

The London 2012 Olympic Stadium is one of the best examples of its type, and it is founded on Keller driven piles.

Thanks to our wide range of techniques we were able to design and install a combination of driven piles to provide the best value solution, taking programme, sustainability, the environment and of course cost into consideration.

As the site was heavily contaminated over 3000 DCIS piles were employed, along with ground improvement techniques where the ground conditions allowed.

Keller Group Plc

Geotechnical solutions specialist
www.keller.com

