



**FREDRICH**  
SPEZIALTIEFBAU

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**Driven Piles – Cast in Place**  
Fredrich System conforming to DIN EN 12699



## AT A GLANCE

The Driven Piles – Cast in Place is the core business of Fredrich Spezialtiefbau. The strong compacting of the ground and high work rate per day make it the most cost-efficient solution for deep foundations. Importantly, Fredrich Spezialtiefbau has developed a method of sound insulation which, in combination with the latest equipment, means that Driven Piles – Cast in Place can also be used in residential areas. Piles up to 35 metres long with a diameter of up to 66 cm and an inclination of up to 3:1 can be fabricated.

## METHOD OF FABRICATION

A thick-walled steel casing is made watertight with a steel baseplate, including a seal. This casing is driven into the ground with a pile hammer, completely displacing the ground. Once the driving criteria or the required driven depth is achieved, the reinforcing cage is installed and the casing is filled with concrete. Following placement of the concrete, the casing is withdrawn.

## DIMENSIONING AND QUALITY ASSURANCE

The Driven Piles – Cast in Place with permanent steel baseplate is dimensioned and fabricated in compliance with DIN EN 12699. Many years of foundation engineering experience and numerous completed projects and test loadings enable us to design optimised, stable foundations. The piling criteria and work instructions for our site personnel, form the basis of our quality assurance. Our wealth of data from sites in comparable ground and the collaboration with ground engineers guides our design. Typically we carry out load testing to prove the compliance with engineering specifications.

## COST-EFFICIENCY

The ground is completely displaced sideways and downwards during the piling work. This produces higher bearing capacities in the region of both skin friction and end-bearing pressure. The internal bearing capacity of concrete and steel is optimally exploited so that high loads can be transferred into the ground by slender piles. The pile length is adapted to the strata profile of the load-bearing ground according to the pile-driving criteria. Thus only the technically required length has to be fabricated, which allows material savings.

## PROJECT EXAMPLE

For the construction of what was at the time the world's largest paper machine, at Wörth am Rhein, we installed some 1,800 Driven Piles – Cast in Place. We were able to meet the requirement to minimise pile settlement and differential settlement in the system as a whole. To achieve the short completion deadline of three and a half months, we worked with up to five machines simultaneously and installed piles with a diameter of 42 to 61 centimetres and a length of up to 24 metres. The client for this project, which was completed in 2001, was the Papierfabrik Palm paper mill, and the contract value was euro 4.1 million.

Pile shaft diameter in cm	37 cm	42 cm	45 cm	51 cm	56 cm	61 cm
Allowable bearing capacities in kN up to approx	1.000 kN	1.400 kN	1.700 kN	2.100 kN	2.600 kN	3.500 kN

