



FREDRICH
SPEZIALTIEFBAU

Kurt Fredrich Spezialtiefbau GmbH

Postfach 10 11 09
27511 Bremerhaven

Address:
Zur Siedewurt 2
27612 Loxstedt/Bremerhaven

Phone: +49 471 97447-0
Fax: +49 471 97447-44
eMail: info@kurt-fredrich.de
web: www.kurt-fredrich.de



FREDRICH
SPEZIALTIEFBAU



Full displacement bored pile
Fredrich System, conforming to DIN EN 12699





AT A GLANCE

The full displacement bored pile is particularly suitable for use on inner city sites, where vibration-free fabrication with very low noise levels is required. In contrast with displacement screw/bored piles, no soil is conveyed and the ground is completely displaced sideways, so this method is used when relatively small circumferences and lengths are adequate for deep foundations. We use it for pile lengths of up to 35 metres, diameters of up to 51 centimetres and an inclination of up to 4:1.

METHOD OF FABRICATION

The bore casing, a thick-walled steel pipe, is closed at the bottom end with a watertight steel baseplate and seal. A hydraulic boring drive is used to insert this pipe into the ground, which is displaced sideways. When the required boring depth is reached, the reinforcement cage is installed and the pipe is filled with concrete. Finally the pipe is removed.

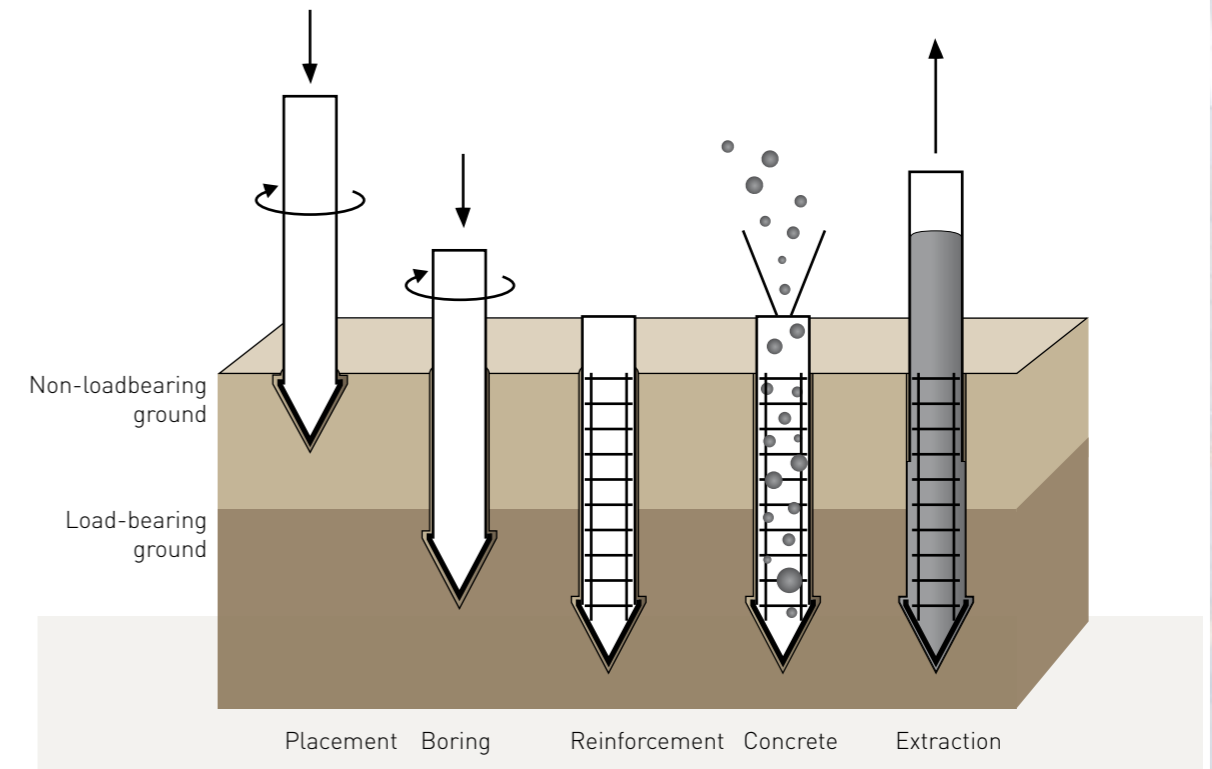
DIMENSIONING AND QUALITY ASSURANCE

The displacement bored pile 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. 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 piling produces complete sideways displacement of the ground, which permits higher bearing capacities in the area of both the pile skin and the end-bearing pressure. The internal bearing capacity is thus optimally utilised and slender piles can be used to transfer large loads into the ground.

Pile shaft diameter in cm	38 cm	44 cm	51 cm
pile tip diameter in cm	50 cm	56 cm	65 cm
admissible pile load up to	bis 1.100 kN	bis 1.500 kN	bis 1.800 kN



The displacement effect means that no spoil has to be removed. Therefore, in contrast with partial displacement screw/bored piles, no costs for the disposal of the spoil are incurred and the working level remains clean. The pile length is adapted according to the strata profile of the load-bearing ground, as determined by the ground investigation. Thus only the technically required length has to be fabricated, which allows material savings.

PROJECT EXAMPLE

For the building of the Deutsches Auswandererhaus museum in Bremerhaven's city centre, we fabricated around 155 full displacement bored piles. This method without soil conveyance was chosen because of the contamination in the ground and because it is a vibration-free solution. The piles placed have a diameter of 38 centimetres and were up to 20 m in length. We were able to verify the pre-calculated bearing capacities of 1000 kN on the basis of test loadings. The contract value of the project, which was carried out in 2004 on behalf of the Bremerhavener Gesellschaft für Investitionsförderung und Stadtentwicklung (Bremerhaven Association for the Promotion of Investment and Urban Development) amounted to euro 250,000.