



## Internally Driven Steel Pipe Piles:

Especially in terms of restricted space, limited working heights and on building sites with low quantities of piles, this method represents a technically and economically useful alternative to other pile systems, due to the smaller equipment sizes.



"Mini-Rig" under limited working high - Ø 408 mm

## Process Description:

After aligning the steel pipe over the pile starting point, a gravel or concrete plug, depending on the requirement, is inserted into the pipe, which can be sealed with a base plate at the bottom.

The steel pipes are inserted using a falling weight fed into the pipe, which falls onto the plug on the pipe base and pulls the pipe into the ground.

The steel pipes are inserted in brief bursts, whereby the pipe lengths are between 0.50 m and 8.0 m. After the first pipe is inserted into the foundation, a second steel pipe is installed and welded with the first pipe. This method is repeated in accordance with the required pile length.

The piles are then filled with concrete. Depending on requirements, the pile can be fitted with a top reinforcement measuring approx. 2.50 m or be reinforced over the entire length.

The steel piles remain completely embedded in the ground and act as an additional protection against permeating water or soft layers.

## Advantages of the Method:

- **Low vibration**
- **Low noise emission**
- **No earth movement**, but soil compression through lateral displacement.
- **Increase of load bearing capacity** through the displacement effect.
- Can also be used with **limited working height** (from 2.70 m).
- Piles can be built very close (approx. 10cm) to **existing buildings**.
- Additional protection against **permeating water** or **soft soil layers** by the steel pipes which remain in the foundation.
- **Adjustment of pile lengths** to the characteristics of the supporting soil layers
- **Inspection of pile load bearing capacity** during construction using produced pile energy

## Diameter and Pile Loads:

Depending on the existing foundation and the achieved bond length, the following loads can be carried in the soil using the method:

| Ø<br>[mm] | zul. V<br>[kN] |
|-----------|----------------|
| 273       | 400            |
| 324       | 500            |
| 356       | 700            |
| 376       | 850            |
| 406       | 1.100          |
| 457       | 1.400          |