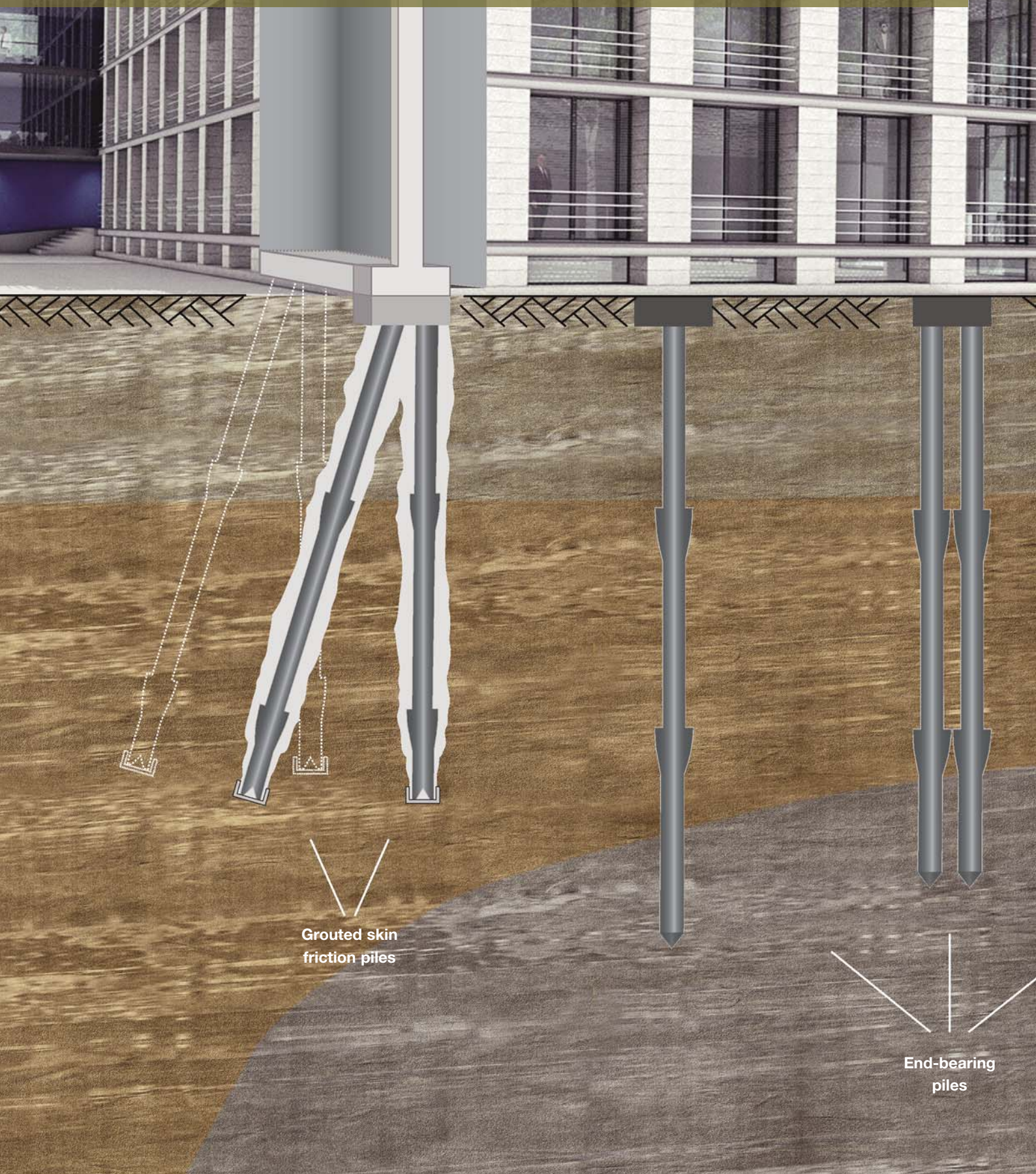


BAUER Ductile Pile



A brilliantly simple Foundation Method





Non load-bearing
soil stratum

Load-bearing
soil stratum

Rock
formation

System Description

The **Bauer Ductile Pile (BDP)** is a simple, fast and highly effective deep foundation system. Manufactured from high-strength ductile cast iron, the driven pile system guarantees high quality and a safe foundation. The 5 or 6 m long pile sections can be joined together to form a pile shaft of any length without the use of special tools. After driving, the BDP is cut down to the specified pile

cut-off level and the offcut is reused as lead section for the next pile. Depending on prevailing soil conditions, Bauer ductile piles are constructed either as end-bearing or as skin friction piles with grouted annulus. During pile installation, the technique allows the pile length of each individual pile to be optimised in line with locally prevailing ground conditions.

Advantages of Ductile Driven Piles

1. **Low capital investment** for pile-driving plant and equipment
2. **Simple site setup**, only light plant and equipment (18 - 30 tonne hydraulic excavator or MBG 12 leader rig, high-impact hydraulic hammer, possibly concrete pump and silo)
3. **Low requirements for working platform**, due to light and versatile equipment
4. **Minimum site traffic** compared to other deep foundation methods
5. **Pile installation in close proximity to existing buildings**, pile clearance of 40 cm to existing buildings possible
6. Simple pile driving even in **restricted site conditions**
7. **Low level vibrations** during installation (peak particle velocity 2 mm/sec, compared with 20 mm/sec for conventional driven pre-cast concrete piles)
8. **The load-bearing stratum is determined during pile driving**, making on-site optimisation of pile length possible
9. **Quality assurance of each individual pile** as a result of pile driving criterion



Load Bearing Capacities



10. **Cut down pile to specified cut-off level** immediately after installation, resulting in zero waste
11. **No finishing works on pile heads**, such as trimming back etc., construction of the superstructure can commence immediately after pile installation
12. **No off-site removal of drill spoil** (particularly advantageous in contaminated soils)
13. **Horizontal forces** can be transferred by way of raking piles
14. **Construction of tension piles** (generally as grouted piles)
15. **Low wear and tear costs**
16. **High production rates** with up to 700 m of completed piles per day
17. **Short construction period**
18. **Favourable alternative** to
 - Vibro displacement stone columns
 - Driven cast insitu concrete piles
 - Driven precast concrete piles
 - GEWI piles
 - Bored piles
 - etc.

BDP types with design values (N_d) calculated with filling

BDP Type [mm]	C20/25	C35/45
Ø 118 x 5.0 ^{1) 2)}	639 kN	730 kN
Ø 118 x 7.5	869 kN	952 kN
Ø 118 x 9.0	1,001 kN	1,080 kN
Ø 118 x 10.6 ²⁾	1,139 kN	1,212 kN
Ø 170 x 7.0 ^{1) 2)}	1,298 kN	1,498 kN
Ø 170 x 9.0	1,566 kN	1,748 kN
Ø 170 x 10.6	1,776 kN	1,950 kN
Ø 170 x 12.5 ²⁾	2,019 kN	2,185 kN

¹⁾ without building licence

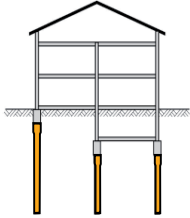
²⁾ only on request



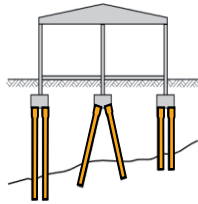
Static pile test

Areas of Application

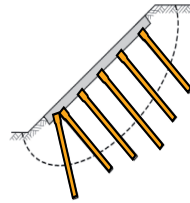
Building construction



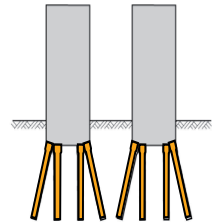
Industrial buildings



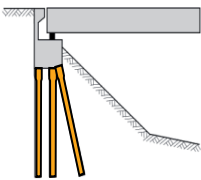
Slope stabilisation



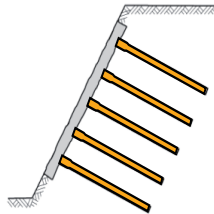
Silo Foundations



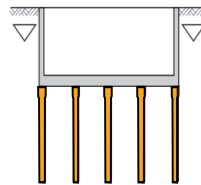
Bridge construction



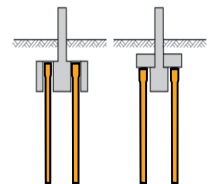
Soil nailing



Uplift protection



Underpinning



Bauer Ductile Piles are particularly suited for load transfer in restricted site conditions such as reduced working space or low headroom. They can also be deployed as foundation piles in close proximity to existing buildings (minimum clearance 40 cm).



Underpinning works in restricted headroom

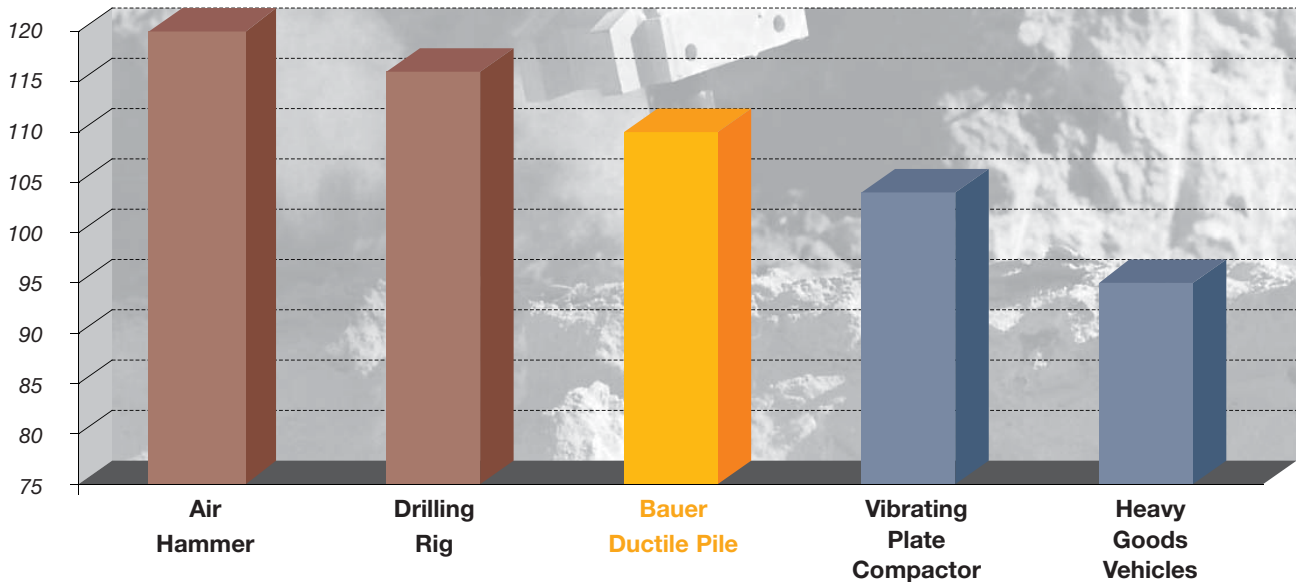


Foundation works adjacent to an existing building

Emissions

Graphic chart of noise levels for plant and equipment typically deployed on site measured directly at source. The ambient noise level of a construction site is approximately 95 dB (A).

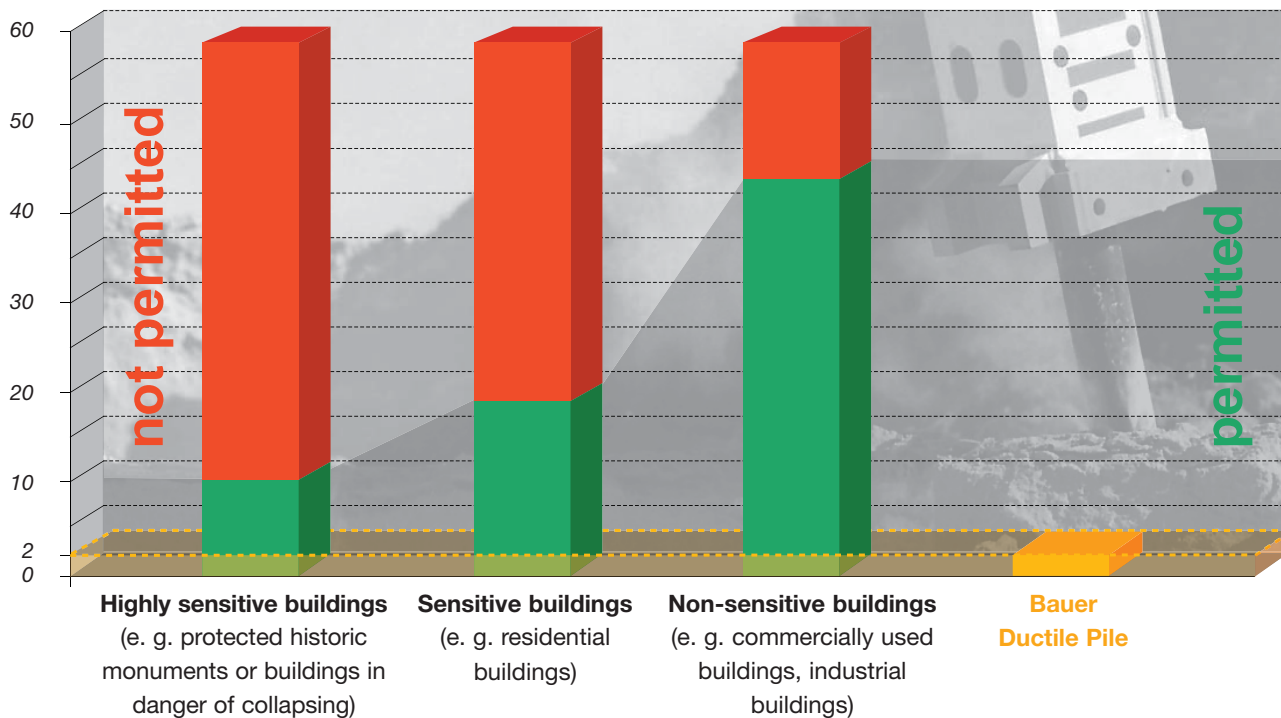
dB (A)



Vibrations

Vibrations in accordance with DIN 4150-3: 1999-02 at an impact frequency of 60 Hz

Rate of vibration (mm/s)



This 3D bar diagram illustrates that the vibrations generated during the installation of Bauer Ductile Piles are harmless for all types of buildings.



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