

## AT - TUBESPILE™





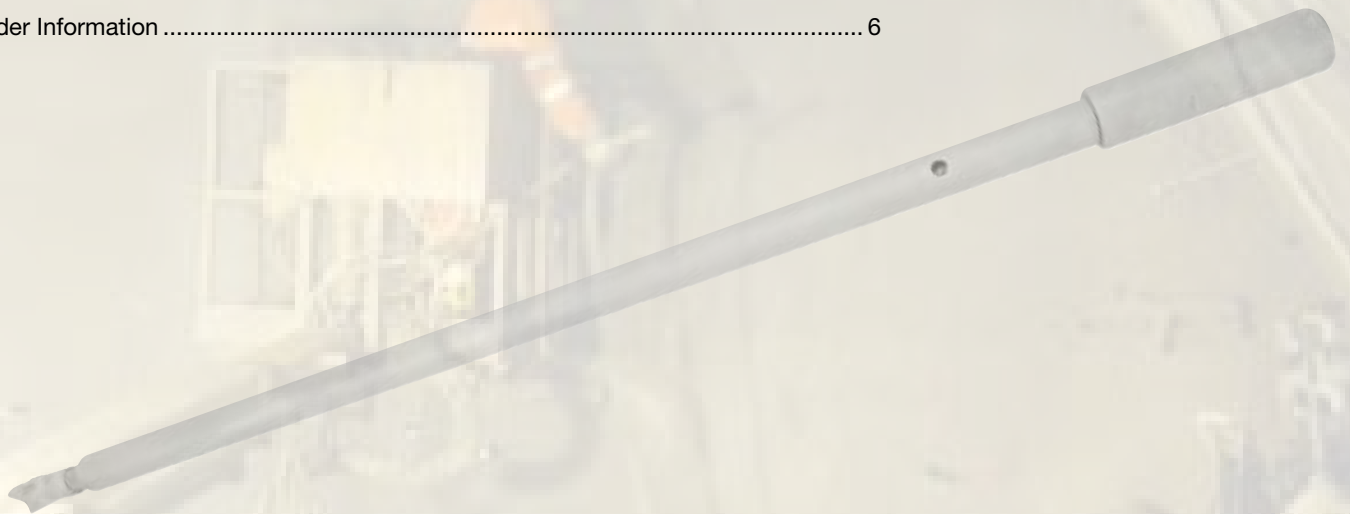
# ALWAG SYSTEMS



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## Introduction

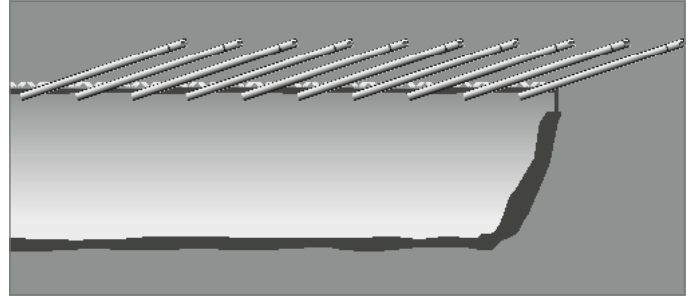
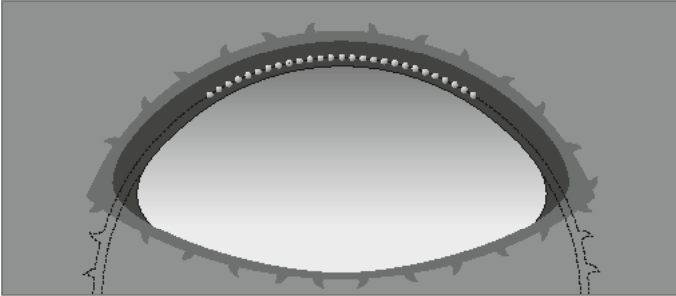
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The AT - TUBESPILE™ forms part of the POWER SET product family. It qualifies perfectly as a pre-support system in conventional tunneling and is classified as a pile.

The application of the AT - TUBESPILE™ permits the stabilization of local instabilities in the excavation area and the prevention of ground loosening induced by installation. In poor ground conditions, this system is a sound alternative to conventional ram piles, rebar piles, or IBO - Self-Drilling Spiles.

## Fields of Application

- Tunneling in soft homogenous or inhomogeneous ground
- Advances through alpine fault zones
- Advances through blocky rock mass
- Advances through sedimentary foundation soil or debris



## Main Advantages

- Installation using conventional drill jumbos
- Secure and easy installation procedure
- Spile drilling and installation in one step
- Ground preserving, self-drilling installation
- Higher section modulus than comparable ram spiles, rebar spiles, or IBO - Self-Drilling Spiles

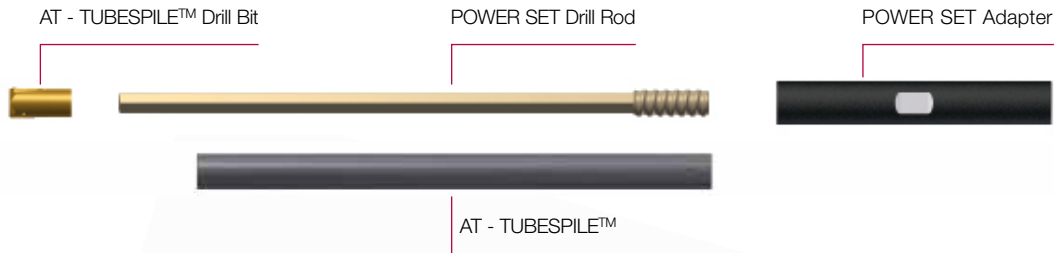
## System Description

The AT - TUBESPILE™ is installed in one step through rotary percussive drilling with conventional drill booms. The drill rod inside the spile tube transfers the drilling energy onto the drill bit, which is available as a button drill bit with carbide inserts and as a hardened arc-shaped drill bit. The AT - TUBESPILE™ is pushed into the borehole by an adapter and follows directly behind the drill bit. Cooling, flushing, and transport of cuttings take place inside the spile tube with water.



## System Components

- AT - TUBESPILE™ drill bit
  - Single-use drill bit Ø 52 [mm], arc-shaped or button bit version available
- AT - TUBESPILE™
  - Spile tube Ø 51 x 3.2 [mm]
- POWER SET drill rod
  - Special drill steel for optimum service life
- POWER SET Adapter
  - Controlled transfer of the impact energy onto the AT - TUBESPILE™



## Ready-for-use AT - TUBESPILE™



## Specifications <sup>1)</sup>

System	Steel grade <sup>2)</sup>	Modulus of elasticity [N/mm <sup>2</sup> ]	Yield strength [N/mm <sup>2</sup> ]	Outer diameter [mm]	Wall thickness [mm]	Weight [kg/m]	Standard tube length [m]	Moment of inertia [cm <sup>4</sup> ]	Section modulus [cm <sup>3</sup> ]	Maximum moment (elastic) [kNm]
AT - TUBESPILE™	≥ S235	210,000	235	51	3.2	3.8	3.0 / 3.5 / 4.0 / 4.5	13.8	5.4	1.9

1) Deviating structural properties are available upon request

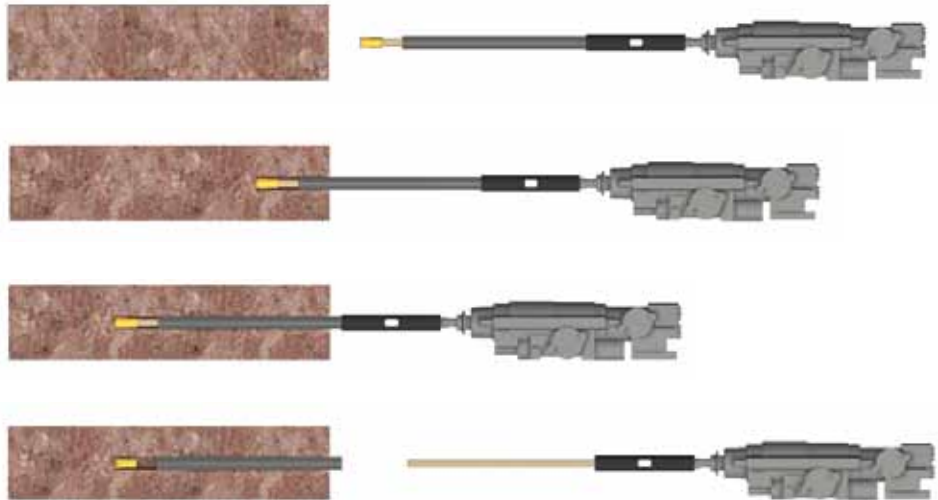
2) According to EN 10025

## Technical Features

- Self-Drilling installation permits installation in all ground types
- Different drill bits for all geological conditions
- Cased installation enables proper installation in poor foundation soil even with unstable borehole walls
- Self-Drilling installation ensures proper installation even in changing ground conditions
- High heading accuracy of the spile drills thanks to the guidance of the spile tube
- No annular gap and therefore no settlements or ground loosening during installation
- Back-flushing inside the spile tube ensures minimized influence the flushing water on ground properties
- Optionally available with injection holes for drainage or injection purposes
- Recording and control of the injection through a flow-pressure meter

## Installation Procedure

1. Attachment of the AT - TUBESPILE™ spile tube and the AT - TUBESPILE™ single-use drill bit onto the POWER SET drill rod, connection of the POWER SET adapter and the rock drill
2. Rotary-percussive self-drilling installation with a single-use drill bit; back-flushing of the cuttings through the annulus between drill rod and spile tube
3. Completion of installation after the final drilling depth has been reached
4. Retraction of the POWER SET drill rod from the installed AT - TUBESPILE™, the single-use drill bit remains inside the borehole



## Accessories

- POWER SET Automation Unit
- Mortar-Mixing pump
- DYWI® Inject Systems
- Flow-Pressure meter
- Injection packer

## Further References

- Brochure POWER SET Self-Drilling Friction Bolt
- Technical Data Sheet AT - TUBESPILE™

## Order Information

Article description <sup>1)</sup>	Article code	Article No. <sup>1)</sup>
AT - TUBESPILE™ SD TUBESPILE™ TS51, L = X,X00 [mm]	TS51-3-XX00	5005151300XX
AT - TUBESPILE™ arc-shaped drill bit, HEX28-052, hardened	PSA-HEX28-052-HD	500580411052
AT - TUBESPILE™ button drill bit, HEX28-053, carbide inserts	PSB-HEX28-053-HM	500580221053
AT - TUBESPILE™ drill rod, HEX28-T38 x Y,Y00 [mm]	PS-GST-YY00	204550011YY0
PS-Adapter T38F-T38Fx200 [mm]	PS-AD-T38-T38-200	204550021020
PS-Adapter R38F-T38Fx200 [mm]	PS-AD-R38-T38-200	204550022020
PS-Adapter T38F-T38Fx400 [mm]	PS-AD-T38-T38-400	204550021040
PS-Adapter R38F-T38Fx400 [mm]	PS-AD-R38-T38-400	204550022040
PS-Adapter R51M-T38Fx800 [mm]	PS-AD-R51-T38-890	204550023089
PS-Adapter T38F-T38Fx600 [mm]	PS-AD-T38-T38-600	204550021060
PS-Adapter R38F-T38Fx600 [mm]	PS-AD-R38-T38-600	204550022060

1) "XX" and "YY" ... length

The logo for ALWAG SYSTEMS is centered on the page. 'ALWAG' is written in a bold, blue, sans-serif font with a stylized, jagged 'W'. 'SYSTEMS' is written in a grey, sans-serif font to the right of 'ALWAG'. The background of the entire page is a light pink color with a faint, large watermark of a white marker pointing downwards from the top right towards the bottom left. The logo is overlaid on a grid of red lines that frame several images of industrial materials.

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