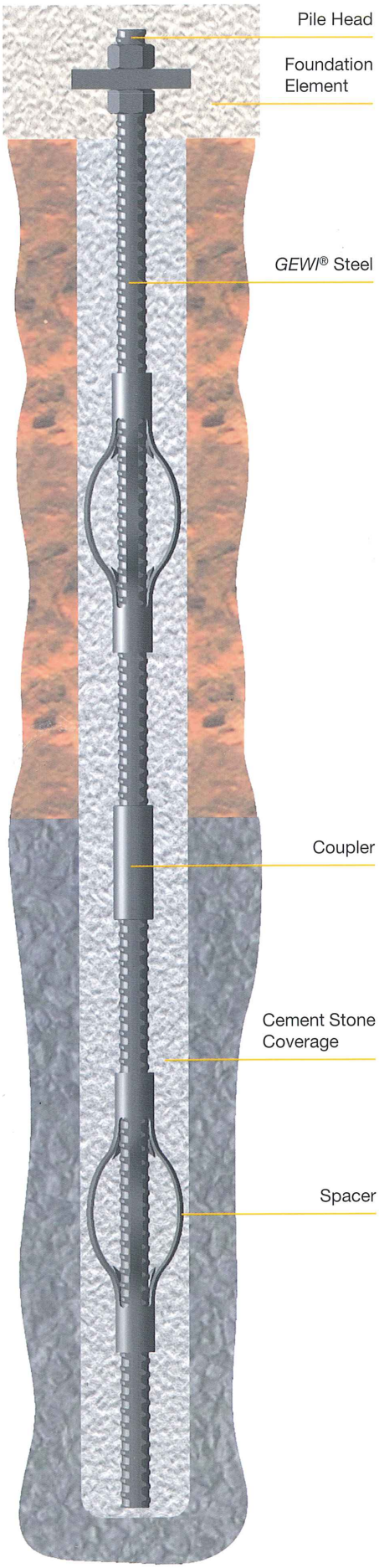


Basic Concept

GEWI® and *GEWI*® *Plus* Piles are micropiles in accordance with DIN 4128 and EN 14199. Usually, they are not tensioned and act as a passive foundation system. A *GEWI*® Threadbar is inserted into a borehole with a maximum diameter of 300mm and centered using a spacer. Afterwards, the borehole is filled or pressure grouted with cement mortar from the bottom up. The grout simultaneously serves for transferring forces to the soil by skin friction and as standard corrosion protection (SCP). Like in solid construction, the alkaline environment of the surrounding cement stone coverage is used for protecting the reinforcing steel. If the cement stone cover does not offer sufficient protection in case of aggressive foundation soil or ground water, the *GEWI*® Pile is also available with double corrosion protection (DCP). The steel tendon is clad in a plastic corrugated sheathing and the annular space is grouted at the factory.

This design is especially used in case of tensile forces, for example in permanent uplift control, because cracks in the coverage can decrease the passivation effect of the cement stone.

As *GEWI*® and *GEWI*® *Plus* Piles are skin friction piles, they can transfer compression, tensile, and alternating loads. Thanks to the specially developed DYWIDAG Thread and system components, no adaptations need to be made to the foundation system. Only the pile head design and the couplers must be varied. By definition, test loads are carried out at micropiles in order to prove the aptitude of the chosen system for the conditions on site as well as the quality of execution.

For transferring extremely high loads, several individual piles (usually three) can be combined in a borehole, providing that the borehole diameter is chosen sufficiently wide.

Fields of Application

- Foundation
- Uplift control
- Baseplates
- Positional stability
- Dam construction

Key Features

- Threadbars with proven coarse *GEWI*® Thread that is suitable for on-site use – threadability even in extreme conditions
- Thread along the entire length
- Lengths can be flexibly adjusted on site
- Approved for absorbing tensile, compression, and alternating loads
- Excellent force / borehole ratio
- Space saving installation
- Compact, light equipment
- Various steel grades
  - Robust, weldable *GEWI*® Bar
  - *GEWI*® *Plus* Bars for ultimate wear
- For increasing skin friction, *GEWI*® and *GEWI*® *Plus* Piles can be equipped with a posterior grouting system
- Optimum load transfer in concrete structures via the anchoring elements
- Especially small pile distances can be realized using special splitting reinforcement
- Multibar assembly is possible when subject to extreme loads

Additional Information

German Approval DIBt Z-32.1-2 / DIBt Z-32.1-9 /
Austrian Approval BMVIT-327.120/0017-II/ST2/2007

Technical Data

GEWI® Pile B500B & S555/700

Nominal diameter Ø [mm]	Yield strength / tensile strength $f_{0,2k}/f_{tk}$ [N/mm²]	Cross-sectional area A [mm²]	Load at yield F_{yk} [kN]	Ultimate load F_{tk} [kN]	Weight [kg/m]	Weight DCP [kg/m]	Approval
20	500/550	314	157	173	2.47	5.9	○
25	500/550	491	245	270	3.85	7.0	○
28	500/550	616	308	339	4.83	8.6	○
32	500/550	804	402	442	6.31	9.5	○
40	500/550	1,257	628	691	9.86	13.6	○
50	500/550	1,963	982	1,080	15.41	21.0	○
63.5	555/700	3,167	1,758	2,217	24.86	32.4	×

GEWI® *Plus* Pile S670/800

Nominal diameter Ø [mm]	Yield strength / tensile strength $f_{0,2k}/f_{tk}$ [N/mm²]	Cross-sectional area A [mm²]	Load at yield F_{yk} [kN]	Ultimate load F_{tk} [kN]	Weight [kg/m]	Weight DCP [kg/m]	Approval
25	670/800	491	329	393	3.85	7.0	△
28	670/800	616	413	493	4.83	8.6	△
30	670/800	707	474	565	5.55	9.0	△
35	670/800	962	645	770	7.55	11.3	△
43	670/800	1,452	973	1,162	11.40	15.8	△
57.5	670/800	2,597	1,740	2,077	20.38	30.0	△
63.5	670/800	3,167	2,122	2,534	24.86	32.4	△
75	670/800	4,418	2,960	3,534	34.68	43.5	

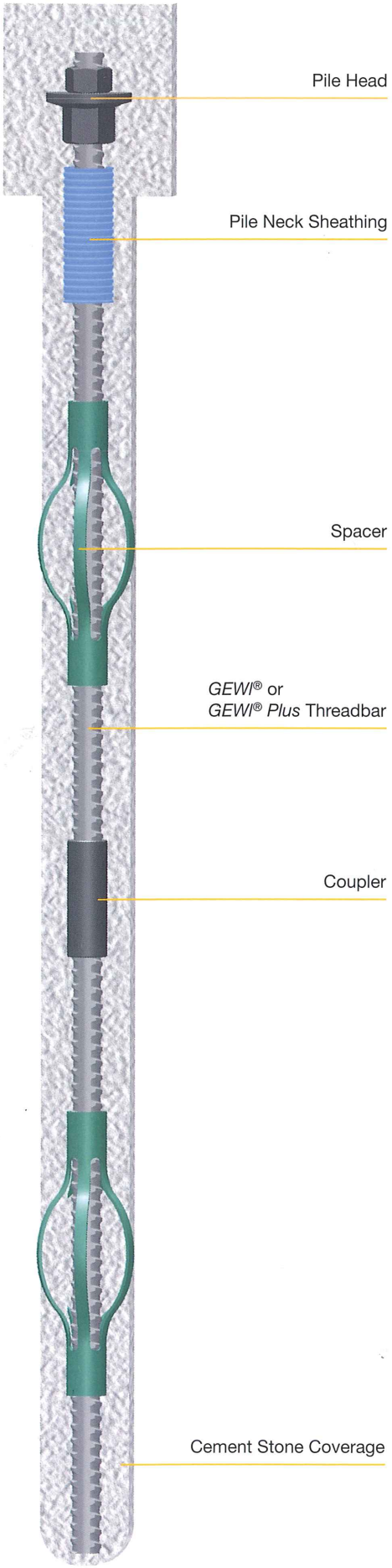
GEWI® Pile B500B Multibar

Nominal diameter Ø [Number x Ø]	Yield strength / tensile strength $f_{0,2k}/f_{tk}$ [N/mm²]	Cross-sectional area A [mm²]	Load at yield F_{yk} [kN]	Ultimate load F_{tk} [kN]	Weight [kg/m]	Weight DCP [kg/m]	Approval
3 x 32	500/550	2,413	1,206	1,327	18.9	28.5	○
3 x 40	500/550	3,770	1,885	2,073	29.6	40.8	○
3 x 50	500/550	5,890	2,945	3,240	46.2	63.0	○
2 x 40	500/550	2,513	1,257	1,382	19.7	27.2	○
2 x 50	500/550	3,927	1,963	2,160	30.8	42.0	○
1 x 40 & 1 x 50	500/550	3,220	1,610	1,771	25.3	34.6	○
2 x 40 & 1 x 50	500/550	4,477	2,238	2,462	35.1	48.2	○
1 x 40 & 2 x 50	500/550	5,184	2,592	2,851	40.7	55.6	○

○ Germany: Z-32.1-2 Ø 20 - 50mm *GEWI*® Pile
× Germany: Z-32.1-9 Ø 63.5mm *GEWI*® Pile
△ Austria: BMVIT-327.120/0017-II/ST 2/2007 Ø 25 - 63.5mm *GEWI*® *Plus* Pile

Additional Information

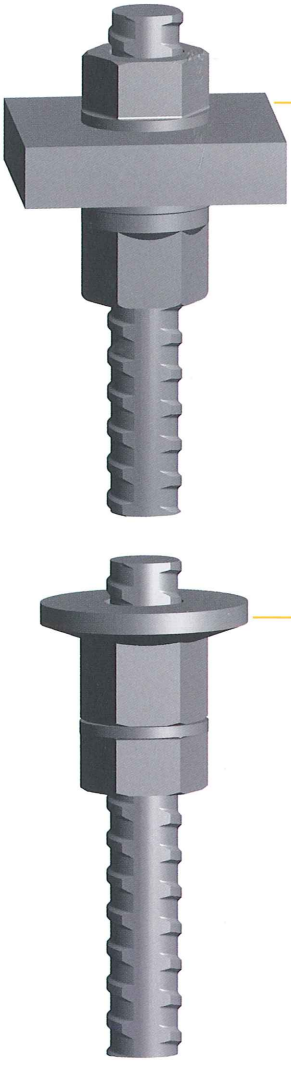
German Approval DIBt Z-32.1-2 / DIBt Z-32.1-9 / Austrian Approval BMVIT-327.120/0017-II/ST2/2007



Standard Corrosion Protection (SCP)

- Corrosion protection by cement stone coverage
- Service life independent of environmental conditions and direction of load
- Compression pile: permanent use (more than 100 years) in minor corrosiveness
- Can be used up to 2 years (DIW...) or up to 50 years (EN...) in low aggressivity if used as a tension and fornating load pile
- Can be supplied spray or hot-dip galvanized
- Spacers center the tendon in the borehole and ensure the necessary coverage
- A variety of pile head variations can be supplied depending on applications
- Approved *GEWI*® System components

Examples for Pile Head Variations

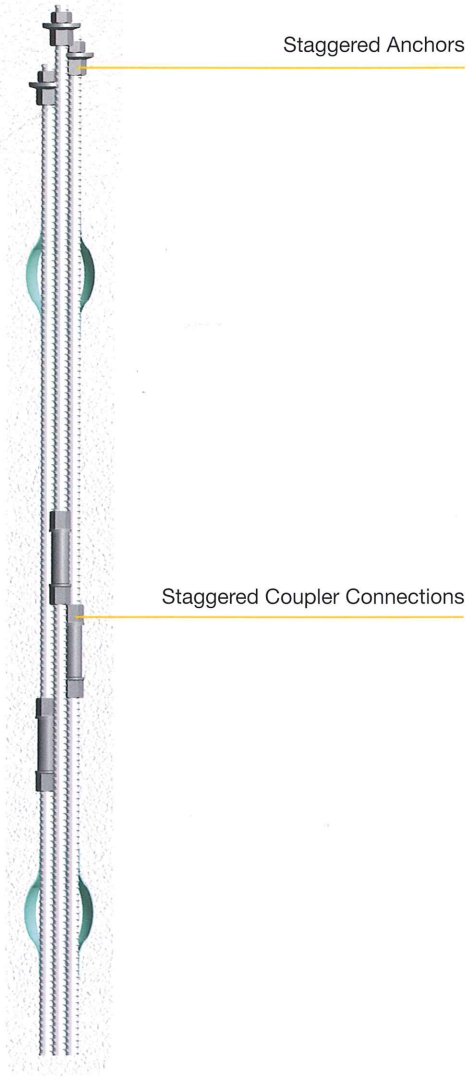


Fields of Application

- Foundation
- Baseplates
- Reinforcement
- Underpinnings
- Mainly compression loads

GEWI® Multibar assembly

- Used for extreme loads
- Reaction piles for test loading
- Larger boreholes



Additional Information

German Approval DIBt Z-32.1-2 / DIBt Z-32.1-9 /
Austrian Approval BMVIT-327.120/0017-II/ST2/2007

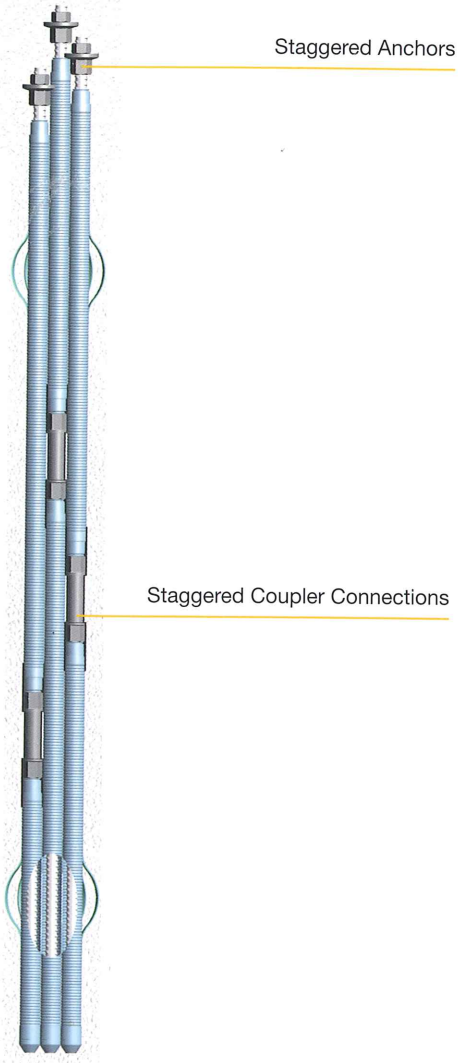
GEWI® Pile System

Double Corrosion Protection (DCP)

- Double Corrosion Protection (DCP) achieved by grouted corrugated sheathing with controlled crack width
- Permanent use (more than 100 years) – independent of corrosiveness and direction of load
- Can be fitted with DYWIDAG post-injection system
- Slender system – small borehole
- A variety of pile head variations can be supplied depending on applications
- Approved *GEWI*® System components

GEWI® Multibar assembly

- Excellent system effectiveness
- Double corrosion protection

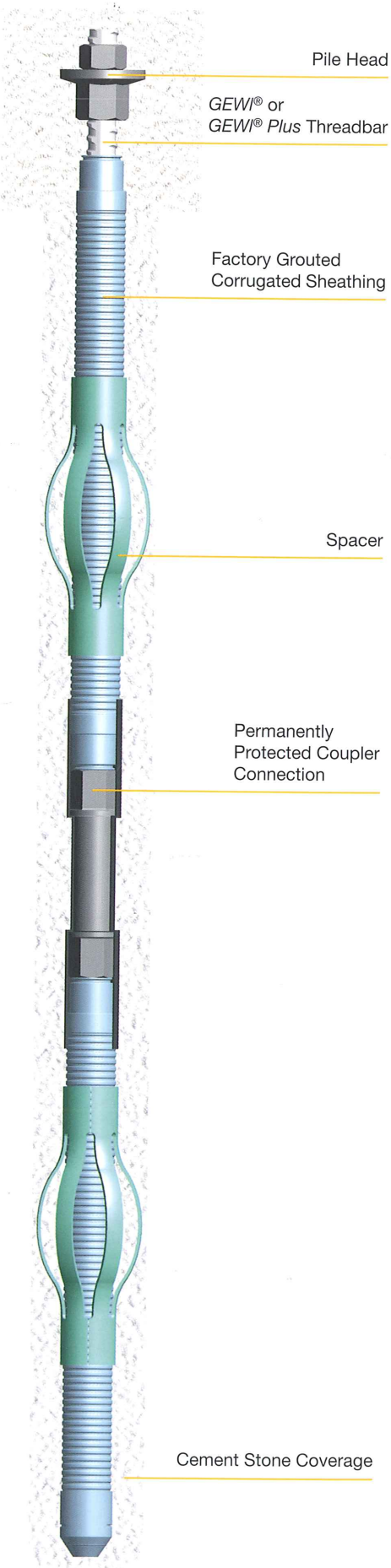


Fields of Application

- Uplift control
- Foundation
- Baseplates
- Reinforcement
- Underpinnings

Double Anchor Piece

Coupler Connection



Additional Information

German Approval DIBt Z-32.1-2 / DIBt Z-32.1-9 /
Austrian Approval BMVIT-327.120/0017-II/ST2/2007