DYWIDAG Tie Rods

Basic Concept

DYWIDAG Bar Systems are perfectly suitable for transferring tensile forces and can therefore be used as tie rods.

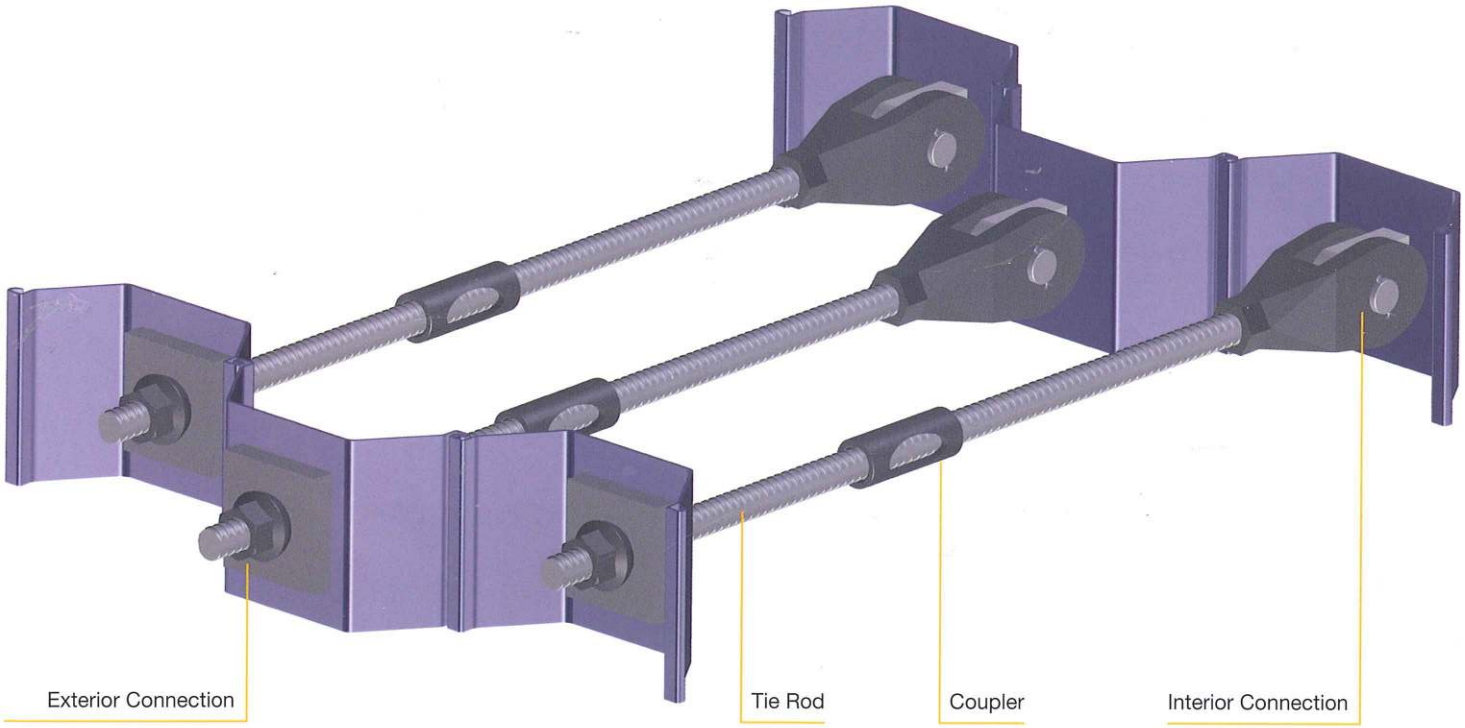
Applications:
Sheet pile wall assembly in harbor and dam construction, cross-linkings, tying back walls in deadman structures, positional stability of joint connections, corner joints and foundations etc.

Due to the continuous *GEWI*® Thread, the bars can be cut, anchored, and coupled at any point and be adjusted to on-site requirements. This makes the system completely independent of installation conditions on site as well as of existing deviations or alterations.

Depending on requirements and steel grades, a variety of corrosion protection methods can be used. This includes loss of section (sacrificial corrosion), galvanizing and coating, wrapping as well as double corrosion protection for highest requirements.

The matching system is chosen in close cooperation with our system specialists and is prefabricated at our plants if necessary.

Special system solutions such as articulated connections, couplers or tensionable connections can be provided for anchoring and connecting DYWIDAG Bars to the structure that needs to be stabilized. Our Technical Service is able to provide prompt customized solutions for special installation situations such as limited working space.



Fields of Application

- Harbor / quay construction
- Dam and ramp construction
- Bracings
- Tie rods
- Tie backs
- Positional stability

Key Features

- The complete system features coarse *GEWI*® Thread that is suitable for on-site use
- *GEWI*® and *GEWI*® *Plus* steel grades are insensitive to embrittlement and stress corrosion cracking
- Various corrosion protection systems are applicable
- Comprehensive range of accessories for anchoring and coupling
- The system can be easily, quickly and safely adjusted to on-site conditions
- No limitation of installation tolerances
- Prestressing for deformation minimization
- Weldable bars and accessories
- Weight reduction of approx. 50% in comparison to S355 bars

Additional Information

DYWIDAG Tie Rods Brochure

Corrosion Protection Systems

Our Sales and Technical Services teams will gladly support you in choosing a suitable corrosion protection system.

- Double Corrosion Protection (DCP) in accordance with EN1537
- Shrinking with corrosion protection shrinking sleeves
- Wrapping with corrosion protection grease tape
- Epoxy-, PUR- or bitumen based coatings
- Hot-dip galvanizing
- Spray galvanizing
- Loss of section (sacrificial corrosion)

Loss of Section in Accordance with EAU and DIN EN 14199 (Bar Diameter – Loss of Thickness in mm)

Aggressivity	Period of use		
	Short (up to 5 years)	Medium (50 years)	Long (100 years)
low	0.1	1	2
medium	0.2	2	–
high	1	–	–

Technical Data

GEWI® B500B & S555/700 Threadbar

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
16	500/550	201	101	111	1.58	5.2	○
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* S670/800 Threadbar

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
18	670/800	254	170	204	2.00	5.4	△
22	670/800	380	255	304	2.98	6.5	△
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	

DYWIDAG Y1050H Prestressing Steel

Nominal diameter Ø [mm]	Yield strength / tensile strength $f_{0,1k}/f_{pk}$ [N/mm²]	Cross-sectional area A [mm²]	Load at yield $F_{p0,1k}$ [kN]	Ultimate load F_{pk} [kN]	Weight [kg/m]	Weight DCP [kg/m]	Approval
26.5	950/1,050	552	525	580	4.48	7.4	□ ◇
32	950/1,050	804	760	845	6.53	9.8	□ ◇
36	950/1,050	1,018	960	1,070	8.27	12.3	□ ◇
40	950/1,050	1,257	1,190	1,320	10.21	14.0	□ ◇
47	950/1,050	1,735	1,650	1,820	14.10	20.0	◇

□ Germany: DIBt Z-20.1-17
× Germany: DIBt Z-34.11-225
○ Germany: DIBt Z-1.5-76, Z-1.5-149, Z-1.5-2
△ Austria: BMVIT-327.120/0034-II/ST2/2005
◇ Austria: BMVIT-327.120/0053-IV/ST2/2011

Additional Information

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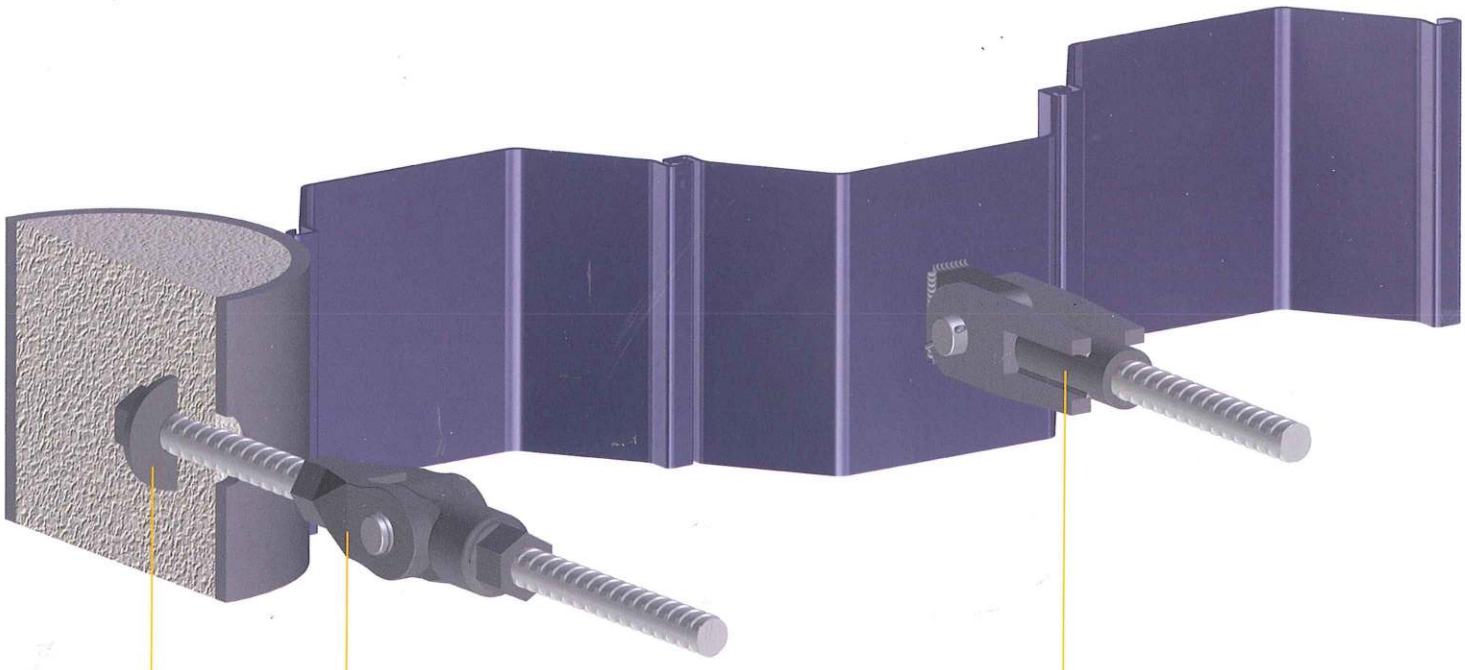
Tie Rod Connections

Anchorages in different variations for steel and concrete structures

- Clevis connections
- Eye pieces
- Anchor pieces

- Articulated
- With angle compensation
- Self-aligning under load
- Tensionable
- Weldable

- Corrosion protected
- Counter-sunk
- Embedded in concrete



Anchorages in Concrete or Drilled Pile with Articulated Connection

Articulated Connection with Sheet Pile Wall using Welding Plate and Clevis

Couplers and Connections

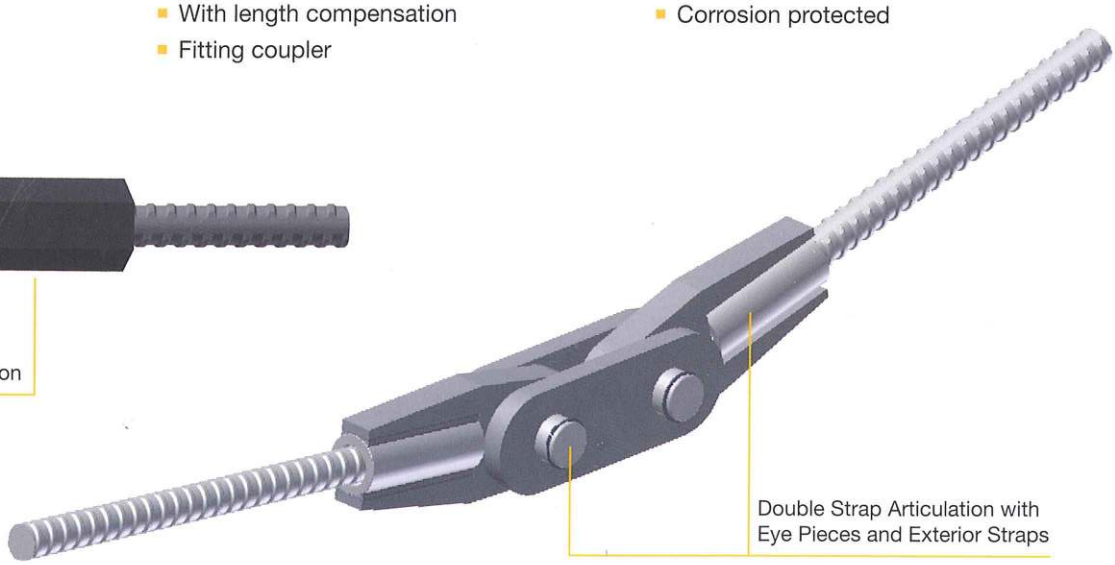
Many variations

- Coupler
- Turnbuckle
- Strap connector

- Articulated
- Double articulation
- With length compensation
- Fitting coupler

- Tensionable
- Weldable
- Corrosion protected

Turnbuckle with Length Compensation



Double Strap Articulation with Eye Pieces and Exterior Straps

Additional Information

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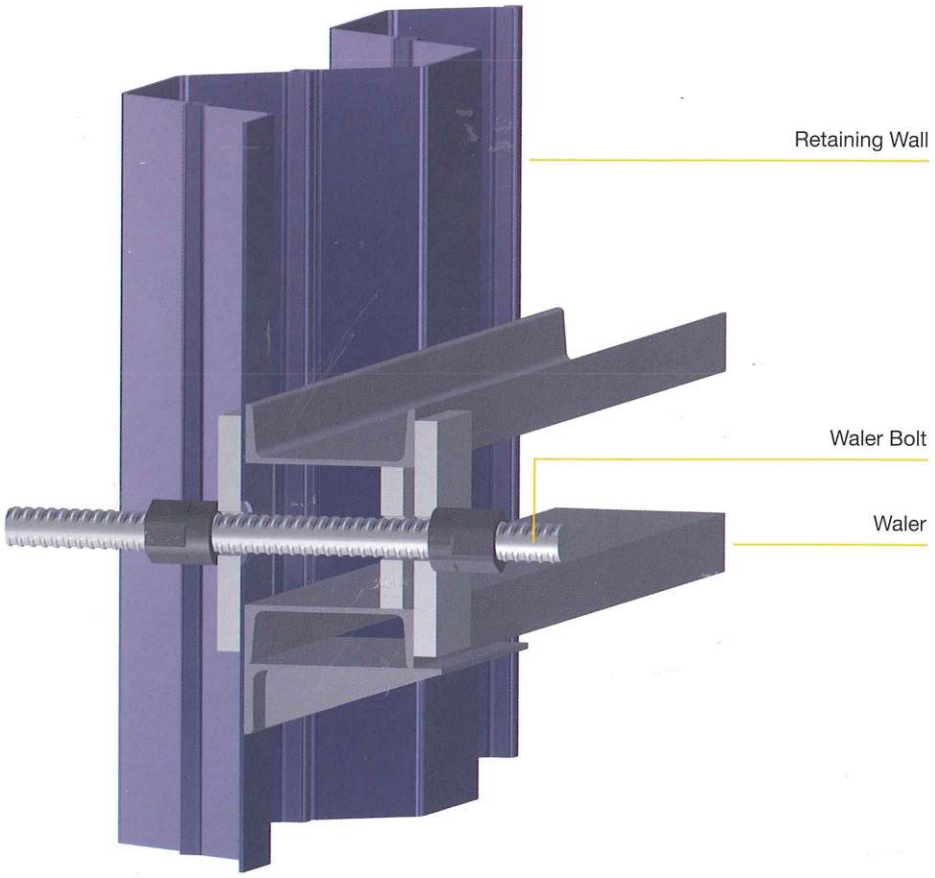
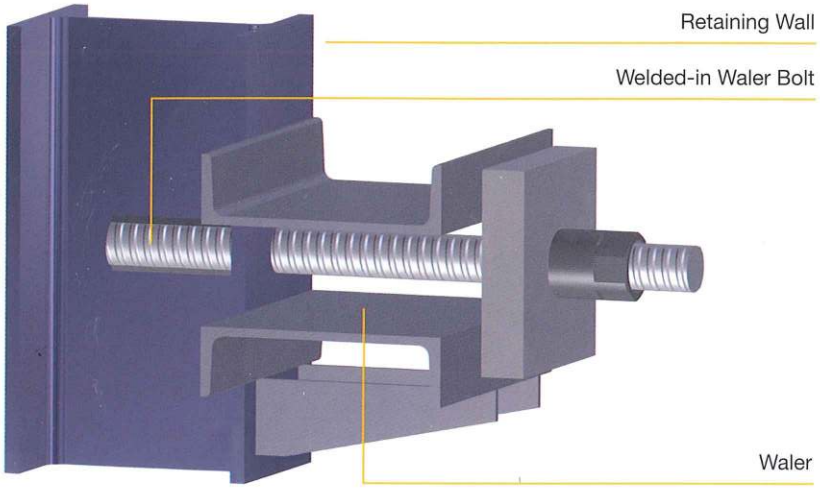
Waler Bolt

- Replaceable
- Weldable
- Additional segments and systems can be connected using couplers
- With angle compensation
- Corrosion protected



Welded-in Waler Bolt

- Counter-sunk
- Inclined installation is possible
- Additional segments and systems can be connected using couplers
- Centrical load transfer on the center beam
- Easy and economical



Additional Information

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