

## **TITAN** Geotechnical System

Direct drilled and continuous flush grouted anchors, micropiles and soil nails

- Technical data
- Drill bit types
- Grout body diameters



## Technical data

Anchor / Pile Type	Unit	TITAN 30/16	TITAN 30/14	TITAN 30/11	TITAN 40/20	TITAN 40/16	TITAN 52/26	TITAN 73/56	TITAN 73/53	TITAN 73/45	TITAN 73/35	TITAN 103/78	TITAN 103/51	TITAN 127/103
Nominal Outside Diameter Ø	mm	30	30	30	40	40	52	73	73	73	73	103	103	127
Nominal Inside Diameter Ø	mm	16	14	11	20	16	26	56	53	45	35	78	51	103
Effective Cross Section $A_{\text{eff}}$	mm <sup>2</sup>	340	375	415	730	900	1250	1360	1615	2239	2714	3140	5680	3475
Ultimate Load $F_u$	kN	245	275	320	540	660	925	1035	1160	1575	1865	2270	3660	2320 <sup>2)</sup>
Yield Point $F_{0,2,k}$	kN	190	220	260	425	525	730	830	970	1270	1430	1800	2670	2030
Yield Stress $f_{0,2,k}$	N/mm <sup>2</sup>	560	585	625	590	590	585	610	590	560	530	565	470	585
Axial rigidity $E \times A$ <sup>1)</sup>	10 <sup>3</sup> kN	63	69	83	135	167	231	251	299	414	502	580	1022	640
Flexural rigidity $E \times I$ <sup>1)</sup>	10 <sup>6</sup> kNmm <sup>2</sup>	3,7	3,8	5,2	15	17	42	125	143	178	185	564	794	1163
Weight approx.	kg/m	2,7	2,87	3,29	5,6	7,17	9,87	10,75	13,2	17,8	21,2	25,3	44,6	28,9
Standard length	m	3	3/4	2/3/4	3/4	2/3/4	3	6,25	3	3	4	3	3	3
Thread Left / Right Hand	-	left	left	left	left	left	left/ right	right	right	right	right	right	right	right




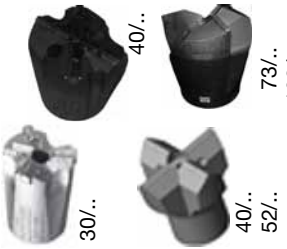


<sup>1)</sup> The values are based on test results, it is not possible to evaluate an E-modulus out of these values. E. & O.E.

subject to change without notice

<sup>2)</sup> Only valid for the hollow bar without coupling nut, the ultimate load of the coupling nut is 2048 kN

# Drill bit types



drill bits Ø mm	hardened clay bit	cross cut drill bit	button drill bit	carbide cross cut/tri-wing drill bit	carbide button drill bit	carbide cross cut 3-step drill bit
<b>description</b>	 for clay, soft soil and sand/gravel < 50 S.P.T.	 for mixed soil with obstacles > 50 S.P.T.	 for weathered soft rock and gravel hardness < 70 MPa	 for hard rock granite, dolomite, sandstone, hardness 70-150 MPa	 for very hard or high quartzite rock hardness > 70 MPa	 for directional stability of ± 2 % of the total length
<b>TITAN 30/..</b>	75 95	76 90	42 46 51 55 <b>70</b>	46	51	75
<b>with adaptor 40</b>	<b>110</b> <b>150</b>	<b>115</b>	<b>70</b>	<b>70</b> <b>90</b>	<b>70</b> <b>90</b> <b>115</b>	<b>90</b>
<b>TITAN 40/..</b>	110 150 <b>175</b>	90 115 <b>130</b>	70	70 90	70 90 <b>115</b>	90
<b>with adaptor 52</b>	<b>175</b>	<b>130</b>	--	--	115	--
<b>TITAN 52/..</b>	130 175 <b>200</b>	115 130 <b>175</b>	--	115	115	--
<b>with adaptor 73</b>	<b>200</b>	<b>175</b>	--	<b>130</b>	<b>130</b>	<b>130</b>
<b>TITAN 73/..</b>	200	130 175	--	130	130	130
<b>with adaptor 103</b>	<b>220</b> <b>280</b>	<b>220</b> <b>280</b>	--	<b>175</b>	<b>175</b>	--
<b>TITAN 103/..</b>	220 280	175	--	175	175	--
<b>TITAN 127/..</b>	220	200	--	--	200	--

\* Illustrations are subject to alterations

## Indicative grout body diameters

anchor/ pile type	drill bit	diameter mm	rock mm	cohe- sive soil mm	sand and gravel-sand mm	medium and coarse gravel mm
TITAN 30/..	button drill bit	42	52			
TITAN 30/..	button drill bit	46	56			
TITAN 30/..	button drill bit	51	61			
TITAN 30/..	button drill bit	55	65			
TITAN 30/..	carbide cross cut drill bit	46	56			
TITAN 30/..	carbide button drill bit	51	61			
TITAN 30/..	carbide cross cut 2-step drill bit	75	85			
TITAN 30/..	cross cut drill bit	76		100	125	150
TITAN 30/..	cross cut drill bit	90		115	140	165
TITAN 30/..	hardened clay bit	75		100	125	150
TITAN 30/..	hardened clay bit	95		120	145	170
TITAN 30/..	piling cone	75		100		
TITAN 40/..	hardened clay bit	110		135	160	185
TITAN 40/..	hardened clay bit	150		175	200	225
TITAN 40/..	button drill bit	70	80			
TITAN 40/..	carbide button drill bit	70	80			
TITAN 40/..	carbide button drill bit	90	100			
TITAN 40/..	carbide cross cut drill bit	70	80			
TITAN 40/..	carbide cross cut drill bit	90	100			
TITAN 40/..	cross cut drill bit	90		115	140	165
TITAN 40/..	cross cut drill bit	115		140	165	190
TITAN 40/..	carbide cross cut 3-step drill bit	90	100			
TITAN 40/..	piling cone	90		115		
TITAN 52/..	cross cut drill bit	115		140	165	190
TITAN 52/..	cross cut drill bit	130		155	180	205
TITAN 52/..	hardened clay bit	130		155	180	205
TITAN 52/..	hardened clay bit	175		200	225	250
TITAN 52/..	carbide cross cut drill bit	115	125			
TITAN 52/..	carbide button drill bit	115	125			
TITAN 73/..	cross cut drill bit	130		155	180	205
TITAN 73/..	cross cut drill bit	175		200	225	250
TITAN 73/..	carbide tri-wing drill bit	130	140			
TITAN 73/..	hardened clay bit	200		225	250	275
TITAN 73/..	carbide button drill bit	130	140			
TITAN 73/..	carbide cross cut 3-step drill bit	130	140			
TITAN 103/..	hardened clay bit	220		245	270	295
TITAN 103/..	hardened clay bit	280		305	330	355
TITAN 103/..	cross cut drill bit	175		200	225	250
TITAN 103/..	carbide button drill bit	175	185			
TITAN 103/..	carbide tri-wing drill bit	175	185			
TITAN 127/..	cross cut drill bit	200		225	250	275
TITAN 127/..	hardened clay bit	220		245	270	295
TITAN 127/..	carbide button drill bit	200	210			

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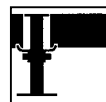


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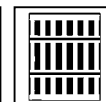
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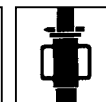
HV-System



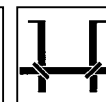
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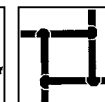
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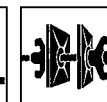
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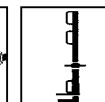
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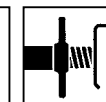
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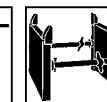
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Ties



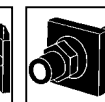
Rail Posts



Struts



Trenching  
Systems



Geotechnical  
Systems