



TITAN Geotechnical System

National Technical Approval
Z-34.14-209
Extension 2018

Technical data

Designation	Unit	TITAN 30/16	TITAN 30/11	TITAN 40/20	TITAN 40/16	TITAN 52/29	TITAN 52/26	TITAN 73/56	TITAN 73/53	TITAN 73/45	TITAN 73/35	TITAN 103/78	TITAN 103/51	TITAN 103/43	TITAN 127/103	TITAN 196/130
Nominal outside diameter D_{steel}	mm	30	30	40	40	52	52	73	73	73	73	103	103	103	127	196
Nominal inside diameter D_{steel}	mm	16	11	20	16	29	26	56	53	45	35	78	51	43	103	130
Effective cross-section A_{eff}	mm ²	336	415	730	900	1050	1250	1460	1615	2239	2714	3140	5680	6025	3744	16077
Ultimate load F_u	kN	236	326	523	673	813	899	1056	1258	1574	1864	2244	3665	4155	2320	9601
Characteristic load-carrying capacity R_k according to German approval document ¹⁾	kN	— ²⁾	250	372	490	640	650	865	900	1218	1386	1626	2500	— ²⁾	— ²⁾	— ²⁾
Characteristic load-carrying capacity R_k (5%-fractile)	kN	190	260	430	530	640	730	865	975	1220	1390	1800	2540	3132	2015	6465
Strain stiffness $E \times A^3$	10 ³ kN	62	83	135	167	195	231	272	299	414	502	580	1022	1083	691	3215
Bending stiffness $E \times I^{3)}$	10 ⁶ kNm ²	3,7	4,6	15	17	37	42	138	143	178	195	564	794	838	1114	10906
Weight	kg/m	2,7	3,3	6,1	7,2	8,6	10,5	11,7	13,9	17,8	21,2	25,3	44,3	47,3	28,4	127,3
Length	m	3	2/3/4	3/4	2/3/4	3	3	3	3	3	3	3	3	3	3	3
Left-/right-hand thread	—	left	left	left	left	left	left right	right	right	right	right	right	right	right	right	right

¹⁾ The utilization of the characteristic load-carrying capacity depends on the cement grout cover according to approval Z-34.14-209.

²⁾ These types are not part of the German approval.

³⁾ In the case of deformation calculations, the specified values shall be used. The values are determined from testing. It is not possible to calculate the modulus of elasticity, cross-section or moment of inertia from these values.

Drill bit types

drill bits Ø mm	hardened clay bit	cross cut drill bit	button drill bit	carbide crosscut/ tri-wing drill bit	carbide button drill bit	carbide cross cut 3-step drill bit	carbide-Y- cross drill bit
description	 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	 for hard rock granite, dolomite, sandstone, hardness 70-150 MPa
TITAN 30/..	75 95	76 90	51 55 70	46	51	75	75
TITAN 40/..	110 150	90 115	70	70 90	70 90	90	90 115
TITAN 52/..	130 175	115 130	—	—	115	—	115
TITAN 52/..	130 175	115 130	—	115	115	—	115
TITAN 73/..	200	130 175	—	130	130	130	130
TITAN 103/..	220 280	175 220	—	175	175	—	—
TITAN 127/..	220	200	—	—	200	—	—
TITAN 196/130	—	—	—	340	—	—	—

Illustrations may differ. If required, drill bits of a larger type can be used with an adapter.



Slope stabilisation alongside Nuremberg-Regensburg railway line

Some 8000 lin. m of hot-dip galvanised TITAN 30/11 were used on this project. Falsework.

Falsework and Formwork systems



Trench lining systems



Geotechnical solutions



Certified Management-System to DIN EN ISO 9001:2015



FRIEDR. ISCHEBECK GMBH

Managing Directors: Dipl.-Wi.-Ing. Björn Ischebeck, Dr. jur. Lars Ischebeck
 Loher Str. 31-79 | 58256 Ennepetal | Germany | Phone +49 (2333) 8305-0 | Fax +49 (2333) 8305-55
 E-mail: export@ischebeck.de | www.ischebeck.de