

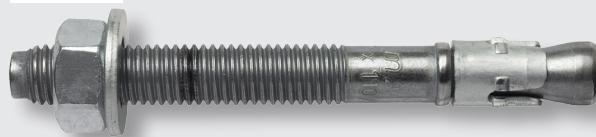
m2 Throughbolt

Features

- GreenTec® corrosion protection - Extra long lasting
- Higher loads, higher security
- Advanced corrosion resistance ≥ 750 hours in salt spray test
- Improved clip design; Higher loads and best expansion
- High-quality and stainless steel appearance
- European Technical Approval Option 7 for non-cracked concrete
- Small edge and spacing distances
- Highest shear loads and bending moment for safe distance fixing
- Setting depth mark for correct installation
- Simple setting process due to low resistance to impacts
- Fast achievement of installation torque
- Zinc plated $> 5\mu\text{m}$
- Pre installation or through fixing
- Indoor applications and unweathered outdoor applications



GreenTec®

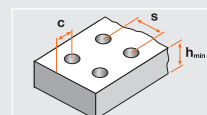
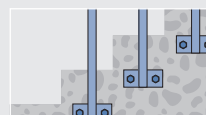
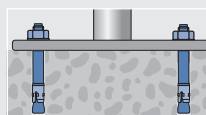


Option 7



Applications

steel constructions, profiles, machines, high-racks, cable trays

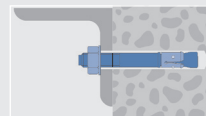
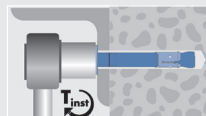
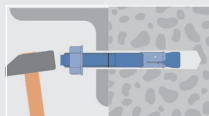
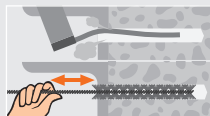
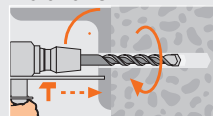


Technical Data

	Concrete C20/25 tension load (kN)	Concrete C20/25 shear load (kN)	Bending moment (Nm)	Min. distance betw. anchors/at edge distance mm s_{min}/c	Min. edge distance/at distance betw. anchors mm c_{min}/s	Minimum thickness of concrete member mm h_{min}	Installation torque (Nm) T_{inst}	Wrench size SW
M6	3.6	2.4	5.7	40/70	40/80	100	5	10
M8	5.7	6.0	14.9	45/45	45/45	100	15	13
M10	7.6	10.2	31.9	50/50	50/50	120	30	17
M12	11.9	13.8	52.3	75/80	75/80	140	50	19
M16	14.3	15.7	118.6	100/190	130/190	160	100	24
M20	23.8	24.5	231.5	200/400	300/350	200	200	30

The partial safety factors of the resistances as well as a partial safety factor of the load of $\gamma_F = 1.4$ are considered / The technical data is only valid for single fixings without consideration of edge and anchor distances / Only valid for setting depths according to approval / 1 kN $\approx$ 100 kg

Installation



Article code	Plug and drill mm $d_{nom} = d_g$	Length mm L	Drilling depth mm h_d	Usable length mm t_{fix}	Effective anchorage depth mm h_{ef}	Box content FS	Outer carton SK	Quantity per pallet
¹⁾ 3200605	6	50	50	5	30	100 21	900 22	54000
3200606	6	65	60	10	40	100 21	900 22	54000
3200608	6	80	60	25	40	100 21	900 22	54000
¹⁾ 3200805	8	50	45	5	27	100 21	900 22	54000
¹⁾ 3200806	8	60	50	10	30	100 21	900 22	54000
3200808	8	80	65	10	50	100 41	300 12	18000
3200885	8	85	65	15	50	100 41	300 12	18000
3200809	8	95	65	25	50	100 51	300 22	18000
3200811	8	115	65	45	50	100 51	300 22	18000
3200816	8	165	65	95	50	50 51	150 22	9000
¹⁾ 3201006	10	60	55	5	33	100 41	300 12	18000
¹⁾ 3201007	10	70	60	10	35	100 51	300 22	18000
3201009	10	95	80	15	58	100 51	300 22	18000
3201011	10	110	80	30	58	50 51	150 22	9000
3201012	10	125	80	45	58	50 51	150 22	9000
3201014	10	140	80	60	58	50 51	150 22	9000
3201016	10	160	80	80	58	50 51	150 22	9000
3201018	10	180	80	100	58	25 51	75 22	4500
¹⁾ 3201208	12	80	70	5	49	50 41	150 12	9000
3201211	12	110	90	15	68	50 51	150 22	9000
3201212	12	125	90	30	68	50 51	150 22	9000
3201214	12	145	90	50	68	25 41	75 12	4500
3201216	12	165	90	70	68	50 51	150 22	9000
3201218	12	185	90	90	68	50 51	150 22	9000
¹⁾ 3201609	16	90	80	5	50	25 51	75 22	3600
¹⁾ 3201611	16	115	100	10	70	25 51	75 22	3600
3201613	16	130	110	15	80	25 51	75 22	3600
3201614	16	145	110	30	80	25 51	75 22	3600
3201616	16	160	110	45	80	25 51	75 22	3600
3201618	16	180	110	65	80	25 51	75 22	3600
^{1) 5)} 1452013	20	130	110	10	76	20 51	60 22	2880
⁵⁾ 1452016	20	160	130	30	100	20 51	60 22	2880

¹⁾ Not part of the approval

⁵⁾ without GreenTec® corrosion protection

Article code	Plug and drill mm $d_{nom} = d_g$	Length mm L	Drilling depth mm h_d	Usable length mm t_{fix}	Effective anchorage depth mm h_{ef}	Unit content	Quantity per pallet
3200080	8	80	65	10	50	300	24000
3200095	10	95	80	15	58	150	12000
3200110	12	110	90	15	68	100	8000

m2 Throughbolt with washer DIN 125A



m2 Throughbolt with washer DIN 125A in Mini-Box, bulk packed



30 × 20 × 12.5 cm



m2-C Throughbolt



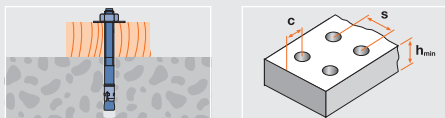
Features

- Higher loads, higher security
- Improved clip design; Higher loads and best expansion
- European Technical Approval Option 7 for non-cracked concrete
- With a big DIN 9021 washer for fixings with slotted holes and for wooden structures
- Small edge and spacing distances
- Highest shear loads and bending moment for safe distance fixing
- Setting depth mark for correct installation
- Simple setting process due to low resistance to impacts
- Fast achievement of installation torque
- Zinc plated > 5µm
- Pre installation or through fixing
- Indoor applications



Applications

wooden constructions, distance fixing

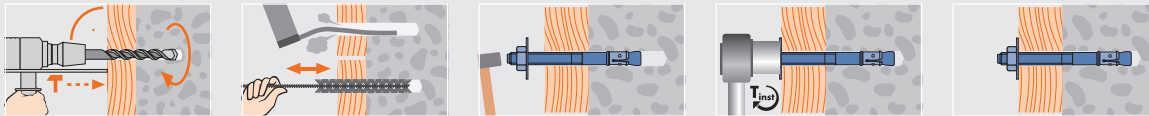


Technical Data

	Concrete C20/25 tension load (kN)	Concrete C20/25 shear load (kN)	Bending moment (Nm)	Min. distance betw. anchors/at edge distance mm s_{min}/c	Min. edge distance/at distance betw. anchors mm c_{min}/s	Minimum thickness of concrete member mm h_{min}	Installation torque (Nm) T_{inst}	Wrench size SW
M8	5.7	6.0	14.9	45/45	45/45	100	15	13
M10	7.6	10.2	31.9	50/50	50/50	120	30	17
M12	11.9	13.8	52.3	75/80	75/80	140	50	19
M16	14.3	15.7	118.6	100/190	130/190	160	100	24

The partial safety factors of the resistances as well as a partial safety factor of the load of $\gamma_F = 1.4$ are considered / The technical data is only valid for single fixings without consideration of edge and anchor distances / Only valid for setting depths according to approval / 1 kN = 100 kg

Installation



m2-C Throughbolt with big washer DIN 9021



Article code	Plug and drill Ø mm $d_{nom} = d_0$	Length mm L	Drilling depth mm h_0	Usable length mm t_{fix}	Effective anchorage depth mm h_{ef}	Box content PS SN	Outer carton	Quantity per pallet
¹⁾ 3210805	8	50	45	5	27	100 41	300 12	18000
¹⁾ 3210806	8	60	50	10	30	100 41	300 12	18000
3210808	8	80	65	10	50	100 51	300 22	18000
3210816	8	165	65	95	50	50 51	150 22	9000
¹⁾ 3211007	10	70	60	10	35	100 51	300 22	18000
3211009	10	95	80	15	58	50 51	150 22	9000
3211011	10	110	80	30	58	25 41	75 12	4500
3211012	10	125	80	45	58	25 41	75 12	4500
3211016	10	160	80	80	58	25 51	75 22	4500
3211018	10	180	80	100	58	25 51	75 22	4500
¹⁾ 1471021	10	210	80	130	58	25 41	75 12	4500
3211211	12	110	90	15	68	25 41	75 12	4500
3211212	12	125	90	30	68	25 41	75 12	4500
3211216	12	165	90	70	68	25 51	75 22	4500
3211218	12	185	90	90	68	25 51	75 22	4500
1471220	12	200	90	105	68	25 51	75 22	4500
1471222	12	220	90	125	68	20 51	60 22	3600
1471224	12	240	90	145	68	20 51	60 22	3600
1471226	12	260	90	165	68	20 51	40 12	2400
1471228	12	280	90	185	68	10	-	-
1471230	12	300	90	205	68	15	-	-
1471233	12	330	90	235	68	10	-	-
1471236	12	360	90	265	68	15	-	-
1471622	16	220	110	105	80	10 51	30 22	1800
1471624	16	240	110	125	80	10 51	20 12	1200
1471626	16	260	110	145	80	10 51	20 12	1200
1471628	16	280	110	165	80	5	-	-
1471630	16	300	110	185	80	5	-	-
1471633	16	330	110	215	80	5	-	-
1471644	16	440	110	325	80	5	-	-

¹⁾ Not part of the approval

m2-C Throughbolt with big washer DIN 9021 in Mini-Box, bulk packed



30 × 20 × 12.5 cm



Article code	Plug and drill Ø mm $d_{nom} = d_0$	Length mm L	Drilling depth mm h_0	Usable length mm t_{fix}	Effective anchorage depth mm h_{ef}	Unit content	Quantity per pallet
32100185	12	185	90	90	68	25	2000
32100200	12	200	90	105	68	25	2000
32100220	12	220	90	125	68	20	1600
32100240	12	240	90	145	68	20	1600
32100260	12	260	90	165	68	20	1600