Ankr-TITE® Wedge Anchors

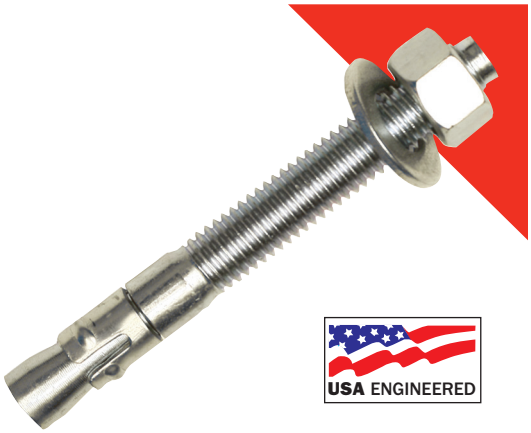
wej-it FASTENING SYSTEMS

Code Compliance:
Miami-Dade NOA #08-0911.02

Features unique safety shoulder and clip combination

Key Features and Benefits

- **Bolt Size is Hole Size®**
- **Available in four combinations:**
  1. **Zinc plated carbon steel with steel clip**
  2. **Hot-dip galvanized carbon steel with 304 stainless steel clip**
  3. **All 304 stainless steel**
  4. **All 316 stainless steel**
- Sets up fast
  - Needs less rotation to achieve required torque
- Unique **"safety shoulder"**
  - Supports clip when anchor is under strain
  - Minimizes bolt-end collapse and/or clip slippage under ultimate loading conditions
- Enlarged dimples on clip
  - Reduce slip
  - Increase response in lighter concrete
- 360° segment contact on clip equalizes load distribution
  - Increases load-carrying capacity
  - More adaptable to/"forgiving" in different installation conditions



Specifications, Listings and Approvals

Diameters: 1/4" – 1-1/4"

Body
- Carbon Steel: UNS G 10350, AISI 1035
- Stainless: AISI 12L14 Type 304 or Type 316

Finish
Zinc: ASTM B633 Type III, SC1
Hot-dip galvanized: ASTM A153; B454; B695-82 and MIL-C-81562A

Clip
- Carbon steel: ASTM A108 Grade 1018
- Stainless steel: Type 304 or Type 316

Washer
- Carbon steel: ANSI/ASME B18.22.1 zinc coated
- Stainless steel: Type 304 or Type 316

Nut
- Carbon steel: ANSI/ASME B18.2.2 zinc coated
- Stainless steel: Type 304 or Type 316

Federal Specifications
- QQZ-325Z, Type II, Class 3
- GSA FFS-325 Group II, Type 4, Class 1 (Clear Chromate Added)
- GSA FFS-325 Group II, Type 4, Class 1

Code Compliance
- Miami/Dade NOA: No. 08-0911.02
- State DOT Approvals: Call Customer Service for specific information by state

Order Information†

Carbon Steel Catalog No.		Stainless Steel Catalog No.		Anchor Size (in.)	Min. Embed. (in.)	Thread Length (in.)	Quantity Box /Carton
Zinc Plated	Galvanized	Type 304	Type 316				
AT1413	ATG1413	ATS1413	ATSS1413*	1/4 x 1-3/4	1-1/4	3/4	100/800
AT1421	ATG1421	ATS1421	ATSS1421	1/4 x 2-1/4	1-1/4	1-1/4	100/800
AT1431	ATG1431	ATS1431	ATSS1431	1/4 x 3-1/4	1-1/4	2-1/4	100/800
AT3821	ATG3821	ATS3821	ATSS3821	3/8 x 2-1/4	1-3/4	1	50/400
AT3823	ATG3823	ATS3823	ATSS3823	3/8 x 2-3/4	1-3/4	1-1/2	50/400
AT3830	ATG3830	ATS3830	ATSS3830	3/8 x 3	1-3/4	1-3/4	50/400
AT3833	ATG3833	ATS3833	ATSS3833	3/8 x 3-3/4	1-3/4	2-1/2	50/400
AT3850	ATG3850	ATS3850	ATSS3850	3/8 x 5	1-3/4	3-1/4	50/400
AT3870	ATG3870	ATS3870	ATSS3870	3/8 x 7	1-3/4	4-1/2	50/300
AT1223	ATG1223	ATS1223	ATSS1223	1/2 x 2-3/4	2-1/8	1-1/8	25/200
AT1233	ATG1233	ATS1233	ATSS1233	1/2 x 3-3/4	2-1/8	2-1/8	25/200
AT1241	ATG1241	ATS1241	ATSS1241	1/2 x 4-1/4	2-1/8	2-5/8	25/200
AT1242	ATG1242*	ATS1242*	ATSS1242*	1/2 x 4-1/2	2-1/8	2-5/8	25/200
AT1252	ATG1252	ATS1252	ATSS1252	1/2 x 5-1/2	2-1/8	3-3/4	25/150
AT1270	ATG1270	ATS1270	ATSS1270	1/2 x 7	2-1/8	4-1/2	25/150
AT1282	ATG1282	ATS1282*	ATSS1282*	1/2 x 8-1/2	2-1/8	5	10/40
AT1210	ATG1210	ATS1210*	ATSS1210*	1/2 x 10	2-1/8	5	10/40
AT5832	ATG5832	ATS5832	ATSS5832	5/8 x 3-1/2	2-5/8	1-1/2	10/80
AT5841	ATG5841	ATS5841	ATSS5841	5/8 x 4-1/4	2-5/8	2-3/8	10/80
AT5850	ATG5850	ATS5850	ATSS5850	5/8 x 5	2-5/8	3-1/8	10/80
AT5860	ATG5860	ATS5860	ATSS5860	5/8 x 6	2-5/8	4	10/80
AT5870	ATG5870	ATS5870	ATSS5870	5/8 x 7	2-5/8	4-1/2	10/80
AT5882	ATG5882	ATS5882	ATSS5882	5/8 x 8-1/2	2-5/8	5	10/40
AT5810	ATG5810	ATS5810	ATSS5810*	5/8 x 10	2-5/8	5	10/40
AT5812	ATG5812	ATS5812*	ATSS5812*	5/8 x 12	2-5/8	5	10/40
AT3441	ATG3441	ATS3441	ATSS3441*	3/4 x 4-1/4	3-1/4	2	10/80
AT3443	ATG3443	ATS3443	ATSS3443	3/4 x 4-3/4	3-1/4	2-1/2	10/80
AT3452	ATG3452	ATS3452	ATSS3452	3/4 x 5-1/2	3-1/4	3-1/4	10/60
AT3461	ATG3461	ATS3461	ATSS3461	3/4 x 6-1/4	3-1/4	3-3/4	10/60
AT3470	ATG3470	ATS3470	ATSS3470	3/4 x 7	3-1/4	4-3/4	10/60
AT3482	ATG3482	ATS3482	ATSS3482	3/4 x 8-1/2	3-1/4	5	10/40
AT3410	ATG3410	ATS3410	ATSS3410*	3/4 x 10	3-1/4	5	10/40
AT3412	ATG3412	ATS3412	ATSS3412*	3/4 x 12	3-1/4	5	4/16
AT7860	ATG7860	ATS7860*	ATSS7860*	7/8 x 6	3-7/8	3-1/2	4/24
AT7880	ATG7880	ATS7880*	ATSS7880*	7/8 x 8	3-7/8	5	4/16
AT7810	ATG7810	ATS7810*	ATSS7810*	7/8 x 10	3-7/8	5	4/16
AT1060	ATG1060	ATS1060	ATSS1060*	1 x 6	4	3	4/24
AT1090	ATG1090	ATS1090	ATSS1090*	1 x 9	4	5	4/16
AT1012	ATG1012	ATS1012	ATSS1012*	1 x 12	4	5	4/16
AT11490*	ATG11490[1]	ATS11490*	ATSS11490*	1-1/4 x 9	5-5/8	5	4/16
AT11412*	ATG11412[1]	ATS11412*	ATSS11412*	1-1/4 x 12	5-5/8	5	4/16

† Call for pallet pricing

* Special order items: please contact Customer Service, extension 101

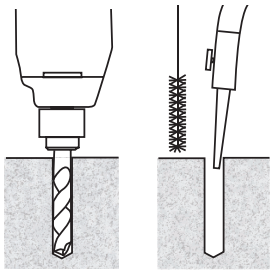
1. ATG11490 and ATG11412 have a steel clip instead of a stainless steel clip

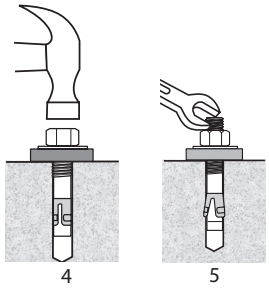
Ankr-TITE® Wedge Anchors

wej-it FASTENING SYSTEMS

Installation Instructions

1. Drill the hole, whose diameter equals the anchor diameter, perpendicular to the work surface. To assure full holding power, do not ream the hole or allow the drill to wobble.
2. Drill the hole deeper than the intended embedment, but not closer than two diameters to the opposite surface of the concrete.
3. A clean hole is necessary for proper performance. Clean the hole using a nylon brush and compressed air.
4. Assemble the nut and washer so that the top of the nut is flush with the top of the anchor. Drive the anchor through the material to be fastened so that the nut and washer are flush with the surface of the material.
5. Tighten the nut, or head, 3 to 5 turns past the hand tight position. Installing the "Ankr-TITE® Series" of anchors with a torque wrench is recommended for optimum performance. Refer to adjacent chart.*





NOTE: Always wear safety glasses. Follow drill manufacturer's instructions. Use only solid carbide-tipped drill bits meeting ANSI B212.15 diameter standards.

*Torque Values

Anchor Dia. (in.)	Recommended Setting Torque (ft lb.)		W/O Inspection Turns To Set
	for Zinc & Galvanized	Stainless Steel	
1/4	6-8	4-7	3-5
3/8	20-25	20-25	3-5
1/2	50-55	40-50	3-5
5/8	90-95	80-90	3-5
3/4	165-175	145-155	3-5
7/8	240-250	N/A	3-5
1	290-300	250-275	3-5

Recommended Edge Distance & Spacing

Anchor Diameter (in.)	Embedment Depth (in.)	Edge Distance Requirements (in.)
1/4	1-1/4	2-1/4
	2-7/8	2-1/8
3/8	1-3/4	3-1/8
	4-5/8	3-1/2
1/2	2-1/8	3-3/4
	2-1/2	4-3/8
	6-1/4	4-1/2
5/8	2-5/8	4-1/2
	3-1/4	5-1/2
	6-1/4	4-1/2
3/4	3-1/4	5-1/2
	3-3/4	6-1/2
	7-7/8	6
7/8	3-7/8	6-3/4
	8-5/8	6-1/2
1	4	7
	10-1/2	7- 7/8

Edge Distance

Embedment (E) in Anchor Diameters	Edge Distance
E < 6d (shallow)	1.75E
6d ≤ E ≤ 8d (standard)	1.00E
8d < E (deep)	0.75E

Load Adjustment Factor For Anchor Spacing

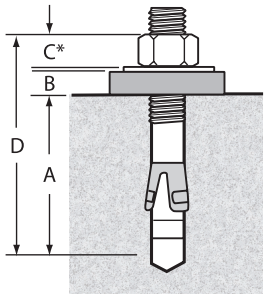
Spacing Tension ^{f}AN (all dimensions in inches)

Anchor Dia. 1/4			Anchor Dia. 3/8			Anchor Dia. 1/2			Anchor Dia. 5/8			Anchor Dia. 3/4		
Embed. Depth	1-1/4	2-1/2	Embed. Depth	1-3/4	4-5/8	Embed. Depth	2-1/8	6-1/4	Embed. Depth	2-3/4	6	Embed. Depth	3-3/4	7-7/8
1-1/8			1	0.50		1			3			2		
1-1/4	0.65	0.70	1-1/4	0.65	0.7	1-1/4	0.60	0.70	2-1/4	0.65	0.75	2-1/4		
1-1/2	0.75	0.75	1-1/2	0.70	0.75	1-1/2	0.70	0.75	2-1/2	0.77	0.76	2-1/2		
1-3/4	0.78	0.79	1-3/4	0.73	0.79	2-1/4	0.83	0.78	2-3/4	0.95	0.78	3	0.60	
2	0.86	0.84	2	0.76	0.80	2-1/2	0.85	0.79	3-1/2	0.93	0.80	4	0.75	0.75
2-1/4	0.87	0.85	2-1/2	0.77	0.83	3	0.90	0.80	4	0.95	0.83	5	0.80	0.80
2-1/2	0.99	0.86	3	1.00	0.87	3-3/8	0.93	0.87	4-1/2	0.96	0.86	5-3/4	0.87	0.83
3	1.00	0.87	3	0.80	0.85	3-3/4	0.99	0.90	5-1/2	0.99	0.93	6-1/4	0.90	0.85
3-3/8		0.88	3-1/2	0.90	0.90	4-1/4	1.00	0.93	6	1.00	0.96	7	1.00	0.90
3-1/2		0.89	3-3/4	1.00	0.93	4-3/4		0.96	7		1.00	8		0.96
3-3/4		1.00	4		0.95	5		0.98				9		0.98
			4-1/2		0.98	6		0.99				10		1.00
			4-5/8		1.00	7		1.00						

Length Selection

Minimum Embedment (A)
\+ Attached Material Thickness (B)
\+ Nut Height* (C)
= Total Anchor Length (D)

*Nut height equals anchor diameter.



Length Identification Codes

Code	Length of Anchor
A	1-1/2 < 2
B	2 < 2-1/2
C	2-1/2 < 3
D	3 < 3-1/2
E	3-1/2 < 4
F	4 < 4-1/2
G	4-1/2 < 5
H	5 < 5-1/2
I	5-1/2 < 6

Code	Length of Anchor
J	6 < 6-1/2
K	6-1/2 < 7
L	7 < 7-1/2
M	7-1/2 < 8
N	8 < 8-1/2
O	8-/2 < 9
P	9 < 9-1/2
Q	9-1/2 < 10
R	10 < 11

Code	Length of Anchor
S	11 < 12
T	12 < 13
U	13 < 14
V	14 < 15
W	15 < 16
X	16 < 17
Y	17 < 18
Z	18 < 19

Maximum Tensile Capacity For Static Loads All Anchor Materials

Anchor & Hole Size	4000 psi Concrete			6000 psi Concrete		
	Embed. (in.)	Tension (lb.)	Shear (lb.)	Embed. (in.)	Tension (lb.)	Shear (lb.)
1/4	1-1/4	2000	2811	1-1/4	2042	2811
	2-1/2	2600	2811	2-1/2	2826	2811
3/8	1-3/4	3850	3075	1-3/4	4790	3075
	4-5/8	6020	4227	4-5/8	6635	4227
1/2	2-1/8	6324	6260	2-1/8	7540	6260
	6-1/4	8249	7516	6-1/4	10713	7516
5/8	2- 5/8	9527	9760	2-5/8	10597	9760
	6	15893	11743	6	16705	11743
3/4	3-3/4	13130	15860	3-3/4	18979	15860
	7-7/8	19795	23817	7-7/8	24145	23817
7/8	4	16591	24000	4	19945	24000
	8	27484	25710	8	33113	25710
1	5	26676	32494	5	30683	32494
	9	36171	36896	9	36171	36896
1-1/4	5-5/8	28733	46975	5-5/8	28733	46975
	10	50390	46975	10	50390	46975

Allowable Tensile Capacity For Static Loads All Anchor Materials

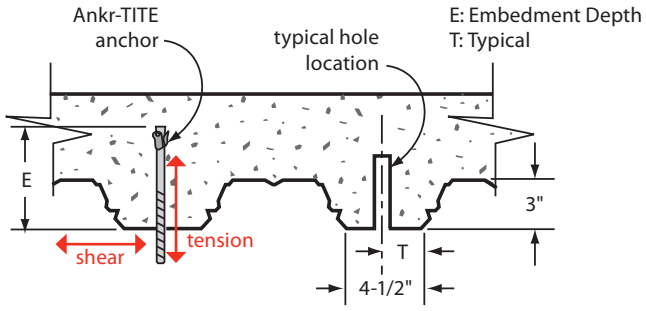
Anchor & Hole Size	4000 psi Concrete			6000 psi Concrete		
	Embed. (in.)	Tension (lb.)	Shear (lb.)	Embed. (in.)	Tension (lb.)	Shear (lb.)
1/4	1-1/4	500	703	1-1/4	511	703
	2-1/2	650	703	2-1/2	707	703
3/8	1-3/4	963	769	1-3/4	1198	769
	4-5/8	1505	1057	4-5/8	1659	1057
1/2	2-1/8	1581	1565	2-1/8	1885	1565
	6-1/4	2062	1879	6-1/4	2678	1879
5/8	2-5/8	2382	2440	2-5/8	2649	2440
	6	3973	2936	6	4176	2936
3/4	3-3/4	3283	3965	3-3/4	4745	3965
	7-7/8	4949	5920	7-7/8	6036	5954
7/8	4	4148	6000	4	4986	6000
	8	6871	6428	8	8278	6428
1	5	6669	8124	5	7670	8124
	9	9043	9224	9	9043	9224
1-1/4	5-5/8	7183	11744	5-5/8	7183	11744
	10	12598	11744	10	12598	11744

Concrete-filled Steel Deck

Ultimate Tension and Shear

Anchor Dia. (in.)	Install. Torque	Embed. Depth (in.)	Lower Flute of Steel Deck with Lightweight Concrete Fill* f'_c = 3,000 PSI	
			Tension (lb.)	Shear (lb.)
3/8	20-25	1-3/4	2414	4054
		3	3169	
1/2	50-55	2-1/2	3458	5038
		4	4274	
5/8	90-95	3-1/4	4199	5884
		5	5036	
3/4	110-120	3-3/4	5136	8030
		5-1/2	7711	

W3 FORMLDK 20 gauge galvanized



For S1: 1 in. = 25.4 mm

- Information provided only for the use of a qualified design engineer. Use of technical data by unqualified persons could cause serious damage, injury, or even death.

NOTES:

- For static loads, use one-fourth of the maximum tensile and shear capacities for the recommended 4:1 safety factor.
- Tested to ASTM E488 Test Standard. Sources (available upon request): U.S. Testing Co., Tulsa, OK, Stork, Minneapolis, MN

ALLOWABLE Tension Capacity for Static Load: 4K & 6K psi Concrete, 4-1 Safety Factor

PSI	Dia. (in.)	Embedment (in.)																		
		1-3/4	2	2-1/4	2-1/2	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-5/8						
4K	3/8	963	1010	1057	1104	1151	1198	1246	1289	1340	1387	1434	1481	1505						
6K		1198	1238	1278	1318	1358	1398	1438	1478	1518	1559	1599	1639	1659						
		2-1/8	2-1/2	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6	6-1/4		
4K	1/2	1581	1625	1654	1683	1712	1742	1771	1800	1829	1858	1887	1917	1946	1975	2004	2033	2062		
6K		1885	1957	2005	2053	2101	2150	2198	2246	2294	2342	2390	2438	2486	2534	2582	2630	2678		
		2-5/8	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6				
4K	5/8	2382	2441	2559	2677	2794	2912	3030	3148	3266	3384	3502	3620	3738	3855	3973				
6K		2649	2701	2819	2932	3045	3158	3271	3386	3498	3611	3724	3837	3950	4063	4176				
		3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	7-7/8	
4K	3/4	3283	3384	3485	3586	3687	3788	3889	3990	4091	4192	4292	4393	4494	4595	4696	4797	4898	4949	
6K		4745	4823	4901	4980	5058	5136	5215	5293	5371	5449	5528	5606	5684	5762	5841	5919	5997	6036	
		4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	8		
4K	7/8	4148	4318	4488	4658	4828	4999	5169	5339	5510	5680	5850	6020	6190	6361	6531	6701	6871		
6K		4986	5192	5398	5603	5809	6015	6221	6427	6633	6838	7044	7250	7455	7661	7867	8073	8278		
		5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	8	81/4	8-1/2	8-3/4	9		
4K	1	6669	6820	6921	7116	7263	7411	7559	7708	7856	8004	8153	8301	8449	8598	8746	8895	9043		
6K		7671	7757	7842	7929	8014	8100	8185	8271	8357	8443	8528	8614	8700	8786	8871	8958	9043		
		5-5/8	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	8	8-1/4	8-1/2	8-3/4	9	9-1/4	9-1/2	9-3/4	10
4K	1-1/4	7183	7338	7647	7957	8266	8576	8885	9194	9504	9813	10123	10432	10741	11051	11360	11669	11979	12288	12598

MAXIMUM Tension Capacity for Static Loads: 4K & 6K psi Concrete

PSI	Dia. (in.)	Embedment (in.)																		
		1-3/4	2	2-1/4	2-1/2	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-5/8						
4K	3/8	3850	4039	4227	4416	4605	4793	4982	5157	5360	5548	5737	5926	6020						
6K		4790	4950	5111	5271	5432	5592	5753	5913	6073	6234	6394	6555	6635						
		2-1/8	2-1/2	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6	6-1/4		
4K	1/2	6324	6499	6616	6732	6849	6966	7082	7199	7316	7532	7549	7666	7782	7899	8016	8132	8249		
6K		7540	7828	8021	8213	8405	8598	8790	8982	9175	9367	9559	9751	9944	10136	10328	10521	10713		
		2-5/8	2-3/4	3	3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6				
4K	5/8	9527	9763	10234	10706	11177	11649	12121	12592	13064	13535	14007	14478	14950	15421	15893				
6K		10597	10803	11276	11728	12181	12633	13085	13538	13990	14443	14895	15348	15800	16253	16705				
		3-3/4	4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	7-7/8	
4K	3/4	13130	13534	13938	14342	14746	15150	15554	15958	16362	16765	17169	17573	17977	18381	18785	19189	19593	19795	
6K		18979	19292	19605	19918	20231	20544	20858	21171	21484	21797	22110	22423	22736	23049	23362	23675	23988	24145	
		4	4-1/4	4-1/2	4-3/4	5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	8		
4K	7/8	16591	17272	17953	18633	19314	19995	20676	21357	22038	22718	23399	24080	24761	25442	26122	26803	27484		
6K		19945	20768	21591	22414	23237	24060	24883	25706	26529	27352	28175	28998	29821	30644	31467	32290	33113		
		5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	8	8-1/4	8-1/2	8-3/4	9		
4K	1	26676	27279	27863	28465	29050	29643	30237	30830	31424	32017	32610	33204	33797	34391	34984	35578	36171		
6K		30683	31026	31369	31712	32055	32398	32741	33084	33427	33770	34113	34456	34799	35142	35485	35828	36171		
		5-5/8	5-3/4	6	6-1/4	6-1/2	6-3/4	7	7-1/4	7-1/2	7-3/4	8	8-1/4	8-1/2	8-3/4	9	9-1/4	9-1/2	9-3/4	10
4K	1-1/4	28733	29352	30589	31827	33064	34302	35539	36777	38015	39252	40490	41727	42965	44202	45440	46677	47915	49152	50390