

Trubolt[®] Wedge Anchors

**Dependable,
Heavy-Duty,
Inspectable,
Wedge Type
Expansion
Anchor**



**2018 IBC
Compliant**

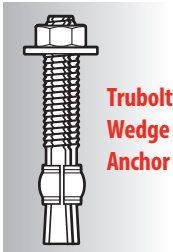
Trubolt[®]
Wedge Anchors

DESCRIPTION/SUGGESTED SPECIFICATIONS

Wedge Type Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE

Trubolt Wedge anchors feature a stainless steel expansion clip, threaded stud body, nut and washer. Anchor bodies are made of plated carbon steel, hot-dipped galvanized carbon steel, type 304 stainless steel or type 316 stainless steel as identified in the drawings or other notations.



The exposed end of the anchor is stamped to identify anchor length. Stampings should be preserved during installation for any subsequent embedment verification.

Use carbide tipped hammer drill bits made in accordance with ANSI B212.15-1994 to install anchors.

Anchors are tested to ACI 355.2 and ICC-ES AC193. Anchors are listed by the following agencies as required by the local building code: ICC-ES, UL, FM, and Caltrans.

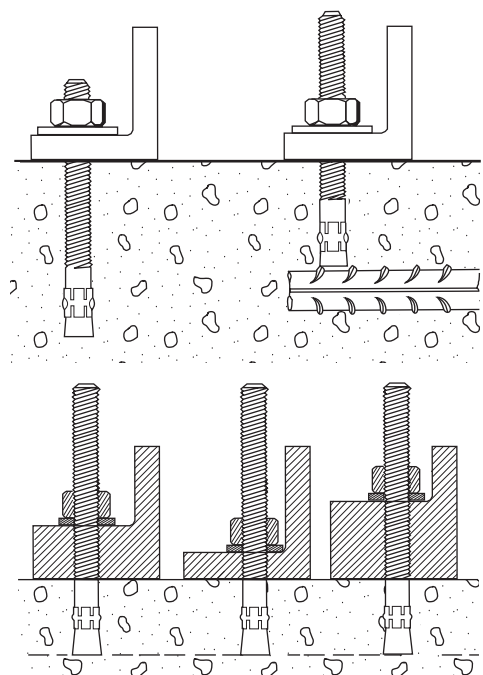
ADVANTAGES

- 2015 International Building Code (IBC) Compliant for 1/4" through 1/2" diameters-carbon steel
- Versatile fully threaded design is standard on sizes up to 1" diameter and 10" length
- Anchor diameter equals hole diameter
- Standard carbon and stainless steel anchors
- Non bottom-bearing, may be used in hole depth exceeding anchor length
- Can be installed through the work fixture, eliminating hole spotting
- Inspectable torque values, indicating proper installation

Fully Threaded Advantage

Trubolt's fully threaded feature eliminates subsurface obstruction problems.

Fully threaded design accommodates various material thicknesses at the same embedment. One anchor length saves time and money.



APPLICATIONS



Anchoring machinery and conveyors is a common wedge anchor application. The Trubolt is fully threaded to allow a large range of embedment and fixture thickness.

LENGTH INDICATION CODE*

CODE	LENGTH OF ANCHOR		CODE	LENGTH OF ANCHOR	
	in.	mm		in.	mm
A	1-1/2 < 2	(38.1 < 50.8)	K	6-1/2 < 7	(165.1 < 177.8)
B	2 < 2-1/2	(50.8 < 63.5)	L	7 < 7-1/2	(177.8 < 190.5)
C	2-1/2 < 3	(63.5 < 76.2)	M	7-1/2 < 8	(190.5 < 203.2)
D	3 < 3-1/2	(76.2 < 88.9)	N	8 < 8-1/2	(203.2 < 215.9)
E	3-1/2 < 4	(88.9 < 101.6)	O	8-1/2 < 9	(215.9 < 228.6)
F	4 < 4-1/2	(101.6 < 114.3)	P	9 < 9-1/2	(228.6 < 241.3)
G	4-1/2 < 5	(114.3 < 127.0)	Q	9-1/2 < 10	(241.3 < 254.0)
H	5 < 5-1/2	(127.0 < 139.7)	R	10 < 11	(254.0 < 279.4)
I	5-1/2 < 6	(139.7 < 152.4)	S	11 < 12	(279.4 < 304.8)
J	6 < 6-1/2	(152.4 < 165.1)	T	12 < 13	(304.8 < 330.2)

*Located on top of anchor for easy inspection.

FEATURES



Length ID Head Stamp—provides for embedment inspection after installation

Fully Threaded Design

Cold-Formed—manufacturing process adds strength

Stainless steel split expansion ring

Anchor Body—available in zinc-plated steel, hot-dipped galvanized steel, 304 stainless steel and 316 stainless steel

TRUBOLT® WEDGE ANCHOR

APPROVALS/LISTINGS

Trubolt® Wedge Anchors

ICC Evaluation Service, Inc. ESR-2251

- Category 1 performance rating
- 2018 IBC compliant
- Meets ACI 318 ductility requirements
- Tested in accordance with ACI 355.2 and ICC-ES AC193
- For use in seismic zones A & B
- 1/4", 3/8" & 1/2" diameter anchors listed in ESR-2251

Underwriters Laboratories

Factory Mutual

Caltrans

Meets or exceeds U.S. Government G.S.A. Specification A-A-1923A Type 4 (formerly GSA: FF-S-325 Group II, Type 4, Class 1)



INSTALLATION STEPS



1. Select a carbide drill bit with a diameter equal to the anchor diameter. Drill hole to any depth exceeding the desired embedment. See chart for minimum recommended embedment.
2. Clean hole or continue drilling additional depth to accommodate drill fines.
3. Assemble washer and nut, leaving top of stud exposed through nut. Drive anchor through material to be fastened until washer is flush to surface of material.
4. Expand anchor by tightening nut 3-5 turns past the hand tight position, or to the specified torque requirement.

** ONLY FOR USE IN CONCRETE **



Call our toll free number 800-848-5611 or visit our web site for the most current product and technical information at www.itwredhead.com



SELECTION CHART

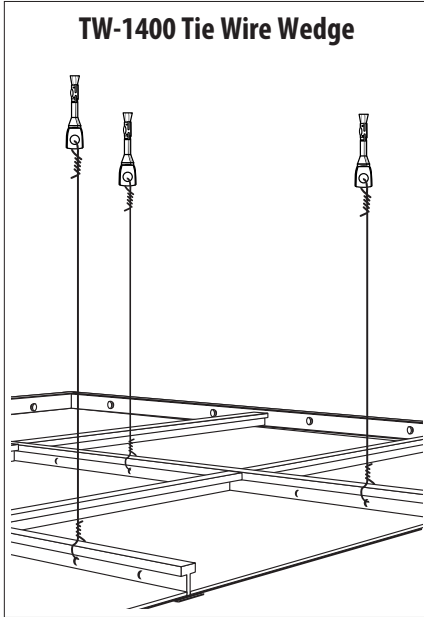
Trubolt Wedge

Carbon Steel w/Zinc Plating

Meets ASTM B633 SC1, Type III specifications for electroplating of 5um = .0002" thickness. This material is well suited for non-corrosive environments.



Typical Applications—
Structural Columns,
Machinery, Equipment, etc.
Environment—Interior
(non-corrosive)
Level of Corrosion—Low



PART NUMBER	THREAD LENGTH		ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH		MAX. THICKNESS OF MATERIALS TO BE FASTENED		QTY/WT PER BOX		QTY/WT PER MASTER CARTON	
	in.	(mm)		in.	(mm)	in.	(mm)	qty.	lbs.	qty.	lbs.
WS-1416	3/4	(19.1)	1/4" - 20	1-3/4	(44.5)	3/8	(9.5)	100	3.1	1000	32
WS-1422	1-1/4	(31.8)		2-1/4	(57.2)	7/8	(22.2)	100	3.6	1000	37
WS-1432	2-1/4	(57.2)		3-1/4	(82.6)	1-7/8	(47.6)	100	4.7	800	39
WS-3822	1-1/8	(28.6)	3/8" - 16	2-1/4	(57.2)	3/8	(9.5)	50	4.1	500	41
WS-3826	1-5/8	(41.3)		2-3/4	(69.9)	7/8	(22.2)	50	4.7	400	39
WS-3830	1-3/4	(44.5)		3	(76.2)	1-1/8	(28.6)	50	5.0	400	41
WS-3836	2-1/2	(63.5)		3-3/4	(95.3)	1-7/8	(47.6)	50	5.9	300	36
WS-3850	3-3/4	(95.2)		5	(127.0)	3-1/8	(79.4)	50	7.4	250	38
WS-3870	3-7/8	(98.4)	1/2" - 13	7	(177.8)	5-1/8	(130.2)	50	10.4	250	53
WS-1226	1-1/4	(31.8)		2-3/4	(69.9)	1/8	(3.2)	25	4.6	200	38
WS-1236	2-1/4	(57.2)		3-3/4	(95.3)	1	(25.4)	25	5.7	150	35
WS-1242	2-3/4	(69.9)		4-1/4	(108.0)	1-1/2	(38.1)	25	6.2	150	38
WS-1244	3	(76.2)		4-1/2	(114.3)	1-3/4	(44.5)	25	6.5	150	39
WS-1254	4	(101.6)		5-1/2	(139.7)	2-3/4	(69.9)	25	7.7	150	47
WS-1270	5-1/2	(139.7)		7	(177.8)	4-1/4	(108.0)	25	9.3	150	57
WS-5834	1-3/4	(44.5)	5/8" - 11	3-1/2	(88.9)	1/8	(3.2)	10	3.6	100	37
WS-5842	2-1/2	(63.5)		4-1/4	(108.0)	7/8	(22.2)	10	4.1	100	42
WS-5850	3-1/4	(82.6)		5	(127.0)	1-5/8	(41.3)	10	4.7	100	48
WS-5860	4-1/4	(107.9)		6	(152.4)	2-5/8	(66.7)	10	5.4	50	28
WS-5870	5-1/4	(133.4)		7	(177.8)	3-5/8	(92.1)	10	6.2	30	19
WS-5884	5-3/4	(146.0)	3/4" - 10	8-1/2	(215.9)	5-1/8	(130.2)	10	8.0	30	25
WS-58100	5-3/4	(146.0)		10	(254.0)	6-5/8	(168.3)	10	9.4	30	29
WS-3442	2-3/8	(60.3)		4-1/4	(108.0)	1/4	(3.18)	10	6.8	60	42
WS-3446	2-7/8	(73.0)		4-3/4	(120.7)	3/4	(19.1)	10	7.4	60	45
WS-3454	3-5/8	(92.1)		5-1/2	(139.7)	1-1/2	(38.1)	10	8.1	50	41
WS-3462	4-3/8	(111.1)		6-1/4	(158.8)	2-1/4	(57.2)	10	9.1	30	28
WS-3470	5-1/8	(130.2)		7	(177.8)	3	(76.2)	10	9.7	30	30
WS-3484	5-3/4	(146.0)	7/8" - 9	8-1/2	(215.9)	4-1/2	(114.3)	10	12.3	30	38
WS-34100	5-3/4	(146.0)		10	(254.0)	6	(152.4)	10	14.0	30	43
WS-34120	1-3/4	(44.5)		12	(304.8)	8	(203.2)	10	16.6	30	51
WS-7860	2-1/2	(63.5)	1" - 8	6	(152.4)	1-3/8	(34.9)	5	6.3	25	32
WS-7880	2-1/2	(63.5)		8	(203.2)	3-3/8	(85.7)	5	8.1	15	25
WS-78100	2-1/2	(63.5)		10	(254.0)	5-3/8	(136.5)	5	9.8	15	30
WS-10060	2-1/2	(63.5)	1" - 8	6	(152.4)	1/2	(12.7)	5	8.3	25	43
WS-10090	2-1/2	(63.5)		9	(228.6)	3-1/2	(88.9)	5	11.6	15	36
WS-100120	2-1/2	(63.5)		12	(304.8)	6-1/2	(165.1)	5	15.0	15	46
TIE WIRE											
TW-1400	N/A		1/4"	2-1/8	(54.0)	9/32-hole	(7.1)	100	3.6	1000	36

SELECTION CHART

Trubolt Wedge

Carbon Steel w/
Hot Dipped Galvanizing

Meets ASTM A153 Class specifications for hot-dipped galvanizing > 45um = .002". It is highly recommended for damp, humid environments near coastal regions. Hot-dipped galvanized Trubolts have a coating thickness of zinc that is almost 10 times as thick as electroplating. This creates greater corrosion resistance at a minimal cost.



Typical Applications—
Railings, Signage, Awnings,
etc.
Environment—Rural/
Suburban (exterior
environment—essentially
unpolluted areas)
Level of Corrosion—
Low to Medium

PART NUMBER	THREAD LENGTH		ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH		MAX. THICKNESS OF MATERIALS TO BE FASTENED		QTY/WT PER BOX		QTY/WT PER MASTER CARTON	
	in.	(mm)		in.	(mm)	in.	(mm)	qty.	lbs.	qty.	lbs.
WS-1226G	1-1/4	(31.8)	1/2" - 13	2-3/4	(69.9)	1/8	(3.2)	25	4.8	200	39
WS-1242G	2-3/4	(69.9)		4-1/4	(108.0)	1-1/2	(38.1)	25	6.7	150	41
WS-1254G	4	(101.6)		5-1/2	(139.7)	2-3/4	(69.9)	25	8.0	150	49
WS-1270G	5-1/2	(139.7)	5/8" - 11	7	(177.8)	4-1/4	(108.0)	25	9.7	150	59
WS-5834G	1-3/4	(44.5)		3-1/2	(88.9)	1/8	(3.2)	10	3.7	100	38
WS-5860G	4-1/4	(107.9)		6	(152.4)	2-5/8	(66.7)	10	5.6	50	29
WS-3446G	2-7/8	(73.0)	3/4" - 10	4-3/4	(120.7)	3/4	(19.1)	10	7.5	60	46
WS-3454G	3-5/8	(92.1)		5-1/2	(139.7)	1-1/2	(38.1)	10	8.4	50	42
WS-3484G	5-3/4	(146.0)		8-1/2	(215.9)	4-1/2	(114.3)	10	12.5	30	38

SELECTION CHARTS

Trubolt Wedge

304 Stainless Steel

Serves many applications well. It withstands rusting in architectural and food processing environments and resists organic chemicals, dye stuffs and many inorganic chemicals.



Typical Applications—
Cladding, Stadium Seating, etc.
Environment—Urban
(slight to moderate
degree of pollution)
Level of Corrosion—Medium

PART NUMBER	THREAD LENGTH		ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH		MAX. THICKNESS OF MATERIALS TO BE FASTENED		QTY/WT PER BOX		QTY/WT PER MASTER CARTON	
	in.	(mm)		in.	(mm)	in.	(mm)	qty.	lbs.	qty.	lbs.
WW-1416	3/4	(19.1)	1/4" - 20	1-3/4	(44.5)	3/8	(9.5)	100	3.2	1000	32
WW-1422	1-1/4	(31.8)		2-1/4	(57.2)	7/8	(22.2)	100	3.7	1000	37
WW-1432	2-1/4	(57.2)		3-1/4	(82.6)	1-7/8	(47.6)	100	4.8	800	39
WW-3822	1-1/8	(28.6)	3/8" - 16	2-1/4	(57.2)	3/8	(9.5)	50	4.1	500	41
WW-3826	1-5/8	(41.3)		2-3/4	(69.9)	7/8	(22.2)	50	4.8	400	39
WW-3830	1-3/4	(44.5)		3	(76.2)	1-1/8	(28.6)	50	5.1	400	42
WW-3836	2-1/2	(63.5)		3-3/4	(95.3)	1-7/8	(47.6)	50	6.0	300	37
WW-3850	3-3/4	(95.3)		5	(127.0)	3-1/8	(79.4)	50	7.5	250	39
WW-1226	1-1/4	(31.8)	1/2" - 13	2-3/4	(69.9)	1/8	(3.2)	25	4.7	200	38
WW-1236	2-1/4	(57.2)		3-3/4	(95.3)	1	(25.4)	25	5.8	150	36
WW-1242	2-3/4	(69.9)		4-1/4	(108.0)	1-1/2	(38.1)	25	6.3	150	39
WW-1254	3	(76.2)		5-1/2	(139.7)	2-3/4	(69.9)	25	7.7	150	47
WW-1270	3-1/2	(88.9)		7	(177.8)	4-1/4	(108.0)	25	9.4	150	57
WW-5834	1-3/4	(44.5)	5/8" - 11	3-1/2	(88.9)	1/8	(3.2)	10	3.6	100	37
WW-5842	2-1/2	(63.5)		4-1/4	(108.0)	7/8	(22.2)	10	4.2	100	43
WW-5850	3-1/4	(82.6)		5	(127.0)	1-5/8	(41.3)	10	4.8	100	49
WW-5860	4-1/4	(107.9)		6	(152.4)	2-5/8	(66.7)	10	5.5	50	28
WW-5870	3-1/2	(88.9)		7	(177.8)	3-5/8	(92.1)	10	6.2	30	20
WW-5884	3-1/2	(88.9)	3/4" - 10	8-1/2	(215.9)	5-1/8	(130.2)	10	8.0	30	25
WW-3446	2-7/8	(73.0)		4-3/4	(120.7)	3/4	(19.1)	10	6.7	60	41
WW-3454	3-5/8	(92.1)		5-1/2	(139.7)	1-1/2	(38.1)	10	7.5	50	38
WW-3470	3-1/2	(88.9)		7	(177.8)	3	(76.2)	10	9.2	30	28
WW-3484	3-1/2	(88.9)		8-1/2	(215.9)	4-1/2	(114.3)	10	12.3	30	38
WW-34100	1-3/4	(44.5)	1" - 8	10	(254.0)	6	(152.4)	10	13.5	30	42
WW-10060	2-1/2	(63.5)		6	(152.4)	1/2	(12.7)	5	8.3	25	43
WW-10090	2-1/2	(63.5)		9	(228.6)	3-1/2	(88.9)	5	11.4	15	35

* For continuous extreme low temperature applications, use stainless steel.

SELECTION CHARTS

Trubolt Wedge

316 Stainless Steel

Contains more nickel and chromium than Type 304, and 2%-3% molybdenum, which gives it better corrosion resistance. It is especially more effective in chloride environments that tend to cause pitting.



Typical Applications—
Pumps, Diffusers, Gates,
Weir Plates, etc.
Environment—Industrial
(moderate to heavy
atmospheric pollution)
Level of Corrosion—
Medium to High



Typical Applications—
Tunnels, Dams, Tiles,
Lighting Fixtures, etc.
Environment—
Marine (heavy atmospheric
pollution)
Level of Corrosion—High

PART NUMBER	THREAD LENGTH		ANCHOR DIA. & DRILL BIT SIZE (THREADS) PER INCH	OVERALL LENGTH		MAX. THICKNESS OF MATERIALS TO BE FASTENED		QTY/WT PER BOX		QTY/WT PER MASTER CARTON	
	in.	(mm)		in.	(mm)	in.	(mm)	qty.	lbs.	qty.	lbs.
SWW-1422	1-1/4	(31.8)	1/4" - 20	2-1/4	(57.2)	7/8	(22.2)	100/	3.7	1000/	37
SWW-1432	2-1/4	(57.2)		3-1/4	(82.6)	1-1/8	(28.6)	100/	4.8	1000/	39
SWW-3822	1-1/8	(28.6)		2-1/4	(57.2)	3/8	(9.5)	50/	4.1	500/	41
SWW-3826	1-5/8	(41.3)	3/8" - 16	2-3/4	(69.9)	7/8	(22.2)	50/	4.8	400/	39
SWW-3830	1-3/4	(44.5)		3	(76.2)	1-1/8	(28.6)	50/	5.2	400/	42
SWW-3836	2-1/2	(63.5)		3-3/4	(95.5)	1-7/8	(47.6)	50/	6.0	300/	37
SWW-3850	3-3/4	(95.3)		5	(127.0)	3-1/8	(79.4)	50/	7.5	250/	39
SWW-1226	1-1/4	(31.8)		2-3/4	(69.9)	1/8	(3.2)	25/	4.7	200/	39
SWW-1236	2-1/4	(57.2)	1/2" - 13	3-3/4	(95.3)	1	(25.4)	25/	5.8	150/	36
SWW-1242	2-3/4	(69.9)		4-1/4	(108.0)	1-1/2	(38.1)	25/	6.5	150/	40
SWW-1254	3	(76.2)		5-1/2	(139.7)	2-3/4	(69.9)	25/	7.8	150/	48
SWW-5842	2-1/2	(63.5)		4-1/4	(108.0)	7/8	(22.2)	10/	4.2	100/	43
SWW-5850	3-1/4	(82.6)		5	(127.0)	1-5/8	(41.3)	10/	4.8	100/	49
SWW-5870	3-1/2	(88.9)	5/8" - 11	7	(177.8)	3-5/8	(92.1)	10/	6.7	30/	21

* For continuous extreme low temperature applications, use stainless steel.



Call our toll free number 800-848-5611 or visit our web site for the most current product and technical information at www.itwredhead.com



PERFORMANCE TABLE

Trubolt
Wedge Anchors

**Ultimate Tension and Shear Values (lbs/kN)
in Solid Concrete***

ANCHOR DIA.		INSTALLATION TORQUE		EMBEDMENT DEPTH		ANCHOR TYPE	f'c + 2,000 PSI (13.8 MPa)				f'c + 4,000 PSI (27.6 MPa)				f'c + 6,000 PSI (41.4 MPa)			
in.	(mm)	ft. lbs.	(Nm)	in.	(mm)		TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
							lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
1/4	(6.4)	4	(5.4)	1-1/8	(28.6)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	1,180	(5.2)	1,400	(6.2)	1,780	(7.9)	1,400	(6.2)	1,900	(8.5)	1,400	(6.2)
				1-15/16	(49.2)		2,100	(9.3)	1,680	(7.5)	3,300	(14.7)	1,680	(7.5)	3,300	(14.7)	1,680	(7.5)
				2-1/8	(54.0)		2,260	(10.1)	1,680	(7.5)	3,300	(14.7)	1,680	(7.5)	3,300	(14.7)	1,680	(7.5)
3/8	(9.5)	25	(33.9)	1-1/2	(38.1)		1,620	(7.5)	2,320	(10.3)	2,240	(10.0)	2,620	(11.7)	2,840	(12.6)	3,160	(14.1)
				3	(76.2)		3,480	(15.5)	4,000	(17.8)	5,940	(26.4)	4,140	(18.4)	6,120	(27.2)	4,500	(20.0)
				4	(101.6)		4,800	(21.4)	4,000	(17.8)	5,940	(26.4)	4,140	(18.4)	6,120	(27.2)	4,500	(20.0)
1/2	(12.7)	55	(74.6)	2-1/4	(57.2)		3,455	(20.7)	4,760	(21.2)	4,920	(22.7)	4,760	(21.2)	6,025	(31.3)	7,040	(31.3)
				4-1/8	(104.8)		4,660	(20.7)	7,240	(32.2)	9,640	(42.9)	7,240	(32.2)	10,820	(48.1)	8,160	(36.3)
				6	(152.4)		5,340	(23.8)	7,240	(32.2)	9,640	(42.9)	7,240	(32.2)	10,820	(48.1)	8,160	(36.3)
5/8	(15.9)	90	(122.0)	2-3/4	(69.9)		5,185	(29.3)	7,120	(31.7)	7,180	(31.9)	7,120	(31.7)	9,225	(43.2)	9,616	(42.8)
				5-1/8	(130.2)		6,580	(29.3)	9,600	(42.7)	14,920	(66.4)	11,900	(52.9)	16,380	(72.9)	12,520	(55.7)
				7-1/2	(190.5)		7,060	(31.4)	9,600	(42.7)	15,020	(66.8)	11,900	(52.9)	16,380	(72.9)	12,520	(55.7)
3/4	(19.1)	110	(149.2)	3-1/4	(82.6)	6,765	(31.7)	10,120	(45.0)	10,840	(48.2)	13,720	(61.0)	13,300	(59.2)	15,980	(71.1)	
				6-5/8	(168.3)	10,980	(48.8)	20,320	(90.4)	17,700	(78.7)	23,740	(105.6)	20,260	(90.1)	23,740	(105.6)	
				10	(254.0)	10,980	(48.8)	20,320	(90.4)	17,880	(79.5)	23,740	(105.6)	23,580	(104.9)	23,740	(105.6)	
7/8	(22.2)	250	(339.0)	3-3/4	(95.3)	9,290	(42.3)	13,160	(58.5)	14,740	(65.6)	16,580	(73.8)	17,420	(77.5)	19,160	(85.2)	
				6-1/4	(158.8)	14,660	(65.2)	20,880	(92.9)	20,940	(93.1)	28,800	(128.1)	24,360	(108.4)	28,800	(128.1)	
				8	(203.2)	14,660	(65.2)	20,880	(92.9)	20,940	(93.1)	28,800	(128.1)	24,360	(108.4)	28,800	(128.1)	
1	(25.4)	300	(406.7)	4-1/2	(114.3)	11,770	(62.0)	16,080	(71.5)	19,245	(89.8)	22,820	(101.5)	21,180	(94.2)	24,480	(108.9)	
				7-3/8	(187.3)	14,600	(64.9)	28,680	(127.6)	23,980	(106.7)	37,940	(168.8)	33,260	(148.0)	38,080	(169.4)	
				9-1/2	(241.3)	18,700	(83.2)	28,680	(127.6)	26,540	(118.1)	37,940	(168.8)	33,260	(148.0)	38,080	(169.4)	

* To calculate the Allowable Load of the anchor, divide the Ultimate Load by 4.

* For Tie-Wire Wedge Anchor, TW-1400, use tension data from 1/4" diameter with 1-1/8" embedment.

* For continuous extreme low temperature applications, use stainless steel.

PERFORMANCE TABLE

Trubolt
Wedge Anchors

**Ultimate Tension and Shear Values (lbs/kN)
in Lightweight Concrete***

ANCHOR DIA.		INSTALLATION TORQUE		EMBEDMENT DEPTH		ANCHOR TYPE	LIGHTWEIGHT CONCRETE f'c + 3,000 PSI (20.7 MPa)				LOWER FLUTE OF STEEL DECK WITH LIGHTWEIGHT CONCRETE FILL f'c + 3,000 PSI (20.7 MPa)			
in.	(mm)	ft. lbs.	(Nm)	in.	(mm)		TENSION		SHEAR		TENSION		SHEAR	
							lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	25	(33.9)	1-1/2	(38.1)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	1,175	(5.2)	1,480	(6.6)	1,900	(8.5)	3,160	(14.1)
				3	(76.2)		2,825	(12.6)	2,440	(10.9)	2,840	(12.6)	4,000	(17.8)
1/2	(12.7)	55	(74.6)	2-1/4	(57.2)		2,925	(13.0)	2,855	(12.7)	3,400	(15.1)	5,380	(23.9)
				3	(76.2)		3,470	(15.4)	3,450	(15.3)	4,480	(19.9)	6,620	(29.4)
				4	(101.6)		4,290	(19.1)	3,450	(15.3)	4,800	(21.4)	6,440	(28.6)
5/8	(15.9)	90	(122.0)	3	(76.2)		4,375	(19.5)	4,360	(19.4)	4,720	(21.0)	5,500	(24.5)
				5	(127.0)		6,350	(28.2)	6,335	(28.2)	6,580	(29.3)	9,140	(40.7)
3/4	(19.1)	110	(149.2)	3-1/4	(82.6)		5,390	(24.0)	7,150	(31.8)	5,840	(26.0)	8,880	(39.5)
				5-1/4	(133.4)		7,295	(32.5)	10,750	(47.8)	7,040	(31.3)	N/A	N/A

* To calculate the Allowable Load of the anchor, divide the Ultimate Load by 4.

PERFORMANCE TABLE

Trubolt Wedge Anchors

Recommended Edge and Spacing Distance Requirements for Tension Loads*

ANCHOR DIA.		EMBEDMENT DEPTH		ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		MIN. ALLOWABLE EDGE DISTANCE AT WHICH THE LOAD FACTOR APPLIED = .65		SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD		MIN. ALLOWABLE SPACING AT WHICH THE LOAD FACTOR APPLIED = .70	
in.	(mm)	in.	(mm)		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
1/4	(6.4)	1-1/8	(28.6)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	2	(50.8)	1	(25.4)	3-15/16	(100.0)	2	(50.8)
		1-15/16	(49.2)		1-15/16	(49.2)	1	(25.4)	3-7/8	(98.4)	1-15/16	(49.2)
		2-1/8	(54.0)		1-5/8	(41.3)	13/16	(20.6)	3-3/16	(81.0)	1-5/8	(41.3)
3/8	(9.5)	1-1/2	(38.1)		2-5/8	(66.7)	1-5/16	(33.3)	5-1/4	(133.4)	2-5/8	(66.7)
		3	(76.2)		3	(76.2)	1-1/2	(38.1)	6	(152.4)	3	(76.2)
		4	(101.6)		3	(76.2)	1-1/2	(38.1)	6	(152.4)	3	(76.2)
1/2	(12.7)	2-1/4	(57.2)		3-15/16	(100.0)	2	(50.8)	7-7/8	(200.0)	3-15/16	(100.0)
		4-1/8	(104.8)		3-1/8	(79.4)	1-9/16	(39.7)	6-3/16	(157.2)	3-1/8	(79.4)
		6	(152.4)		4-1/2	(114.3)	2-1/4	(57.2)	9	(228.6)	4-1/2	(114.3)
5/8	(15.9)	2-3/4	(69.9)		4-13/16	(122.2)	2-7/16	(61.9)	9-5/8	(244.5)	4-13/16	(122.2)
		5-1/8	(130.2)		3-7/8	(98.4)	1-15/16	(49.2)	7-1/16	(195.3)	3-7/8	(98.4)
		7-1/2	(190.5)		5-5/8	(142.9)	2-13/16	(71.4)	11-1/4	(285.8)	5-5/8	(142.9)
3/4	(19.1)	3-1/4	(82.6)	5-11/16	(144.5)	2-7/8	(73.0)	11-3/8	(288.9)	5-11/16	(144.5)	
		6-5/8	(168.3)	5	(127.0)	2-1/2	(63.5)	9-15/16	(252.4)	5	(127.0)	
		10	(254.0)	7-1/2	(190.5)	3-3/4	(95.3)	15	(381.0)	7-1/2	(190.5)	
7/8	(22.2)	3-3/4	(95.3)	6-9/16	(166.7)	3-5/16	(84.1)	13-1/8	(333.4)	6-9/16	(166.7)	
		6-1/4	(158.8)	6-1/4	(158.8)	3-1/8	(79.4)	12-1/2	(317.5)	6-1/4	(158.8)	
		8	(203.2)	6	(152.4)	3	(76.2)	12	(304.8)	6	(152.4)	
1	(25.4)	4-1/2	(114.3)	7-7/8	(200.0)	3-15/16	(100.0)	15-3/4	(400.1)	7-7/8	(200.0)	
		7-3/8	(187.3)	7-3/8	(187.3)	3-11/16	(93.7)	14-3/4	(374.7)	7-3/8	(187.3)	
		9-1/2	(241.3)	7-1/8	(181.0)	3-9/16	(90.5)	14-1/4	(362.0)	7-1/8	(181.0)	

* Spacing and edge distances shall be divided by 0.75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

PERFORMANCE TABLE

Trubolt Wedge Anchors

Recommended Edge and Spacing Distance Requirements for Shear Loads*

ANCHOR DIA.		EMBEDMENT DEPTH		ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		MIN. EDGE DISTANCE AT WHICH THE LOAD FACTOR APPLIED = .60		MIN. EDGE DISTANCE AT WHICH THE LOAD FACTOR APPLIED = .20		SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD		MIN. ALLOWABLE SPACING BETWEEN ANCHORS in. (mm) LOAD FACTOR APPLIED = .40	
in.	(mm)	in.	(mm)		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
1/4	(6.4)	1-1/8	(28.6)	WS-Carbon or WS-G Hot-Dipped Galvanized or WW-304 S.S. or SWW-316 S.S.	2	(50.8)	1-5/16	(33.3)	N/A	N/A	3-15/16	(100.0)	2	(50.8)
		1-15/16	(49.2)		1-15/16	(49.2)	1	(25.4)	N/A	N/A	3-7/8	(98.4)	1-15/16	(49.2)
3/8	(9.5)	1-1/2	(38.1)		2-5/8	(66.7)	1-3/4	(44.5)	N/A	N/A	5-1/4	(133.4)	2-5/8	(66.7)
		3	(76.2)		3-3/4	(95.3)	3	(76.2)	1-1/2	(38.1)	6	(152.4)	3	(76.2)
1/2	(12.7)	2-1/4	(57.2)		3-15/16	(100.0)	2-9/16	(65.1)	N/A	N/A	7-7/8	(200.0)	3-15/16	(100.0)
		4-1/8	(104.8)		5-3/16	(131.8)	3-1/8	(79.4)	1-9/16	(39.7)	6-3/16	(157.2)	3-1/8	(79.4)
5/8	(15.9)	2-3/4	(69.9)		4-13/16	(122.2)	3-1/8	(79.4)	N/A	N/A	9-5/8	(244.5)	4-13/16	(122.2)
		5-1/8	(130.2)		6-7/16	(163.5)	3-7/8	(98.4)	1-15/16	(49.2)	7-11/16	(195.3)	3-7/8	(98.4)
3/4	(19.1)	3-1/4	(82.6)		5-11/16	(144.5)	3-3/4	(95.3)	N/A	N/A	11-3/8	(288.9)	5-11/16	(144.5)
		6-5/8	(168.3)		6-5/16	(160.3)	5	(127.0)	2-1/2	(63.5)	9-15/16	(252.4)	5	(127.0)
7/8	(22.2)	3-3/4	(95.3)		6-9/16	(166.7)	4-5/16	(109.5)	N/A	N/A	13-1/8	(333.4)	6-9/16	(166.7)
		6-1/4	(158.8)		8-1/2	(215.9)	6-1/4	(158.8)	3-1/8	(79.4)	12-1/2	(317.5)	6-1/4	(158.8)
1	(25.4)	4-1/4	(108.0)	7-7/8	(200.0)	5-1/8	(130.2)	N/A	N/A	15-3/4	(400.1)	7-7/8	(200.0)	
		7-3/8	(187.3)	10-1/16	(255.6)	7-3/8	(187.3)	3-11/16	(93.7)	14-3/4	(374.7)	7-3/8	(187.3)	

* Spacing and edge distances shall be divided by 0.75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

Combined Tension and Shear Loading—for Trubolt Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:

$$(P_s/P_t)^{5/3} + (V_s/V_t)^{5/3} \leq 1$$

P_s = Applied tension load V_s = Applied shear load P_t = Allowable tension load V_t = Allowable shear load



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