



# Dynabolt® Sleeve Anchors

## Versatile Heavy-Duty Sleeve Anchors

Description/suggested specifications  
Sleeve Type Anchors

Specified for anchorage into concrete, masonry, grout filled block and hollow block

Sleeve type anchors feature a split expansion sleeve over a threaded stud bolt body and integral expander, nut and washer.

Anchors are made of Plated Carbon Steel, or Type 18-8 Stainless Steel.

Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994.

Anchors are tested to ASTM E488 criteria.

### Approvals/Listings

Meets or exceeds U.S. Government G.S.A. Specification FF-S-325 Group II, Type 3, Class 3

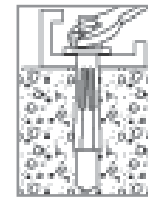
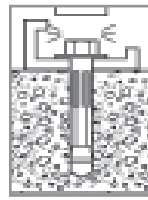
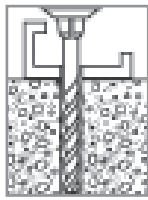
Factory Mutual

SBCCI Compliance Report – #9570

California State Fire Marshal



### Installation Steps



1. Use a bit with a diameter equal to the anchor. See selection chart to determine proper size bit for anchor used. Drill hole to any depth exceeding minimum embedment. Clean hole.

2. Insert assembled anchor into hole, so that washer or head is flush with materials to be fastened.

3. Expand anchor by tightening nut or head 2 to 3 turns.

## Technical Data

### Tension and Shear

Dynabolt Sleeve Anchors Performance Table  
Ultimate Tension and Shear Values In Concrete\* And (Lbs/kN)

Anchor Dia. In. (mm)	Installation Torque Ft. Lbs. (Nm)	Bolt Dia. In. (mm)	Embedment Depth In. (mm)	Anchor Type	f'c = 2000 PSI (13.8 MPa)		f'c = 3000 PSI (20.7 MPa)		f'c = 4000 PSI (27.6 MPa)	
					Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	No. 10	1-1/8 (28.6)	Carbon or Stainless	1,200 (5.3)	1,620 (7.2)	1,600 (7.1)	1,620 (7.2)	2,100 (8.5)	1,620 (7.2)
5/16 (7.9)	8 (10.8)	1/4 (6.4)	1-1/4 (31.8)		1,400 (6.2)	2,040 (9.1)	1,920 (8.5)	2,220 (9.9)	2,600 (11.6)	2,400 (10.7)
3/8 (9.5)	14 (19.0)	5/16 (7.9)	1-1/2 (38.1)		1,620 (7.2)	2,560 (11.4)	2,240 (10.0)	2,800 (12.5)	3,100 (13.8)	3,040 (13.5)
1/2 (12.7)	20 (27.1)	3/8 (9.5)	1-7/8 (47.6)		2,220 (9.9)	4,000 (17.8)	3,140 (14.0)	4,500 (20.0)	4,400 (19.6)	5,000 (22.2)
5/8 (15.9)	48 (65.1)	1/2 (12.7)	2 (50.8)		3,080 (13.7)	6,440 (28.6)	4,400 (19.6)	7,240 (32.2)	6,120 (27.2)	8,080 (35.9)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/4 (57.2)		4,200 (18.7)	10,200 (45.4)	5,940 (26.4)	11,600 (51.6)	8,900 (39.6)	13,100 (58.3)

Dynabolt Sleeve Anchors Performance Table  
Ultimate Tension and Shear Values In Lightweight Concrete (Lbs/kN)\*

Anchor Dia. In. (mm)	Installation Torque Ft. Lbs. (Nm)	Bolt Dia. In. (mm)	Minimum Embedment Depth In. (mm)	Anchor Type	f'c = 4000 PSI (27.6 MPa)		f'c = 6000 PSI (41.4 MPa)	
					Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	No. 10	1-1/8 (28.6)	Carbon or Stainless	1,080 (4.8)	1,620 (7.2)	1,220 (5.2)	1,940 (8.6)
5/16 (7.9)	8 (10.8)	1/4 (6.4)	1-1/4 (31.8)		1,260 (5.6)	1,680 (7.5)	1,440 (6.4)	2,220 (9.9)
3/8 (9.5)	14 (19.0)	5/16 (7.9)	1-1/2 (38.1)		1,620 (7.2)	2,300 (10.2)	2,240 (10.0)	2,800 (12.5)
1/2 (12.7)	20 (27.1)	3/8 (9.5)	1-7/8 (47.6)		2,600 (11.6)	3,920 (17.4)	3,160 (14.1)	4,840 (21.5)
5/8 (15.9)	48 (65.1)	1/2 (12.7)	2 (50.8)		3,240 (14.4)	5,600 (24.9)	4,300 (19.1)	7,840 (34.9)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/4 (57.2)		3,640 (16.2)	8,640 (38.4)	5,800 (25.8)	12,480 (55.5)



# Dynabolt® Sleeve Anchors

Versatile Heavy-Duty Sleeve Anchors



## Sizes

### Dynabolt Carbon Steel



Head Style	Anchor Dia. & Drill Bit Size (Threads) Per Inch	Effective Anchor Length* In. (mm)	Bolt Dia./Threads Per Inch	Minimum Embedment In. (mm)	Max. Thickness of Material to be Fastened In. (mm)	Qty/Wt Per Box Lbs.	Qty/Wt Per Master Carton Lbs.	Zinc Plating	
								304 Stainless Steel	316 Stainless Steel
Acorn Nut	1/4" - 20	5/8 (15.9)	3/16" /24	1/2 (12.7)	1/8 (3.2)	100/ 1.9	1000/ 20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 2.6	1000/ 27	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 3.7	1000/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Hex Nut	1/4" - 20	5/8 (15.9)	3/16" /24	1/2 (12.7)	1/8 (3.2)	100/ 1.6	1000/ 17	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 2.3	1000/ 24	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 3.4	1000/ 35	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	5/16" - 18	1-1/2 (38.1)	1/4" /20	1-1/4 (31.8)	1/4 (6.4)	100/ 4.0	1000/ 41	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		2-1/2 (63.5)	1/4" /20	1-1/4 (31.8)	1-1/4 (31.8)	100/ 5.9	800/ 47	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	3/8" - 16	1-7/8 (47.6)	5/16" /18	1-1/2 (38.1)	3/8 (9.5)	50/ 3.5	500/ 36	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		3 (76.2)	5/16" /18	1-1/2 (38.1)	1-1/2 (38.1)	50/ 4.9	400/ 40	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	1/2" - 13	2-1/4 (57.2)	3/8" /16	1-7/8 (47.6)	3/8 (9.5)	25/ 3.3	250/ 34	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		3 (76.2)	3/8" /16	1-7/8 (47.6)	1-1/8 (28.6)	25/ 4.0	200/ 33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		4 (101.6)	3/8" /16	1-7/8 (47.6)	2-1/8 (54.0)	25/ 5.3	200/ 44	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	5/8" - 11	2-1/4 (57.2)	1/2" /13	2 (50.8)	1/4 (6.4)	25/ 6.3	150/ 38	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		3 (76.2)	1/2" /13	2 (50.8)	1 (25.4)	25/ 7.0	150/ 46	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4-1/4 (108.0)		1/2" /13	2 (50.8)	2-1/4 (57.2)	10/ 3.9	100/ 41	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3/4" - 10	2-1/2 (63.5)	5/8" /11	2-1/4 (57.2)	1/4 (6.4)	10/ 4.7	50/ 25	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	4 (101.6)	5/8" /11	2-1/4 (57.2)	1-3/4 (44.5)	5/ 3.2	50/ 33	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	6-1/4 (158.8)	5/8" /11	2-1/4 (57.2)	4 (101.6)	5/ 4.3	50/ 44	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Phillips Flat Head	1/4" - 20 (head dia. .477)	1-1/2 (38.1)	3/16" /24	1-1/8 (28.6)	3/8 (9.5)	100/ 1.9	1000/ 21	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.7	1000/ 28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		3-1/8 (79.4)	3/16" /24	1-1/8 (28.6)	2 (50.8)	100/ 3.8	1000/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		4 (101.6)	3/16" /24	1-1/8 (28.6)	2-7/8 (73.0)	100/ 4.7	1000/ 48	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	3/8" - 16 (head dia. .722)	2-7/8 (73.0)	5/16" /18	1-1/2 (38.1)	1-3/8 (34.9)	50/ 3.8	500/ 40	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		4 (101.6)	5/16" /18	1-1/2 (38.1)	2-1/2 (63.5)	50/ 5.3	400/ 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Threshold Flat Head	1/4" - 20 (head dia. .385)	2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.5	1000/ 25	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.7	1000/ 28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		2-7/8 (73.0)	3/16" /24	1-1/8 (28.6)	1-3/4 (44.5)	100/ 3.7	1000/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Round Head	1/4" - 20	1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 1.9	1000/ 20	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		2 (50.8)	3/16" /24	1-1/8 (28.6)	7/8 (22.2)	100/ 2.7	1000/ 28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3/8" - 16	2-7/8 (73.0)	5/16" /18	1-1/2 (38.1)	1-1/8 (28.6)	100/ 3.7	1000/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	2-5/8 (66.7)	5/16" /18	1-1/2 (38.1)	1-1/8 (28.6)	50/ 3.9	500/ 41	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Tie Wire	5/16" - 18	1-1/2 (38.1)	1/4" /20	1-1/2 (38.1)	9/32 (7.1)	100/ 4.9	1000/ 50	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hex Coupling (Rod Hanger)	3/8" - 16	1-7/8 (47.6)	3/8" /16 Hanger	1-1/2 (38.1)	-- --	50/ 6.0	250/ 30	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		1/2" - 13	1/2" /13 Hanger	1-7/8 (47.6)	-- --	25/ 6.5	125/ 34	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Dynabolt Sleeve Anchors Performance Table**  
Ultimate Tension and Shear Values In Masonry Units (Lbs/kN)\*

Anchor Dia. In. (mm)	Installation Torque Ft. Lbs. (Nm)	Bolt Dia. In. (mm)	Minimum Embedment Depth In. (mm)	Anchor Type (Steel)	Lightweight				Medium Weight			
					Hollow Core		Grout Filled		Hollow Core		Grout Filled	
					Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon	1,120 (5.0)	1,360 (6.0)	1,120 (5.0)	1,360 (6.0)	1,120 (5.0)	1,620 (7.2)	1,120 (5.0)	1,360 (6.0)
				Stainless	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)
3/8 (9.5)	15 (20.3)	5/16 (7.9)	1-1/2 (38.1)	Carbon	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)
				Stainless	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)
1/2 (12.7)	25 (33.9)	3/8 (9.5)	1-7/8 (47.6)	Carbon	--	--	2,220 (9.9)	4,000 (17.8)	--	--	2,220 (9.9)	4,000 (17.8)
				Stainless	--	--	2,100 (9.3)	4,000 (17.8)	--	--	2,100 (9.3)	4,000 (17.8)
5/8 (15.9)	55 (74.6)	1/2 (12.7)	2 (50.8)	Carbon	--	--	3,080 (13.7)	6,440 (28.6)	--	--	3,080 (13.7)	6,440 (28.6)
				Stainless	--	--	3,080 (13.7)	6,440 (28.6)	--	--	2,820 (12.5)	6,440 (28.6)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/2 (63.5)	Carbon	--	--	4,200 (18.7)	10,200 (45.4)	--	--	4,200 (18.7)	10,200 (45.4)
				Stainless	--	--	4,200 (18.7)	10,200 (45.4)	--	--	4,200 (18.7)	10,200 (45.4)

\* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values. The tabulated values are for anchors installed in a minimum of 12 diameters on center and a minimum edge distance of six diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to six-diameter spacing and three-diameter edge distance, provided the values are reduced 50 percent. Linear interpolation may be used for intermediate spacings and edge distances.

### Combined Shear and Tension Loading—for Dynabolt Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:  $(Ps/Pt) + (Vs/Vt) \leq 1$

Ps = Applied tension load      Vs = Applied shear load      Pt = Allowable tension load      Vt = Allowable shear load



## Trubolt<sup>®</sup> Wedge Anchors

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

### Description/suggested specifications Wedge Type Anchors

Specified for anchorage into concrete.

Wedge anchors feature a type 18-8 stainless steel split expansion ring and a threaded stud bolt body and integral cone expander, 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.

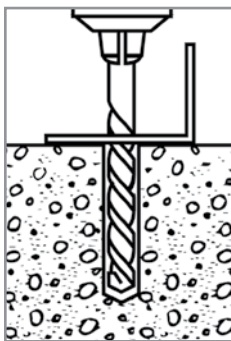
Use carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994 to install anchors.

Anchors are tested to ASTM E488 criteria and listed by ICBO and SBCCI. Anchors are listed by the following agencies as required by the local building code: UL, FM, City of Los Angeles, California State Fire Marshal and Cal Trans.

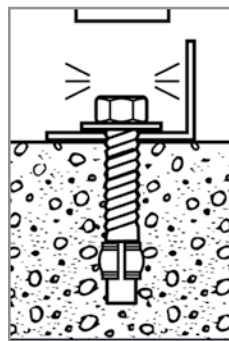
### Approvals/listings

- Meets or exceeds U.S. Government G.S.A. Specification FF-S 325 Group II, Type 4, Class 1
- Underwriters Laboratories
- Factory Mutual
- ICBO Evaluation Service, Inc. – #ER-1372 (including seismic loading conditions)
- City of Los Angeles – #RR2748
- SBCCI Compliance Report – #9570
- California State Fire Marshal
- Cal Trans

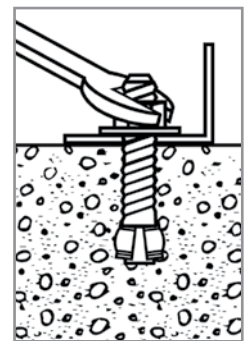
### Installation Steps



- Using a bit whose diameter equals the anchor diameter, drill hole to any depth exceeding the minimum embedment. Clean hole.



- Assemble anchor with nut and washer so that the top of the nut is flush with the top of the anchor. Drive anchor through material to be fastened so that nut and washer are flush with surface of material.



- Expand anchor by tightening nut 3 to 5 turns, or to the specific torque requirement (see selection chart).



# TruBolt® Wedge Anchors

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

## Sizes

TruBolt Removable Anchors Selection Chart

Thread Length In. (mm)	Anchor Dia. & Drill Bit Size (threads) per inch	Overall Length In. (mm)	Max. Thickness of material to be fastened In. (mm)	Qty/Wt per box lbs.	Qty/wt per master carton lbs.	Zinc Plating	Hot-Dipped Galvanized	304 Stainless Steel	316 Stainless Steel
3/4 (19.1)	1/4" - 20	1-3/4 (44.5)	3/8 (9.5)	100/ 3.1	1000/ 32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-1/4 (31.8)		2-1/4 (57.2)	7/8 (22.2)	100/ 3.6	1000/ 37	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/4 (57.2)		3-1/4 (82.6)	1-7/8 (47.6)	100/ 4.7	800/ 39	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-1/8 (28.6)	3/8" - 16	2-1/4 (57.2)	3/8 (9.5)	50/ 4.1	500/ 41	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-5/8 (41.3)		2-3/4 (69.9)	7/8 (22.2)	50/ 4.7	400/ 39	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-7/8 (47.6)		3 (76.2)	1-1/8 (28.6)	50/ 5.0	400/ 41	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-5/8 (66.7)		3-3/4 (95.3)	1-7/8 (47.6)	50/ 5.9	300/ 36	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-3/4 (69.9)		5 (127.0)	3-1/8 (79.4)	50/ 7.4	250/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/4 (57.2)		7 (177.8)	5-1/8 (130.2)	50/10.4	250/ 53	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-1/4 (31.8)	1/2" - 13	2-3/4 (69.9)	1/8 (3.2)	25/ 4.6	200/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/4 (57.2)		3-3/4 (95.3)	1 (25.4)	25/ 5.7	150/ 35	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-3/4 (69.9)		4-1/4 (108.0)	1-1/2 (38.1)	25/ 6.2	150/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 (76.2)		4-1/2 (114.3)	1-3/4 (44.5)	25/ 6.5	150/ 39	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 (76.2)		5-1/2 (139.7)	2-3/4 (69.9)	25/ 7.7	150/ 47	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4-1/2 (114.3)		7 (177.8)	4-1/4 (108.0)	25/ 9.3	150/ 57	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)	5/8" - 11	3-1/2 (88.9)	1/8 (3.2)	10/ 3.6	100/ 37	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)		4-1/4 (108.0)	7/8 (22.2)	10/ 4.1	100/ 42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-1/4 (82.6)		5 (127.0)	1-5/8 (41.3)	10/ 4.7	100/ 48	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-1/2 (88.9)		6 (152.4)	2-5/8 (66.7)	10/ 5.4	50/ 28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4-1/2 (114.3)		7 (177.8)	3-5/8 (92.1)	10/ 6.2	30/ 19	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-1/2 (88.9)		8-1/2 (215.9)	5-1/8 (130.2)	10/ 8.0	30/ 25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)		10 (254.0)	6-5/8 (168.3)	10/ 9.4	30/ 29	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)		3-1/2 (88.9)	10 (254.0)	10/ 9.4	30/ 29	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)		12 (304.8)	8 (203.2)	10/16.6	30/ 51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)	3/4" - 10	4-1/4 (108.0)	1/4 (31.8)	10/ 6.8	60/ 42	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/4 (57.2)		4-3/4 (120.7)	3/4 (19.1)	10/ 7.4	60/ 45	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 (76.2)		5-1/2 (139.7)	1-1/2 (38.1)	10/ 8.1	50/ 41	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-3/4 (95.3)		6-1/4 (158.8)	2-1/4 (57.2)	10/ 9.1	30/ 28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4-1/2 (114.3)		7 (177.8)	3 (76.2)	10/ 9.7	30/ 30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-1/2 (88.9)		8-1/2 (215.9)	4-1/2 (114.3)	10/12.3	30/ 38	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)		10 (254.0)	6 (152.4)	10/14.0	30/ 43	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1-3/4 (44.5)		12 (304.8)	8 (203.2)	10/16.6	30/ 51	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)	7/8" - 9	6 (152.4)	1-3/8 (34.9)	5/ 6.3	25/ 32	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)		8 (203.2)	3-3/8 (85.7)	5/ 8.1	15/ 25	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)		10 (254.0)	5-3/8 (136.5)	5/ 9.8	15/ 30	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)	1" - 8	6 (152.4)	1/2 (12.7)	5/ 8.3	25/ 43	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)		9 (228.6)	3-1/2 (88.9)	5/11.6	15/ 36	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2-1/2 (63.5)		12 (304.8)	6-1/2 (165.1)	5/15.0	15/ 46	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3-1/2 (88.9)	1-1/4" - 7	9 (228.6)	5-1/4 (133.4)	5/18.0	15/ 55	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>Tie Wire</b>									
N/A	1/4" - 20	2-3/16 (55.6)	9/32 (7.1)	100/ 3.6	1000/ 36	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

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



# Trubolt® Wedge Anchors

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

## Technical Data

**Trubolt Wedge Anchors Performance Table**  
Ultimate Tension and Shear Values (Lbs/kN) In Concrete\*

Anchor Dia. In. (mm)	Installation Torque Ft. Lbs. (Nm)	Embedment Depth In. (mm)	Anchor Type	f'c = 2000 PSI (13.8 MPa)		f'c = 4000 PSI (27.6 MPa)		f'c = 6000 PSI (41.4 MPa)	
				Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)
1/4 (6.4)	8 (10.8)	1-1/8 (28.6)	Carbon Steel With Zinc Plating or	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)	
		2-1/8 (54.0)		2,260 (10.1)	3,300 (14.7)	3,300 (14.7)	3,300 (14.7)		
3/8 (9.5)	25 (33.9)	1-1/2 (38.1)	Carbon Steel With Zinc Plating or	1,680 (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)	
1/2 (12.7)	55 (74.6)	2-1/4 (57.2)	Carbon Steel With Zinc Plating or	4,660 (20.7)	4,760 (21.2)	5,100 (22.7)	4,760 (21.2)	7,040 (31.3)	7,040 (31.3)
		4 (101.6)		4,660 (20.7)	7,240 (32.2)	9,640 (42.9)	7,240 (32.2)	10,820 (48.1)	
5/8 (15.9)	90 (122.0)	2-3/4 (69.9)	Carbon Steel With Zinc Plating or	6,580 (29.3)	7,121 (31.7)	7,180 (31.9)	7,120 (31.7)	9,720 (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)	
3/4 (19.1)	175 (237.3)	3-1/4 (82.6)	Hot-Dipped Galvanizing or	7,120 (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)	
7/8 (22.2)	250 (339.0)	3-3/4 (95.3)	Type 304 Stainless Steel or	9,520 (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)	
1 (25.4)	300 (406.7)	4-1/2 (114.3)	Type 316 Stainless Steel or	13,940 (62.0)	16,080 (71.5)	20,180 (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)	
1-1/4 (31.8)	500 (677.9)	5-1/2 (139.7)	Type 316 Stainless Steel	18,140 (80.7)	23,280 (103.6)	26,380 (117.3)	29,460 (131.0)	33,640 (149.6)	33,780 (150.3)
		8 (203.2)		27,340 (121.6)	35,080 (156.0)	43,300 (192.6)	44,260 (196.9)	45,540 (202.6)	

\* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.

**Trubolt Wedge Anchors Performance Table**  
Ultimate Tension and Shear Values (Lbs/kN) In Lightweight Concrete\*

Anchor DIA. In. (mm)	Installation Torque Ft. Lbs. (Nm)	Embedment Depth In. (mm)	Anchor Type	Lightweight Concrete f'c = 3000 PSI (20.7 MPa)		Lower Flute Of Steel Deck with Lightweight Concrete Fill f'c = 3000 PSI (20.7 MPa)	
				Tension Lbs. (kN)	Shear Lbs. (kN)	Tension Lbs. (kN)	Shear Lbs. (kN)
3/8 (9.5)	25 (33.9)	1-1/2 (38.1)	Carbon Steel With Zinc Plating or	2,120 (9.4)	3,720 (16.5)	1,900 (8.5)	3,160 (14.1)
		3 (76.2)		2,940 (13.1)	4,240 (18.9)	2,840 (12.6)	4,000 (17.8)
1/2 (12.7)	55 (74.6)	2-1/4 (57.2)	Carbon Steel With Zinc Plating or	3,600 (16.0)	7,040 (31.3)	3,400 (15.1)	5,380 (23.9)
		3 (76.2)		4,720 (21.0)	6,620 (29.4)	4,480 (19.9)	6,620 (29.4)
5/8 (15.9)	90 (122.0)	4 (101.6)	Hot-Dipped Galvanizing or	-- --	6,920 (30.8)	4,800 (21.4)	6,440 (28.6)
		3 (76.2)		6,000 (26.7)	9,240 (41.1)	4,720 (21.0)	5,500 (24.5)
3/4 (19.1)	175 (237.3)	5 (127.0)	Type 304 Stainless Steel or Type 316 Stainless Steel	5,960 (26.5)	9,280 (41.3)	6,580 (29.3)	9,140 (40.7)
		3-1/4 (82.6)		7,160 (31.9)	12,600 (56.0)	5,840 (26.0)	8,880 (39.5)
		5-1/4 (133.4)		8,900 (39.6)	15,920 (70.8)	7,040 (31.3)	-- --

\* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values.



# Technical Data

**Trubolt Wedge Anchors Performance Table**  
Recommended Spacing And Edge Distance Requirements For Shear Loads\*

Anchor Dia. In. (mm)	Embedment Depth In. (mm)	Anchor Type	Edge Distance Required To Obtain Max. Working Load In. (mm)	Min. Edge Distance At Which The Load Factor Applied = .60 In. (mm)	Min. Edge Distance At Which The Load Factor Applied = .20 In. (mm)	Spacing Required to Obtain Max. Working Load In. (mm)	Min. Allowable Spacing Between Anchors In. (mm) Load Factor Applied = .40
1/4 (6.4)	1-1/8 (28.6)	Carbon Steel With Zinc Plating or Carbon Steel With Hot-Dipped Galvanizing or Type 304 Stainless Steel or Type 316 Stainless Steel	2 (50.8)	1-5/16 (33.3)	-- --	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)
3/8 (9.5)	1-1/2 (38.1)		2-5/8 (66.7)	1-3/4 (44.5)	-- --	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)	-- --	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)	-- --	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)	-- --	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)	-- --	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)	-- --	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)	
1-1/4 (31.8)	5-1/2 (139.7)	9-5/8 (244.5)	6-1/4 (158.8)	-- --	19-1/4 (489.0)	9-5/8 (244.5)	
	8 (203.2)	11-7/16 (290.5)	8 (203.2)	4 (101.6)	16 (406.4)	8 (203.2)	

\* 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.

**Trubolt Wedge Anchors Performance Table**  
Recommended Spacing and Edge Distance Requirements for Tension Loads\*

Anchor Dia. In. (mm)	Embedment Depth In. (mm)	Anchor Type	Edge Distance Required To Obtain Max. Working Load In. (mm)	Min. Allowable Edge Distance At Which The Load Factor Applied = .65 In. (mm)	Spacing Required To Obtain Max. Working Load In. (mm)	Min. Allowable Spacing At Which The Load Factor Applied = .70 In. (mm)
1/4 (6.4)	1-1/8 (28.6)	Carbon Steel With Zinc Plating or Carbon Steel With Hot-Dipped Galvanizing or Type 304 Stainless Steel or Type 316 Stainless Steel	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)	1-15/16 (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)	
1-1/4 (31.8)	5-1/2 (139.7)	9-5/8 (244.5)	4-13/16 (122.2)	19-1/4 (489.0)	9-5/8 (244.5)	
	8 (203.2)	8 (203.2)	4 (101.6)	16 (406.4)	8 (203.2)	

\* 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 Shear and Tension Loading for Trubolt Anchors

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

$$(Ps/Pt)5/3 + (Vs/Vt)5/3 \leq 1$$

Ps = Applied tension load

Vs = Applied shear load

Pt = Allowable tension load

Vt = Allowable shear load