GENERAL INFORMATION

316 STAINLESS STEEL WEDGE-BOLT™

Screw Anchor

PRODUCT DESCRIPTION

The 316 Stainless Steel Wedge-Bolt anchor is a one piece, heavy duty screw anchor with a finished hex head. It is simple to install, easy to identify, a fully removable.

The 316 Stainless Steel Wedge-Bolt has many unique features and benefits that make it well suited for many applications, both indoors and out. The steel threads along the anchor body self tap into the hole during installation and provide positive keyed engagement. The benefit to the designer is higher load capacities, while the benefit to the user is ease of installation. The 316 Stainless Steel Wedge-Bolt can be installed with either a powered impact wrench or conventional hand socket.

316 Stainless Steel Wedge-Bolt screw anchors are designed to be used with a matched tolerance Wedge-Bit for optimum performance. The Wedge-Bolt works in fixture clearance holes that are 1/16" over nominal, which is typical of standard fixture holes used in steel fabrication.

316 Stainless Steel Wedge-Bolt screw anchors are not recommended for immersion in or long term exposure to chloride/chlorine environments.

GENERAL APPLICATIONS AND USES

- Interior and Exterior Applications
- Support Ledgers and Windows
- Railing and Fencing
- Storage Facilities
- Repairs & Retrofits
- Maintenance

FEATURES AND BENEFITS

+ High corrosion resistance of Type 316 stainless steel
+ Consistent performance in high and low strength concrete
+ Anchor can be installed through standard size fixture holes in steel
+ Diameter, length and identifying marking stamped on head of each anchor
+ Can be installed with an impact wrench or conventional hand socket
+ Fast installation and immediate loading minimizes downtime
+ Finished hex head provides attractive appearance and minimizes tripping hazard
+ Can be installed closer to the edge than traditional expansion anchors
+ Ratchet teeth on underside of hex washer head contact against the fixture
+ Removable

APPROVALS AND LISTINGS

- Tested in accordance with ASTM E488

GUIDE SPECIFICATIONS

CSI Divisions: 03 16 00 - Concrete Anchors, 04 05 19.16 - Masonry Anchors and 05 05 19 - Post-Installed Concrete Anchors. Screw anchors shall be 316 Stainless Steel Wedge-Bolt as supplied by DEWALT, Towson, MD. Anchors shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

SECTION CONTENTS

316 STAINLESS STEEL WEDGE-BOLT

HEAD STYLES

- Hex washer head

ANCHOR MATERIALS

- Type 316 Stainless Steel

ANCHOR SIZE RANGE (TYP.)

- 1/4" to 1/2" diameters

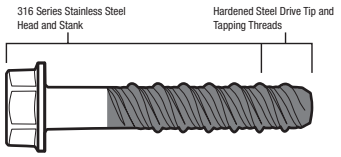
SUITABLE BASE MATERIALS

- Normal-weight Concrete
- Lightweight Concrete
- Grouted Concrete Masonry (CMU)
- Brick Masonry

MATERIAL SPECIFICATIONS

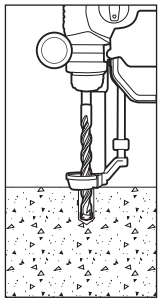
Anchor component	Specification
Anchor Body and hex washer head	Type 316 Stainless Steel[1]

1. With sacrificial carbon steel drive tip and tapping threads.

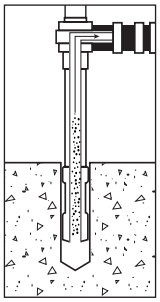


INSTALLATION INSTRUCTIONS

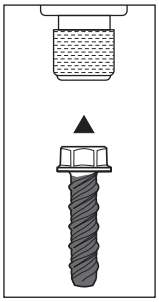
Installation Instructions for 316 Stainless Steel Wedge-Bolt



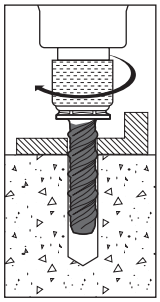
Step 1
Using the proper Wedge-bit size, drill a hole into the base material to the required depth. The tolerances of the Wedge-bit used must meet the requirements of the published Wedge-bit range.



Step 2
Remove dust and debris from the hole during drilling (e.g. dust extractor) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.

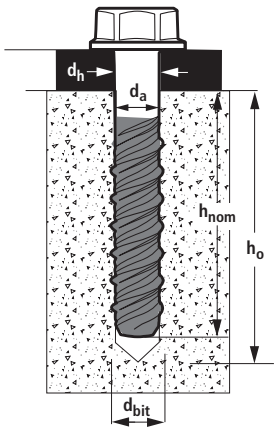


Step 3
Select a powered impact wrench that does not exceed the maximum torque, $T_{inst,max}$ or $T_{impact,max}$, for the selected anchor diameter. Attach an appropriate sized hex socket/driver to the impact wrench. Mount the screw anchor head into the socket.



Step 4
Drive the anchor through the fixture and into the hole until the head of the anchor comes into contact with the fixture. The anchor should be snug after installation. Do not spin the hex socket off the anchor to disengage.

316 Stainless Steel Wedge-Bolt Anchor Detail



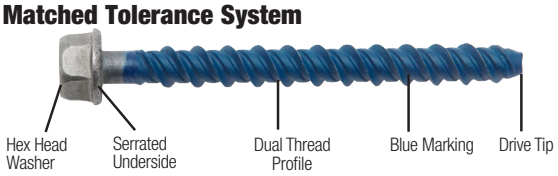
Nomenclature

d_a = Diameter of Anchor
d_{bit} = Diameter of Drill Bit
d_h = Diameter of Clearance Hole
h = Base Material Thickness. The value of h should be $1.5h_{nom}$ or 3", whichever is greater
h_{nom} = Minimum Nominal Embedment
h_o = Minimum Hole Depth

Hex Head Marking

Legend
Diameter, material, and length identification mark

Matched Tolerance System



BLUE WEDGE-BIT

Designed and tested as a system for consistency and reliability

INSTALLATION SPECIFICATIONS

Installation Specifications for 316 Stainless Steel Wedge-Bolt in Concrete

Anchor Property / Setting Information	Notation	Units	Nominal Anchor Diameter		
			1/4	3/8	1/2
Anchor diameter	d_a	in. (mm)	0.250 (6.4)	0.375 (9.5)	0.500 (12.7)
Minimum diameter of hole clearance in fixture	d_h	in. (mm)	5/16 (7.9)	7/16 (11.1)	9/16 (14.3)
Nominal drill bit diameter	d_{bit}	in.	1/4 Wedge-Bit	3/8 Wedge-Bit	1/2 Wedge-Bit
Minimum nominal embedment depth	h_{nom}	in. (mm)	1-3/4 (44)	2 (51)	2-3/4 (70)
Minimum hole depth	h_o	in. (mm)	2 (51)	2-1/4 (57)	3 (77)
Minimum overall anchor length	ℓ_{anch}	in. (mm)	2 (51)	2-1/2 (64)	3 (76)
Max installation torque	$T_{inst,max}$	ft.-lbf. (N-m)	15 (20)	35 (47)	60 (81)
Max impact wrench power (torque)	$T_{impact,max}$	ft.-lbf. (N-m)	115 (156)	245 (332)	300 (407)
Torque wrench/socket size	-	in.	7/16	9/16	3/4
Head height	-	in.	7/32	21/64	7/16
Nominal washer diameter	-	in.	37/64	3/4	1-1/16
Ultimate tensile strength	(UTS)	ksi	80	100	100
Approximate yield strength	(YS)	ksi	64	80	80

For SI: 1 inch = 25.4 mm, 1 ft-lbf = 1.356 N-m.

PERFORMANCE DATA (ASD)

Ultimate Load Capacities for 316 Stainless Steel Wedge-Bolt in Normal-Weight Concrete[1,2]

Nominal Anchor Diameter in.	Minimum Embedment Depth, h_{nom} in. (mm)	Minimum Concrete Compressive Strength									
		f'c = 2,500 psi (17.3 MPa)		f'c = 3,000 psi (20.7 MPa)		f'c = 4,000 psi (27.6 MPa)		f'c = 6,000 psi (41.4 MPa)		f'c = 8,000 psi (55.2 MPa)	
		Tension lbs. (kN)	Shear lbs. (kN)	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	1-3/4 (44)	890 (4.0)	1,385 (6.2)	975 (4.3)	1,520 (6.8)	1,130 (5.0)	1,755 (7.8)	1,440 (6.4)	2,560 (11.4)	1,440 (6.4)	2,850 (12.7)
	2-1/2 (64)	2,485 (11.1)	1,385 (6.2)	2,720 (12.1)	1,520 (6.8)	3,145 (14.0)	1,755 (7.8)	3,150 (14.0)	2,560 (11.4)	3,150 (14.0)	2,850 (12.7)
3/8	2 (51)	735 (3.3)	1,675 (7.5)	805 (3.6)	1,833 (8.2)	930 (4.1)	2,115 (9.4)	1,180 (5.2)	2,710 (12.1)	1,210 (5.4)	3,295 (14.7)
	2-1/2 (64)	1,515 (6.7)	1,675 (7.5)	1,655 (7.4)	1,833 (8.2)	1,915 (8.5)	2,115 (9.4)	2,130 (9.5)	2,710 (12.1)	2,180 (9.7)	3,295 (14.7)
	3-1/2 (89)	3,525 (15.7)	1,675 (7.5)	3,860 (17.2)	1,833 (8.2)	4,455 (19.8)	2,115 (9.4)	4,570 (20.3)	2,710 (12.1)	4,680 (20.8)	3,295 (14.7)
1/2	2-3/4 (70)	3,000 (13.3)	4,675 (20.8)	3,285 (14.6)	5,120 (22.8)	3,790 (16.9)	5,915 (26.3)	5,975 (26.6)	7,560 (33.6)	6,900 (30.7)	9,205 (40.9)
	3-1/2 (89)	3,830 (17.0)	5,205 (23.2)	4,195 (18.7)	5,700 (25.4)	4,845 (21.6)	6,590 (29.3)	6,800 (30.2)	7,390 (32.9)	7,855 (34.9)	8,995 (40.0)
	4-1/2 (114)	5,680 (25.3)	5,205 (23.2)	6,220 (27.7)	5,700 (25.4)	7,180 (31.9)	6,590 (29.3)	9,760 (43.4)	7,390 (32.9)	11,265 (50.1)	8,995 (40.0)

1. Tabulated load values are for anchors installed in uncracked normal weight concrete. Concrete compressive strength must be at a minimum at the time of installation.
2. Ultimate load capacities must be reduced by a minimum safety factor of 4.0 or greater to determine allowable working load.

Allowable Load Capacities for 316 Stainless Steel Wedge-Bolt in Normal-Weight Concrete[1,2,3,4,5]

Nominal Anchor Diameter in.	Minimum Embedment Depth, h_{nom} in. (mm)	Minimum Concrete Compressive Strength									
		f'c = 2,500 psi (17.3 MPa)		f'c = 3,000 psi (20.7 MPa)		f'c = 4,000 psi (27.6 MPa)		f'c = 6,000 psi (41.4 MPa)		f'c = 8,000 psi (55.2 MPa)	
		Tension lbs. (kN)	Shear lbs. (kN)	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	1-3/4 (44)	225 (1.0)	345 (1.5)	245 (1.1)	380 (1.7)	285 (1.3)	440 (2.0)	360 (1.6)	640 (2.8)	360 (1.6)	715 (3.2)
	2-1/2 (64)	620 (2.8)	345 (1.5)	680 (3.0)	380 (1.7)	785 (3.5)	440 (2.0)	790 (3.5)	640 (2.8)	790 (3.5)	715 (3.2)
3/8	2 (51)	185 (0.8)	420 (1.9)	200 (0.9)	460 (2.0)	235 (1.0)	530 (2.4)	295 (1.3)	680 (3.0)	305 (1.4)	825 (3.7)
	2-1/2 (64)	380 (1.7)	420 (1.9)	415 (1.8)	460 (2.0)	480 (2.1)	530 (2.4)	535 (2.4)	680 (3.0)	545 (2.4)	825 (3.7)
	3-1/2 (89)	880 (3.9)	420 (1.9)	965 (4.3)	460 (2.0)	1,115 (5.0)	530 (2.4)	1,145 (5.1)	680 (3.0)	1,170 (5.2)	825 (3.7)
1/2	2-3/4 (70)	750 (3.3)	1,170 (5.2)	820 (3.6)	1,280 (5.7)	950 (4.2)	1,480 (6.6)	1,495 (6.7)	1,890 (8.4)	1,725 (7.7)	2,300 (10.2)
	3-1/2 (89)	960 (4.3)	1,300 (5.8)	1,050 (4.7)	1,425 (6.3)	1,210 (5.4)	1,650 (7.3)	1,700 (7.6)	1,850 (8.2)	1,965 (8.7)	2,250 (10.0)
	4-1/2 (114)	1,420 (6.3)	1,300 (5.8)	1,555 (6.9)	1,425 (6.3)	1,795 (8.0)	1,650 (7.3)	2,440 (10.9)	1,850 (8.2)	2,815 (12.5)	2,250 (10.0)

1. Tabulated load values are for anchors installed in uncracked normal weight concrete. Concrete compressive strength must be at a minimum at the time of installation.
2. Allowable load capacities are calculated using an applied safety factor of 4.0.
3. Allowable load capacities must be multiplied by reduction factors when anchor spacing or edge distances are less than critical distances.
4. Linear interpolation may be used to determine allowable loads for intermediate embedments and compressive strengths.
5. Allowable loads for lightweight concrete may be determined by multiplying the tabulated allowable load capacities for normal weight concrete by 0.60.

LOAD ADJUSTMENT FACTORS FOR SPACING AND EDGE DISTANCES[1]

Anchor Installed in Normal-Weight Concrete

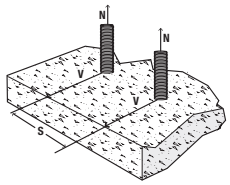
Anchor Dimension	Load Type	Critical Distance (Full Anchor Capacity)	Critical Load Factor	Minimum Distance (Reduced Capacity)	Minimum Load Factor
Spacing (s)	Tension	s_{cr} = 12d	F_{NS} = 1.0	s_{min} = 4d	F_{NS} = 0.50
	Shear	s_{cr} = 12d	F_{VS} = 1.0	s_{min} = 4d	F_{VS} = 0.75
Edge Distance (c)	Tension	c_{cr} = 8d	F_{NC} = 1.0	c_{min} = 3d	F_{NC} = 0.70
	Shear	c_{cr} = 12d	F_{VC} = 1.0	c_{min} = 3d	F_{VC} = 0.15

1. Allowable load values found in the performance data tables are multiplied by reduction factors when anchor spacing or edge distances are less than critical distances. Linear interpolation is allowed for intermediate anchor spacing and edge distances between critical and minimum distances. When an anchor is affected by both reduced spacing and edge distance, the spacing and edge reduction factors must be combined (multiplied). Multiple reduction factors for anchor spacing and edge distance may be required depending on the anchor group configuration.

LOAD ADJUSTMENT FACTORS FOR NORMAL-WEIGHT CONCRETE

Spacing, Tension (F_{NS})

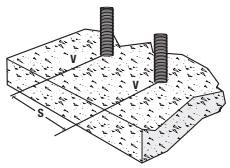
Dia. (in.)		1/4	3/8	1/2
s_{cr} (in.)		3	4-1/2	6
s_{min} (in.)		1	1-1/2	2
Spacing, s (inches)	1	0.50	-	-
	1-1/2	0.63	0.50	-
	2	0.75	0.58	0.50
	2-1/2	0.88	0.67	0.56
	3	1.00	0.75	0.63
	4-1/2	1.00	1.00	0.81
	6	1.00	1.00	1.00



Notes: For anchors loaded in tension, the critical spacing (s_{cr}) is equal to 12 anchor diameters (12d) at which the anchor achieves 100% of load.
Minimum spacing (s_{min}) is equal to 4 anchor diameters (4d) at which the anchor achieves 50% of load.

Spacing, Shear (F_{VS})

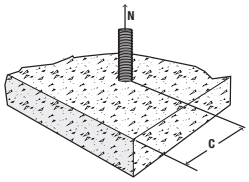
Dia. (in.)		1/4	3/8	1/2
s_{cr} (in.)		3	4-1/2	6
s_{min} (in.)		1	1-1/2	2
Spacing, s (inches)	1	0.75	-	-
	1-1/2	0.81	0.75	-
	2	0.88	0.79	0.75
	2-1/2	0.91	0.83	0.78
	3	1.00	0.88	0.81
	4-1/2	1.00	1.00	0.91
	6	1.00	1.00	1.00



Notes: For anchors loaded in shear, the critical spacing (s_{cr}) is equal to 12 anchor diameters (12d) at which the anchor achieves 100% of load.
Minimum spacing (s_{min}) is equal to 4 anchor diameters (4d) at which the anchor achieves 75% of load.

Edge Distance, Tension (F_{NC})

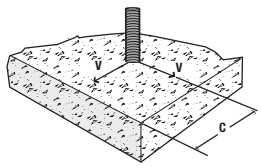
Dia. (in.)		1/4	3/8	1/2
c_{cr} (in.)		2	3	4
c_{min} (in.)		3/4	1-1/8	1-1/2
Edge Distance, c (in.)	3/4	0.70	-	-
	1-1/8	0.79	0.70	-
	1-1/2	0.88	0.76	0.70
	1-7/8	0.97	0.82	0.75
	2	1.00	0.84	0.76
	2-1/4	1.00	0.88	0.79
	3	1.00	1.00	0.88
	4	1.00	1.00	1.00



Notes: For anchors loaded in tension, the critical edge distance (c_{cr}) is equal to 8 anchor diameters (8d) at which the anchor achieves 100% of load.
Minimum edge distance (c_{min}) is equal to 3 anchor diameters (3d) at which the anchor achieves 70% of load.

Edge Distance, Shear (F_{VC})

Dia. (in.)		1/4	3/8	1/2
c_{cr} (in.)		3	4-1/2	6
c_{min} (in.)		3/4	1-1/8	1-1/2
Edge Distance, c (in.)	3/4	0.15	-	-
	1-1/8	0.29	0.15	-
	1-1/2	0.43	0.24	0.15
	1-7/8	0.58	0.34	0.22
	2-1/4	0.72	0.43	0.29
	3	1.00	0.62	0.43
	4-1/2	1.00	1.00	0.72
	6	1.00	1.00	1.00



Notes: For anchors loaded in shear, the critical edge distance (c_{cr}) is equal to 12 anchor diameters (12d) at which the anchor achieves 100% of load.
Minimum edge distance (c_{min}) is equal to 3 anchor diameters (3d) at which the anchor achieves 15% of load

MASONRY PERFORMANCE DATA

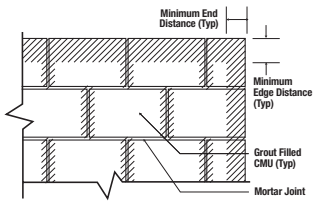
Ultimate Load Capacities for 316 Stainless Steel Wedge-Bolt installed into the Face or End of Grout Filled Concrete Masonry[1,2,3]

Nominal Anchor Diameter d in.	Minimum Embed. h_{nom} in. (mm)	Minimum Edge Distance in. (mm)	Minimum End Distance in. (mm)	Tension lbs. (kN)		Shear lbs. (kN)		
				f'm = 1,500 psi	f'm = 2,000 psi	Loading Direction	f'm = 1,500 psi	f'm = 2,000 psi
1/4	1-3/4 (44)	3-3/4 (95)	1-1/2 (38)	570 (2.5)	660 (2.9)	Perpendicular or parallel to wall edge or end	645 (2.9)	745 (3.3)
	2-1/4 (57)	3-3/4 (95)	1-1/2 (38)	1,145 (5.1)	1,325 (5.9)		910 (4.0)	1,050 (4.7)
3/8	2 (51)	3-3/4 (95)	1-1/2 (38)	1,535 (6.8)	1,775 (7.9)	Perpendicular or parallel to wall edge or end	775 (3.4)	895 (4.0)
	3 (76)	3-3/4 (95)	3-3/4 (95)	2,300 (10.2)	2,655 (11.8)	Perpendicular or parallel to wall edge or end	3,110 (13.8)	3,585 (15.9)
	3 (76)	3-3/4 (95)	11-1/4 (286)			Parallel to wall edge	3,325 (14.8)	3,835 (17.1)
1/2	2-3/4 (70)	3-3/4 (95)	1-3/4 (44)	1,330 (5.9)	1,535 (6.8)	Perpendicular or parallel to wall edge or end	2,050 (9.1)	2,365 (10.5)
	2-3/4 (70)	3-3/4 (95)	3-3/4 (95)				2,630 (11.7)	3,040 (13.5)
	4-1/2 (114)	3-3/4 (95)	11-1/4 (286)	4,680 (20.8)	5,400 (24.0)		2,630 (11.7)	3,040 (13.5)
	4-1/2 (114)	11-1/4 (286)	11-1/4 (286)				7,290 (32.4)	8,415 (37.4)

1. Tabulated load values are for anchors installed in minimum 8-inch wide, Grade N, Type II, normal-weight concrete masonry units conforming to ASTM C 90 that have reached the minimum designated ultimate strength at the time of installation (f'm ≥ 1,500 psi).
2. Ultimate load capacities must be reduced by a minimum safety factor of 5.0 or greater to determine allowable working load.
3. The tabulated load values are applicable for screw anchors installed at a critical spacing between screw anchors of 16 times the screws anchor diameter. Reduce the tabulated load capacities by 50 percent when anchors are installed at a minimum spacing between screw anchors of 8 times the screw anchor diameter. Linear interpolation may be used for intermediate spacing distances.

Allowable Load Capacities for 316 Stainless Steel Wedge-Bolt installed into the Face or End of Grout Filled Concrete Masonry[1,2,3,4,5]

Nominal Anchor Diameter d in.	Minimum Embed. h_{nom} in. (mm)	Minimum Edge Distance in. (mm)	Minimum End Distance in. (mm)	Tension lbs. (kN)		Shear lbs. (kN)		
				f'm = 1,500 psi	f'm = 2,000 psi	Loading Direction	f'm = 1,500 psi	f'm = 2,000 psi
1/4	1-3/4 (44)	3-3/4 (95)	1-1/2 (38)	115 (0.5)	130 (0.6)	Perpendicular or parallel to wall edge or end	130 (0.6)	150 (0.7)
	2-1/4 (57)	3-3/4 (95)	1-1/2 (38)	230 (1.0)	265 (1.2)		180 (0.8)	210 (0.9)
3/8	2 (51)	3-3/4 (95)	1-1/2 (38)	305 (1.4)	355 (1.6)	Perpendicular or parallel to wall edge or end	155 (0.7)	180 (0.8)
	3 (76)	3-3/4 (95)	3-3/4 (95)	460 (2.0)	530 (2.4)	Perpendicular or parallel to wall edge or end	620 (2.8)	715 (3.2)
	3 (76)	3-3/4 (95)	11-1/4 (286)			Parallel to wall edge	665 (3.0)	765 (3.4)
1/2	2-3/4 (70)	3-3/4 (95)	1-3/4 (44)	265 (1.2)	305 (1.4)	Perpendicular or parallel to wall edge or end	410 (1.8)	475 (2.1)
	2-3/4 (70)	3-3/4 (95)	3-3/4 (95)				525 (2.3)	610 (2.7)
	4-1/2 (114)	3-3/4 (95)	11-1/4 (286)	935 (4.2)	1,080 (4.8)		525 (2.3)	610 (2.7)
	4-1/2 (114)	11-1/4 (286)	11-1/4 (286)				1,460 (6.5)	1,685 (7.5)

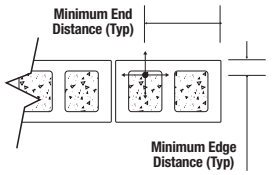


Wall Face
Permissible Anchor Locations
(Un-hatched Area)

1. Tabulated load values are for anchors installed in minimum 8-inch wide, Grade N, Type II, normal-weight concrete masonry units conforming to ASTM C 90 that have reached the minimum designated ultimate strength at the time of installation (f'm ≥ 1,500 psi).
2. Allowable load capacities are calculated using an applied safety factor of 5.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety.
3. Linear interpolation for allowable loads for anchors at intermediate embedment depths may be used.
4. For installation in 3,000 psi grout filled concrete masonry (f'm = 3,000 psi) the load capacity in 1,500 psi grout filled concrete masonry (f'm = 1,500) may be increased by 40% and the load capacity in 2,000 psi grout concrete masonry (f'm = 2,000 psi) may be increased by 22%.
5. The tabulated load values are applicable for screw anchors installed at a critical spacing between screw anchors of 16 times the screws anchor diameter. Reduce the tabulated load capacities by 50 percent when anchors are installed at a minimum spacing between screw anchors of 8 times the screw anchor diameter. Linear interpolation may be used for intermediate spacing distances.

Ultimate and Allowable Load Capacities for 316 Stainless Steel Wedge-Bolt Installed in Grout Filled Concrete Masonry Wall Tops[1,2,3,4,5,6]

Nominal Anchor Diameter d in.	Minimum Nominal Embed. Depth h_{nom} in. (mm)	Minimum Edge Distance in. (mm)	Minimum End Distance in. (mm)	Minimum Spacing Distance in. (mm)	Ultimate Load		Allowable Load	
					Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4	2-1/2 (64)	1-1/2 (38)	3 (76)	4 (102)	1,025 (4.6)	625 (2.8)	205 (0.9)	125 (0.6)
3/8	3 (76)	1-1/2 (38)	4 (102)	6 (152)	1,675 (7.5)	1,075 (4.8)	335 (1.5)	215 (1.0)
1/2	4-1/2 (114)	1-3/4 (44)	6 (152)	8 (203)	2,475 (11.0)	1,075 (4.8)	495 (2.2)	215 (1.0)

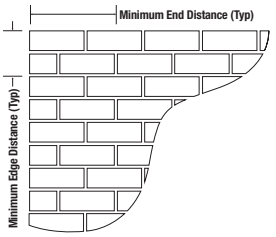


Top of Wall

1. All values are for anchors installed in fully grouted concrete masonry wall construction with materials meeting minimum compressive strength, f'm, of 1,500 psi (10.3 MPa). Concrete masonry units must be light-, medium, or normal-weight conforming to ASTM C90. Allowable loads are based on a safety factor of 5.0.
2. Anchors may be installed in any location in the top of the masonry wall except within 1-1/4-inch from the of the mortar joint (head joint), provided the minimum edge and end distances are maintained.
3. A maximum of two anchors may be installed in a single masonry cell in accordance with the spacing and edge or end distance requirements. Embedment is measured from the outside surface of the concrete masonry unit to the embedded end of the anchor.
4. Spacing distance is measured from the centerline to centerline between two anchors.
5. The edge and end distance is measured from the anchor centerline to the closest unrestrained edge and end of the CMU block, respectively.
6. Allowable shear loads may be applied in any direction.

Ultimate and Allowable Load Capacities for 316 Stainless Steel Wedge-Bolt Installed into Multiple Wythe Solid Clay Brick Masonry[1,2,3]

Nominal Anchor Diameter d in.	Minimum Nominal Embed. Depth h_{nom} in. (mm)	Minimum Edge Distance in. (mm)	Minimum End Distance in. (mm)	Minimum Spacing Distance in. (mm)	Ultimate Load		Allowable Load	
					Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4	2-1/2 (64)	3-1/2 (89)	2-1/2 (64)	4 (102)	1,170 (5.2)	1,380 (6.1)	235 (1.0)	275 (1.2)
3/8	2-3/4 (70)	6 (152)	6 (152)	6 (152)	1,435 (6.4)	2,875 (12.8)	285 (1.3)	575 (2.6)
1/2	3-1/4 (83)	9-1/2 (241)	9-1/2 (241)	8 (203)	1,840 (8.2)	7,655 (34.1)	370 (1.6)	1,530 (6.8)



1. Tabulated load values are for anchors installed in multiple wythe, minimum Grade SW, solid clay brick masonry walls conforming to ASTM C 62. Mortar must be minimum Type N. Masonry compressive strength must be as the specified minimum at the time of installation (f'm ≥ 1,500 psi).
2. Ultimate load capacities must be reduced by a minimum safety factor of 5.0 or greater to determine allowable working load.
3. Allowable load capacities listed are calculated using an applied safety factor of 5.0. Consideration of safety factors of 10 or higher may be used depending on the application, such as life safety.

ORDERING INFORMATION

316 Stainless Steel Wedge-Bolt

Cat. No.	Anchor Size (in.)	Thread Length (in.)	Pack Qty.	Carton Qty.
07870-PWR	1/4 x 2	1-3/4	100	600
07872-PWR	1/4 x 3	2-3/4	100	500
07876-PWR	1/4 x 4	2-3/4	100	500
07878-PWR	1/4 x 5	2-3/4	100	500
07880-PWR	3/8 x 2-1/2	2-1/4	50	300
07882-PWR	3/8 x 3	2-1/4	50	250
07884-PWR	3/8 x 4	3-1/2	50	250
07886-PWR	3/8 x 5	3-1/2	50	250
07888-PWR	1/2 x 3	2-3/4	50	150
07890-PWR	1/2 x 4	2-3/4	50	150
07892-PWR	1/2 x 5	3-3/4	25	100
07894-PWR	1/2 x 6	3-3/4	25	75

The published size includes the diameter and length of the anchor measured from under the head to the tip.
*316 Stainless Steel Wedge-Bolt has a blue marking and must be installed with a matched tolerance Wedge-Bit.

Wedge-Bit

Cat. No.	Wedge-Bit Description	Usable Length	Pack Qty.	Carton Qty.
01312-PWR	SDS 1/4" x 4"	2"	1	250
01314-PWR	SDS 1/4" x 6"	4"	1	100
01315-PWR	SDS 1/4" x 8"	6"	1	-
01316-PWR	SDS 3/8" x 6"	4"	1	200
01318-PWR	SDS 3/8" x 10"	8"	1	100
01332-PWR	SDS 3/8" x 12"	10"	1	50
01319-PWR	SDS 3/8" x 18"	16"	1	50
01320-PWR	SDS 1/2" x 6"	4"	1	150
01322-PWR	SDS 1/2" x 10"	8"	1	50
01334-PWR	SDS 1/2" x 12"	10"	1	50
01335-PWR	SDS 1/2" x 18"	16"	1	50
01340-PWR	Spline 1/2" x 13"	8"	1	20
01342-PWR	Spline 1/2" x 16"	11"	1	-
01354-PWR	SDS-Max 1/2" x 13"	8"	1	20
01370-PWR	HD Straight Shank 1/4" x 4"	2-3/4"	1	100
01372-PWR	HD Straight Shank 1/4" x 6"	4"	1	-
01380-PWR	HD Straight Shank 3/8" x 6"	4"	1	-
01384-PWR	HD Straight Shank 3/8" x 13"	11"	1	-
01390-PWR	HD Straight Shank 1/2" x 6"	4"	1	-
01394-PWR	HD Straight Shank 1/2" x 13"	11"	1	50

Suggested Impact Wrench and Socket

Nominal Anchor Size	Socket Size	Impact Rated Socket		20V Max* Impact Wrenches	
1/4"	7/16"	DW2285		DCF923GP2 3/8" ATOMIC Compact Impact Wrench with Hog Ring Anvil	
3/8"	9/16"	DW22872		DCF921GP2 1/2" ATOMIC Compact Impact Wrench with Hog Ring Anvil	
1/2"	3/4"	DW22902		DCF891P2 1/2" Mid-Range Impact Wrench with Hog Ring Anvil