



## Redi-Bolt® Anchors

Reduces Cost, Increases Safety and Improves Anchoring Performance

### Description/Suggested Specifications: Heavy Duty Sleeve Anchors

Specified for anchorage into solid concrete and concrete fill.

The Redi-Bolt features a patented double expansion sleeve, Grade 5, high strength threaded bolt, a steel expander cone and washer. The exposed end of the anchor is stamped by Red Head to identify anchor length post-installation. Anchors should be installed with carbide type drill bits made in accordance to ANSI B212.15-1994.

### Advantages:

Redi-Bolt provides up to 22% more pullout and up to 48% more shear than wedge anchors; up to 40% more pullout and 61% more shear than traditional sleeve anchors. This means reduced costs because with higher tension and shear values you can:

- Use a smaller diameter anchor
- Use a smaller, less expensive drill bit
- Drill faster because of smaller hole and shallower embedment
- Threaded bolt can be removed and reinstalled into expansion assembly

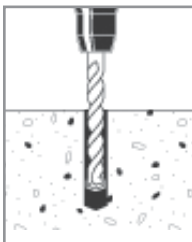
### Vibration Resistance

Ontario Hydro Test Report Findings: 1/2" Redi-Bolt anchor withstood two million dynamic load cycles with no indication of slip or unusual change.

### Approvals/listings

- Meets or exceeds U.S. Government G.S.A. specification FF-S-325 Group II, Type 3, Class 1
- Ontario Hydro Vibration Test
- Data for seismic conditions tested to ICBO criteria by ICBO lab

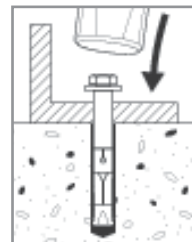
## Installation Steps



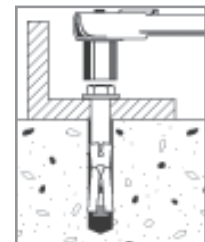
- Select a carbide drill bit with a diameter equal to the anchor diameter. Drill hole to any depth exceeding the desired embedment (see chart for recommended embedment).



- Clean hole or continue drilling additional depth to accommodate drill fines (concrete dust).



- Drive the anchor into the hole through material being fastened until washer is flush with material.



- Expand Redi-Bolt by tightening the anchor 3 to 5 turns, or to the specified torque requirements (see installation instructions).



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## Technical Data

### Redi-Bolt Removable Anchors Selection Chart

ANCHOR DRILL DIAMETER In. (mm)	Anchor LENGTH In. (mm)	MINIMUM EMBEDMENT IN CONCRETE In. (mm)	MaxIMUM FIXTURE THICKNESS In. (mm)	INSTALLATION Length Ft. Lbs. (Nm)	Qty/wt Qty/Wt ID Code letter	per master per box lbs.	carton lbs.
3/8 (9.5)	2 (50.8)	1-1/2 (38.1)	1/2 (12.7)	35 (47.5)	B	50/3.7	400/30
3/8 (9.5)	3 (75.2)	2 (50.8)	1 (25.4)	35 (47.5)	D	50/5.4	400/44
1/2 (12.7)	3-3/4 (95.3)	2-1/2 (63.5)	1-1/4 (31.8)	60 (81.4)	E	25/5.9	200/48
1/2 (12.7)	4-3/4 (120.7)	2-1/2 (63.5)	2-1/4 (57.2)	60 (81.4)	G	25/6.4	200/56
1/2 (12.7)	5-3/4 (146.5)	2-1/2 (63.5)	3-1/4 (82.6)	60 (81.4)	I	25/8.2	200/66
5/8 (15.9)	4 (101.6)	2-3/4 (69.9)	1-1/4 (31.8)	100 (135.7)	F	15/6.6	150/67
5/8 (15.9)	5 (127.0)	2-3/4 (69.9)	2-1/4 (57.2)	100 (135.7)	H	15/7.9	150/80
5/8 (15.9)	6 (152.4)	2-3/4 (69.9)	3-1/4 (82.6)	100 (135.7)	J	10/6.1	150/31
3/4 (19.1)	4-1/4 (108.0)	3 (75.2)	1-1/4 (31.8)	120 (162.8)	F	10/6.3	50/32
3/4 (19.1)	5-1/4 (133.4)	3 (75.2)	2-1/4 (57.2)	120 (162.8)	H	10/7.5	50/38
3/4 (19.1)	7-1/4 (184.2)	3 (75.2)	4-1/4 (108.0)	120 (162.8)	L	5/5.0	50/50

\* Grade 2 Hollow Block Anchor

### Recommended Spacing And Edge Distance Requirements For Tension Loads

Anchor Dia. In. (mm)	Installation Torque Ft. Lbs. (Nm)	Edge Distance Required To Obtain Max. Working Load In. (mm)	Min. Allowable Edge Distance At Which The Load Factor Applied = 0.75 In. (mm)	Spacing Required To Obtain Max. Working Load In. (mm)	Min. Allowable Spacing Between Anchors Load Factor Applied = 0.50 In. (mm)
3/8 (9.5)	35 (47.5)	3-3/4 (95.3)	1-7/8 (47.6)	4-1/2 (114.3)	1-7/8 (47.6)
1/2 (12.7)	60 (81.4)	5 (127.0)	2-1/2 (63.5)	6 (152.4)	2-1/2 (63.5)
5/8 (15.9)	100 (135.7)	6-1/4 (158.8)	3-1/8 (79.4)	7-1/2 (190.5)	3-1/8 (79.4)
3/4 (19.1)	120 (162.8)	7-1/2 (190.5)	3-3/4 (95.3)	9 (228.6)	3-3/4 (95.3)

Linear interpolation may be used for intermediate spacing and edge distances.

### Ultimate Shear And Tension Values (Lbs/kN) In 4000 Psi (27.6 MPa) Concrete

Anchor Dia. In. (mm)	Embedment In. (mm)	Installation Torque Ft. Lbs. (Nm)	Ultimate Tension Lbs. (kN)	Ultimate Shear Lbs. (kN)
3/8 (9.5)	2 (50.8)	35 (47.5)	5,195 (23.1)	7,730 (34.4)
	2-1/2 (63.5)		5,870 (26.1)	8,018 (35.7)
1/2 (12.7)	2-1/2 (63.5)	60 (81.4)	6,931 (30.8)	10,132 (45.1)
	4 (101.6)		10,518 (46.8)	13,005 (57.9)
5/8 (15.9)	2-3/4 (69.9)	100 (135.7)	8,585 (38.2)	13,484 (60.0)
	5 (127.0)		19,219 (85.5)	21,040 (93.6)
3/4 (19.1)	3 (76.2)	120 (162.8)	10,574 (47.0)	18,733 (83.3)
	6 (152.4)		20,267 (90.2)	29,668 (132.0)

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

### Ultimate Shear And Tension Values (Lbs/kN) In C90 Grout-Filled CMU

Anchor Dia. In. (mm)	Embedment In. (mm)	Installation Torque Ft. Lbs. (Nm)	Ultimate Tension Lbs. (kN)	Ultimate Shear Lbs. (kN)
3/8 (9.5)	2 (50.8)	20 (27.1)	3,798 (16.9)	4,855 (21.6)
	2-1/2 (63.5)		3,896 (17.3)	4,855 (21.6)
1/2 (12.7)	2-1/2 (63.5)	35 (47.5)	3,993 (17.8)	6,867 (30.5)
	4 (101.6)		4,182 (18.6)	6,867 (30.5)
5/8 (15.9)	2-3/4 (69.9)	60 (81.4)	3,990 (17.7)	11,777 (52.4)
	5 (127.0)		4,634 (20.5)	12,525 (93.6)
3/4 (19.1)	3 (76.2)	85 (115.3)	4,693 (20.9)	18,733 (55.7)
	6 (152.4)		5,908 (26.3)	13,964 (62.1)

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



# 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

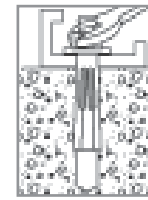
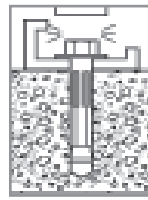
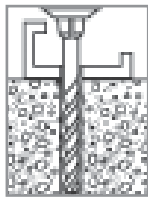
Factory Mutual

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
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 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 type="checkbox"/>	<input 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 type="checkbox"/>	<input 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 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 type="checkbox"/>	<input 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 type="checkbox"/>	<input 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 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 type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>
		3 (76.2)	5/16" /18	1-1/2 (38.1)	1-1/2 (38.1)	50/ 4.9	400/ 40	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>
		3 (76.2)	3/8" /16	1-7/8 (47.6)	1-1/8 (28.6)	25/ 4.0	200/ 33	<input type="checkbox"/>	<input type="checkbox"/>
		4 (101.6)	3/8" /16	1-7/8 (47.6)	2-1/8 (54.0)	25/ 5.3	200/ 44	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>
		3 (76.2)	1/2" /13	2 (50.8)	1 (25.4)	25/ 7.0	150/ 46	<input type="checkbox"/>	<input type="checkbox"/>
4-1/4 (108.0)		1/2" /13	2 (50.8)	2-1/4 (57.2)	10/ 3.9	100/ 41	<input type="checkbox"/>	<input type="checkbox"/>	
6 (152.4)		1/2" /13	2 (50.8)	4 (101.6)	10/ 4.9	50/ 25	<input type="checkbox"/>	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	
	6-1/4 (158.8)	5/8" /11	2-1/4 (57.2)	4 (101.6)	5/ 4.3	50/ 44	<input type="checkbox"/>	<input 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 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 type="checkbox"/>	<input type="checkbox"/>
		3-1/8 (79.4)	3/16" /24	1-1/8 (28.6)	2 (50.8)	100/ 3.8	1000/ 38	<input type="checkbox"/>	<input type="checkbox"/>
		4 (101.6)	3/16" /24	1-1/8 (28.6)	2-7/8 (73.0)	100/ 4.7	1000/ 48	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>
		4 (101.6)	5/16" /18	1-1/2 (38.1)	2-1/2 (63.5)	50/ 5.3	400/ 4	<input type="checkbox"/>	<input type="checkbox"/>
Threshold Flat Head (head dia. .385)	1/4" - 20	2-1/4 (57.2)	3/16" /24	1-1/8 (28.6)	1-1/8 (28.6)	100/ 2.5	1000/ 25	<input type="checkbox"/>	<input type="checkbox"/>
		1-3/8 (34.9)	3/16" /24	1-1/8 (28.6)	1/4 (6.4)	100/ 1.9	1000/ 20	<input 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 type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>
Round Head	1/4" - 20	2-5/8 (66.7)	5/16" /18	1-1/2 (38.1)	1-1/8 (28.6)	50/ 3.9	500/ 41	<input type="checkbox"/>	<input type="checkbox"/>
		3 (76.2)	5/16" /18	1-1/2 (38.1)	1-1/2 (38.1)	50/ 5.6	300/ 40	<input 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 type="checkbox"/>	<input type="checkbox"/>
		2-1/4 (57.2)	1/2" /13	1-7/8 (47.6)	-- --	25/ 6.5	125/ 34	<input 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 type="checkbox"/>	<input type="checkbox"/>
		2-1/4 (57.2)	1/2" /13 Hanger	1-7/8 (47.6)	-- --	25/ 6.5	125/ 34	<input type="checkbox"/>	<input type="checkbox"/>

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**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