

Selection Guide – Anchors for Concrete Applications

ANCHOR TYPE

KEY FEATURES

SIZE RANGE (inches)



Trubolt® Wedge Anchors



ID STAMP

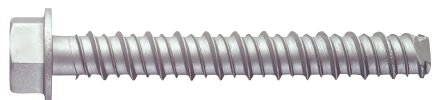


- 2018 IBC Compliant
- Seismic zone (A-B) approved
- Fully-threaded
- Length ID head stamped
- Stainless steel clip
- Through-fixture fastening

Diameter: 1/4 – 1
Length: 1-3/4 – 12



Large Diameter Tapcon (LDT) Self-Threading Anchor



- Anti-rotation serrated washer
- Extra large hex washer head
- Length ID head stamped
- Through-fixture fastening

LDT with Zinc Plating
Diameter: 3/8 – 3/4
Length: 1-3/4 – 6-1/4



Multi-Set II® Drop-In Anchors



RM

RL

RX

CL

- RM: Flanged body to keep anchor flush with surface of concrete
- RL: Non-flanged body for recessed setting
- RX: Designed for hollow core and post tension concrete
- CL: Designed for one-sided forming, accepts coil rod

Diameter: 1/4 – 3/4
Length: 1 – 3-3/16

Diameter: 1/4 – 3/4
Length: 1 – 3-3/16

Diameter: 3/8 & 1/2
Length: 3/4 – 1

Diameter: 1/2 & 3/4
Length: 2 & 3-3/16

Dynabolt® Sleeve Anchors



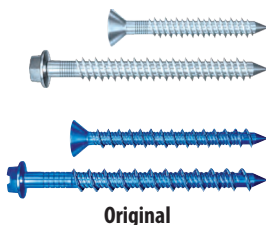
For both Hollow and Solid Concrete Applications

- Concrete, block and brick
- Many choices of head styles
- Through-fixture fastening
- Available in 304 stainless steel

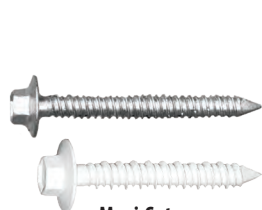
Diameter: 1/4 – 3/4
Length: 5/8 – 6-1/4



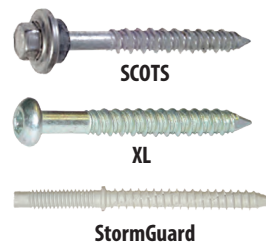
Tapcon® Concrete Anchors with Advanced Threadform Technology™



Original



Maxi-Set



SCOTS

XL

StormGuard

Selection Guide

	CORROSION RESISTANCE	PERFORMANCE	HEAD STYLES	APPROVALS/LISTINGS
Trubolt® Wedge cont'd	<ul style="list-style-type: none"> Zinc-plated carbon steel to ASTM B633, SC1, Type III Hot dipped galvanized to ASTM A-153 Type 304 and 316 stainless steel 	Ultimate Pullout Performance in 4,000 psi Concrete up to 26,540 lbs. (1" diameter)	Hex nut Tie-Wire version	ICC Evaluation Service, Inc. # 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)
LDT cont'd	<ul style="list-style-type: none"> Zinc-plated carbon steel to ASTM B695 & B633 Type 410 stainless steel 	Ultimate Pullout Performance in 4,000 psi Concrete up to 23,266 lbs. (3/4" diameter)	Finished bolt style	
Multi-Set II Drop-In cont'd	<ul style="list-style-type: none"> Zinc-plated carbon steel to ASTM B633, SC1, Type III Type 304 and 316 stainless steel 	Ultimate Pullout Performance in 4,000 psi Concrete up to 9,480 lbs. (3/4" diameter)	RM: Flanged body RL: Non-flanged body Use any bolt or threaded rod	GSA: A-A-55614 Type 1 (Formerly GSA: FF-S-325 Group VIII) Underwriters Laboratories Factory Mutual Caltrans
Dynabolt® Sleeve cont'd	<ul style="list-style-type: none"> Zinc-plated carbon steel to ASTM B633, SC1, Type III Type 304 stainless steel 	Ultimate Pullout Performance in 4,000 psi Concrete up to 8,900 lbs. (3/4" diameter)	Flat head Hex nut Acorn nut Tie-Wire Round head Threshold flat head	GSA: A-A-1922A (Formerly GSA: FF-S-325 Group II, Type 3, Class 3) Factory Mutual
Tapcon cont'd	<ul style="list-style-type: none"> Patented Trade Secret Climaseal® coating Type 410 stainless steel <p>The above is for the Original and 410 SS Tapcon only. For data on other Tapcon products see their product pages as follows: Tapcon Maxi-Set on page 94, Tapcon SCOTS on page 94, Tapcon XL on page 98, and Tapcon StormGuard on page 100.</p>	Ultimate Pullout Performance in 4,000 psi Concrete up to 2,380 lbs.	Hex head Phillips flat head	Blue Climaseal™ ICC Evaluation Service, Inc.— ESR-1671 ICC Evaluation Service, Inc.— ESR-2202 Miami-Dade County Florida Building Code 410 Stainless Steel Miami-Dade County Florida Building Code

Because applications vary, ITW RED HEAD cannot guarantee the performance of this product. Each customer assumes all responsibility and risk for the use of this product. The safe handling and the suitability of this product for use is the sole responsibility of the customer. Specific job site conditions should be considered when selecting the proper product. Should you have any questions, please call the Technical Assistance Department at 800-848-5611.



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



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.



Trubolt
Wedge
Anchor

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.

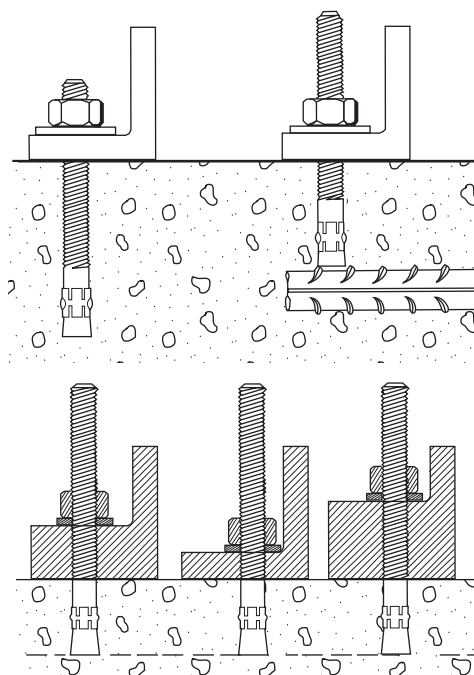
ADVANTAGES

- 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.

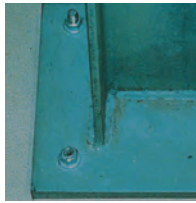
**** ONLY FOR USE IN CONCRETE ****

SELECTION CHART

Trubolt Wedge

Carbon Steel w/Zinc Plating

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

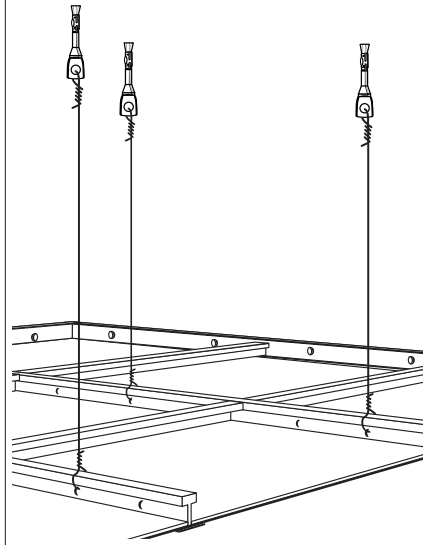


Typical Applications—
Structural Columns,
Machinery, Equipment, etc.

Environment—Interior
(non-corrosive)

Level of Corrosion—Low

TW-1400 Tie Wire Wedge



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)		7	(177.8)	5-1/8	(130.2)	50	10.4	250	53
WS-1226	1-1/4	(31.8)	1/2" - 13	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)		8-1/2	(215.9)	5-1/8	(130.2)	10	8.0	30	25
WS-58100	5-3/4	(146.0)	3/4" - 10	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	(31.8)	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)		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 $> 45\mu m = .002"$. 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.

PERFORMANCE TABLE

Trubolt Wedge Anchors

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

ANCHOR DIA. in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		EMBEDMENT DEPTH in. (mm)		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)			
							TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
lbs. (kN)	lbs. (kN)	lbs. (kN)	lbs. (kN)	lbs. (kN)	lbs. (kN)		lbs. (kN)	lbs. (kN)	lbs. (kN)	lbs. (kN)	lbs. (kN)	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. in. (mm)		INSTLLATION TORQUE ft. lbs. (Nm)		EMBEDMENT DEPTH in. (mm)		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)			
							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



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



Large Diameter Tapcon (LDT) Anchors

**Finished head,
Removable Anchor**



LDT

(3/8" & 1/2") (5/8" & 3/4")
Sawtooth™

**Uses standard drill bits—
no special drill bits to
purchase or lose!**

DESCRIPTION/SUGGESTED SPECIFICATIONS

Self-threading Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE



**LDT
Self-threading
Anchor**

The LDT anchor is a high performance anchor that cuts its own threads into concrete.

Anchor bodies are made of hardened carbon steel and zinc plated, **Grade 5**.

The anchors shall have a finished hex washer head with anti-rotation serrations to prevent anchor back-out. The head of the anchor is stamped with a length identification code for easy inspection.

The hole shall be drilled with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994.

ADVANTAGES

SAVE TIME

EASILY INSTALLED

- Installs in less than half the time of wedge anchors or adhesive anchors
- Simply drill a pilot hole and drive the LDT anchor by hand or impact

EASILY REMOVED

- No torching or grinding required to remove anchors

SAVE MONEY

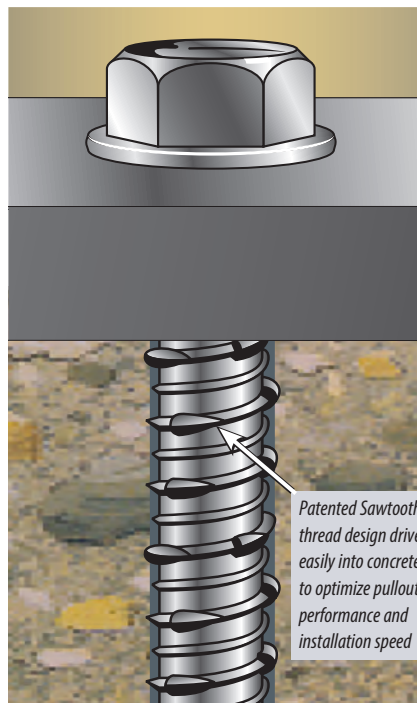
LOWER DRILL BIT COSTS

- Use standard ANSI bits instead of proprietary bits
- Single piece design, no nut and washer to assemble

USE STANDARD ANSI BITS

- No special proprietary bits to purchase or lose
- Reduce chances for anchor failure due to incorrect bit usage

Sawtooth Threads™ diameters available on 5/8" and 3/4"



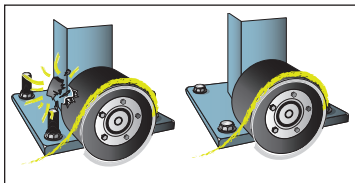
IMPROVED PERFORMANCE IN LARGE DIAMETER HOLES

- Superior performance to wedge anchor
- Higher loads in shallow embedments
- Closer edge/spacing distance than mechanical anchors
- More threads for better thread engagement and higher pullout resistance
- Durable induction-hardened tip

EASY INSTALLATION

- Easy 2-step installation, simply drill a pilot hole and drive
- Installs in less than half the time of a wedge anchor
- Efficient thread cutting
- Use standard drill bit sizes
- Single piece design—no nut and washer assembly
- Easily removed

APPLICATIONS

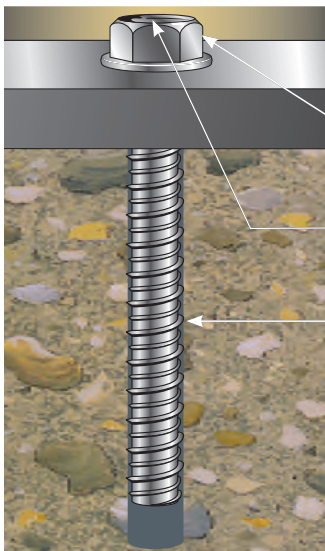


Racking, shelving and conveyors are just a few high volume applications ideal for Large Diameter Tapcon (LDT™). The ease and speed of installation of the LDT can reduce installation time to less than half the time of typical systems used today.

For installation speed, high performance and easy removability, LDT is the anchor of choice.

The LDT's finished head and lack of exposed threads virtually eliminates tire damage on fork lift trucks.

FEATURES



Easy Installation
Installs into concrete by hand or impact wrench

Anti-rotation Serrated Washer
— Prevents anchor back-out

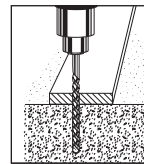
Extra Large Hex Washer Head
— With increased bearing surface

Length Identification Head Stamp
— For embedment inspection after installation

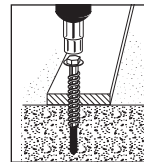
Hi-Lo Threads
— Cuts its own threads into concrete for greater pull-out resistance

INSTALLATION STEPS

Installation Steps for Concrete, Lightweight Concrete and Metal Deck

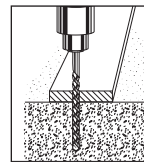


1. Using the proper size carbide bit (see chart) drill a pilot hole at least 1" deeper than anchor embedment.

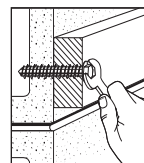


2. Using an **electric impact wrench**, or socket wrench (hand install) insert anchor into hole and tighten anchor until fully seated. (see chart for socket size) (do not over tighten).

Installation Steps for Hollow or Grout-Filled CMU (3/8" and 1/2" diameter)



1. Using a 5/16" (for 3/8" LDT) or 7/16" (for 1/2" LDT) carbide tipped bit, drill a pilot hole at least 1" deeper than anchor embedment.



2. Using a socket wrench insert anchor into hole and hand tighten anchor until fully seated. (9/16" socket for 3/8" and 3/4" socket for 1/2") (do not over tighten).

LDT's can be installed with an impact wrench in solid concrete only

Installation by hand—is easy, simply using a socket wrench

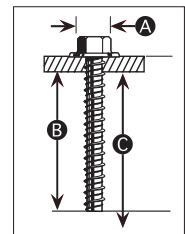


Installation by impact wrench—is recommended for faster installations or for high volume projects. Installation with impact wrench—is **not recommended for hollow block**.

SELECTION CHART

LDT SIZE	ANSI STANDARD DRILL BIT DIAM.	A ANCHOR HEAD (SOCKET SIZE) DIAM.	WASHER DIAM.	B MINIMUM EMBEDMENT	C HOLE DEPTH	USE IN		
						CONCRETE	CMU	
							HOLLOW	GROUT-FILLED
LDT 3/8"	5/16"	9/16"	13/16"	1-1/2"	2-1/2"	YES	YES	YES
LDT 1/2"	7/16"	3/4"	1"	2-1/2"	3-1/2"	YES	NO	YES
LDT 5/8"	1/2"	13/16"	1-3/16"	2-3/4"	3-3/4"	YES	NO	YES
LDT 3/4"	5/8"	15/16"	1-5/16"	3-1/4"	4-1/4"	YES	NO	YES

See page 75 for effective lengths and length indication code.

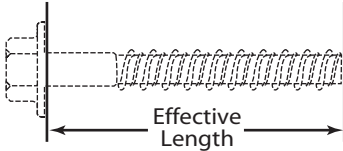


SELECTION CHART

LDT Carbon and Stainless Steel

Carbon Steel with Zinc Plating: Meets ASTM B695 and B633 specifications for zinc plating of $5\text{um} = .0002''$ thickness. This coating is well suited for non-corrosive interior environments.

Stainless Steel: Provides additional corrosion protection for outdoor applications.



PART NO. CARBON STEEL ZINC PLATED	PART NO. FOR 410 STAINLESS STEEL	ANCHOR DIA.		DRILL BIT DIA.		ANCHOR LENGTH		MAX. THICKNESS OF MATERIAL TO BE FASTENED		QTY/WT PER BOX qty / lbs.	QTY/WT PER MASTER CARTON qty / lbs.
		in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)		
LDT-3816	SLDT-3816	3/8	(9.5)	5/16	(7.9)	1-3/4	(44.5)	1/4	(6.4)	50 / 3.0	400 / 24.0
LDT-3824	SLDT-3824	3/8	(9.5)	5/16	(7.9)	2-1/2	(63.5)	1	(25.4)	50 / 4.5	400 / 34.0
LDT-3830	SLDT-3830	3/8	(9.5)	5/16	(7.9)	3	(76.2)	1-1/2	(38.1)	50 / 5.0	400 / 40.0
LDT-3840	SLDT-3840	3/8	(9.5)	5/16	(7.9)	4	(101.6)	2-1/2	(63.5)	50 / 6.5	400 / 52.0
LDT-3850	SLDT-3850	3/8	(9.5)	5/16	(7.9)	5	(127.0)	3-1/2	(89.0)	40 / 7.5	320 / 60.0
LDT-1230	SLDT-1230	1/2	(12.7)	7/16	(11.1)	3	(76.2)	1/2	(12.7)	25 / 4.5	150 / 27.0
LDT-1240	SLDT-1240	1/2	(12.7)	7/16	(11.1)	4	(101.6)	1-1/2	(38.1)	25 / 6.0	150 / 36.6
LDT-1250	SLDT-1250	1/2	(12.7)	7/16	(11.1)	5	(127.0)	2-1/2	(63.5)	25 / 7.6	150 / 45.6
LDT-1260	—	1/2	(12.7)	7/16	(11.1)	6	(152.4)	4	(101.6)	20 / 9.0	120 / 54.0
LDT-5830	—	5/8	(15.9)	1/2	(12.7)	3	(76.2)	1/4	(6.4)	10 / 3.5	100 / 35.0
LDT-5840	—	5/8	(15.9)	1/2	(12.7)	4	(101.6)	1-1/4	(31.8)	10 / 4.0	100 / 40.0
LDT-5850	—	5/8	(15.9)	1/2	(12.7)	5	(127.0)	2-1/4	(57.1)	10 / 4.7	100 / 47.0
LDT-5860	—	5/8	(15.9)	1/2	(12.7)	6	(152.4)	3-1/4	(82.6)	10 / 5.4	50 / 27.0
LDT-3444	—	3/4	(19.1)	5/8	(15.9)	4-1/2	(114.3)	1-1/4	(31.8)	10 / 7.4	50 / 37.0
LDT-3454	—	3/4	(19.1)	5/8	(15.9)	5-1/2	(139.7)	2-1/4	(57.1)	10 / 8.1	50 / 40.5
LDT-3462	—	3/4	(19.1)	5/8	(15.9)	6-1/4	(158.8)	3	(76.2)	10 / 9.1	30 / 27.3

* The stainless steel LDTs will have the number 4 stamped on the head next to the length indication code

DESIGN GUIDE

For proper selection of anchor diameters based upon pre-drilled holes in base plates and fixtures.

HOLE DIAMETER IN FIXTURE		SUGGESTED LDT DIAMETER	
in.	(mm)	in.	(mm)
7/16	(11.1)	3/8	(9.5)
1/2	(12.7)	3/8	(9.5)
9/16	(14.3)	1/2	(12.7)
5/8	(15.9)	1/2	(12.7)
3/4	(19.1)	5/8	(15.9)
7/8	(22.2)	3/4	(19.1)

LENGTH INDICATION CODE



Length Code letter located on top of head. Additional number 4 indicates 410 stainless steel

CODE	LENGTH OF ANCHOR	
	in.	(mm)
A	1-1/2 < 2	(38.1 < 50.8)
B	2 < 2-1/2	(50.8 < 63.5)
C	2-1/2 < 3	(63.5 < 76.2)
D	3 < 3-1/2	(76.2 < 88.9)
E	3-1/2 < 4	(88.9 < 101.6)
F	4 < 4-1/2	(101.6 < 114.3)
G	4-1/2 < 5	(114.3 < 127.0)
H	5 < 5-1/2	(127.0 < 139.7)
I	5-1/2 < 6	(139.7 < 152.4)
J	6 < 6-1/2	(152.4 < 165.1)

PERFORMANCE TABLE

LDT Anchors

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

ANCHOR DIAMETER		EMBEDMENT DEPTH	$f'_c = 2000 \text{ PSI (13.8 MPa)}$				$f'_c = 3000 \text{ PSI (20.7 MPa)}$				$f'_c = 4000 \text{ PSI (27.6 MPa)}$			
			TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
			lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	1-1/2 (38.1)	1,336	(5.9)	2,108	(9.4)	1,652	(7.3)	2,764	(12.3)	1,968	(8.8)	3,416	(15.2)
		2 (50.8)	1,492	(6.6)	3,036	(13.5)	2,024	(9.0)	3,228	(14.4)	2,552	(11.4)	3,420	(15.2)
		2-1/2 (63.5)	3,732	(16.6)	3,312	(14.7)	3,748	(16.7)	3,364	(15.0)	3,760	(16.7)	3,424	(15.2)
		3-1/2 (88.9)	5,396	(24.0)	3,312	(14.7)	6,624	(29.5)	3,368	(15.0)	7,852	(34.9)	3,428	(15.2)
1/2	(12.7)	2 (50.8)	3,580	(15.9)	5,644	(25.1)	3,908	(17.4)	6,512	(29.0)	4,236	(18.8)	7,380	(32.8)
		3-1/2 (88.9)	7,252	(32.3)	6,436	(28.6)	8,044	(35.8)	7,288	(32.4)	8,836	(39.3)	8,140	(36.2)
		4-1/2 (114.3)	10,176	(45.3)	7,384	(32.8)	10,332	(46.0)	7,968	(35.4)	10,488	(46.7)	8,552	(38.0)
5/8	(15.9)	2-3/4 (69.9)	5,276	(23.5)	8,656	(38.5)	6,560	(29.2)	11,064	(49.2)	7,844	(34.8)	13,476	(59.9)
		3-1/2 (88.9)	7,972	(35.5)	10,224	(45.5)	9,848	(43.8)	12,144	(54.0)	11,724	(52.2)	14,060	(62.5)
		4-1/2 (114.3)	11,568	(51.5)	12,316	(54.8)	13,432	(59.8)	13,580	(60.4)	16,892	(75.1)	14,840	(66.0)
3/4	(19.1)	3-1/4 (82.6)	6,876	(30.6)	7,140	(31.8)	9,756	(43.4)	10,728	(47.7)	12,636	(56.2)	14,316	(63.6)
		4-1/2 (114.3)	10,304	(45.8)	13,120	(58.4)	14,424	(64.2)	16,868	(75.0)	18,540	(82.5)	20,612	(91.7)
		5-1/2 (139.7)	13,048	(58.0)	17,908	(79.7)	18,156	(80.8)	21,718	(96.9)	23,268	(103.5)	25,652	(114.1)

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

PERFORMANCE TABLE

LDT Anchors

Ultimate Tension and Shear Values (lbs/kN) in Solid Concrete Carbon and Stainless Steel

ANCHOR DIAMETER in. (mm)		EMBEDMENT DEPTH in. (mm)		f'c = 2000 PSI (13.8 MPa)				f'c = 3000 PSI (20.7 MPa)				f'c = 4000 PSI (27.6 MPa)			
				TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
				lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	1-1/2	(38.1)	1,336	(5.9)	2,108	(9.4)	1,652	(7.3)	2,764	(12.3)	1,968	(8.8)	3,416	(15.2)
		2	(50.8)	1,492	(6.6)	3,036	(13.5)	2,024	(9.0)	3,228	(14.4)	2,552	(11.4)	3,420	(15.2)
		2-1/2	(63.5)	3,732	(16.6)	3,312	(14.7)	3,748	(16.7)	3,364	(15.0)	3,760	(16.7)	3,424	(15.2)
		3-1/2	(88.9)	5,396	(24.0)	3,312	(14.7)	6,624	(29.5)	3,368	(15.0)	7,852	(34.9)	3,428	(15.2)
1/2	(12.7)	2	(50.8)	3,580	(15.9)	5,644	(25.1)	3,908	(17.4)	6,512	(29.0)	4,236	(18.8)	7,380	(32.8)
		3-1/2	(88.9)	7,252	(32.3)	6,436	(28.6)	8,044	(35.8)	7,288	(32.4)	8,836	(39.3)	8,140	(36.2)
		4-1/2	(114.3)	10,176	(45.3)	7,384	(32.8)	10,332	(46.0)	7,968	(35.4)	10,488	(46.7)	8,552	(38.0)
5/8	(15.9)	2-3/4	(69.9)	5,276	(23.5)	8,656	(38.5)	6,560	(29.2)	11,064	(49.2)	7,844	(34.8)	13,476	(59.9)
		3-1/2	(88.9)	7,972	(35.5)	10,224	(45.5)	9,848	(43.8)	12,144	(54.0)	11,724	(52.2)	14,060	(62.5)
		4-1/2	(114.3)	11,568	(51.5)	12,316	(54.8)	13,432	(59.8)	13,580	(60.4)	16,892	(75.1)	14,840	(66.0)
3/4	(19.1)	3-1/4	(82.6)	6,876	(30.6)	7,140	(31.8)	9,756	(43.4)	10,728	(47.7)	12,636	(56.2)	14,316	(63.6)
		4-1/2	(114.3)	10,304	(45.8)	13,120	(58.4)	14,424	(64.2)	16,868	(75.0)	18,540	(82.5)	20,612	(91.7)
		5-1/2	(139.7)	13,048	(58.0)	17,908	(79.7)	18,156	(80.8)	21,718	(96.9)	23,268	(103.5)	25,652	(114.1)

PERFORMANCE TABLE

LDT Anchors

Recommended Edge & Spacing Requirements for Tension Loads* Carbon and Stainless Steel in Concrete

ANCHOR DIAMETER		EMBEDMENT DEPTH		EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		AT MIN. EDGE DISTANCE 1-3/4" (44mm)	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3" (76mm)
in.	(mm)	in.	(mm)	in.	(mm)		in.	(mm)	
3/8	(9.5)	1-1/2	(38.1)	2	(50.8)	70%	6	(152.4)	44%
		2	(50.8)	2	(50.8)	70%	6	(152.4)	44%
		2-1/2	(63.5)	3	(76.2)	70%	6	(152.4)	44%
		3-1/2	(88.9)	4	(101.6)	70%	6	(152.4)	44%
1/2	(12.7)	2	(50.8)	2-1/4	(57.2)	65%	8	(203.2)	27%
		3-1/2	(88.9)	3	(76.2)	65%	8	(203.2)	27%
		4-1/2	(114.3)	4	(101.6)	65%	8	(203.2)	27%
ANCHOR DIAMETER		EMBEDMENT DEPTH		EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		AT MIN. EDGE DISTANCE 1-3/4" (44mm)	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3.75" (95.2mm)
in.	(mm)	in.	(mm)	in.	(mm)		in.	(mm)	
5/8	(15.9)	2-3/4	(69.9)	6-1/4	(158.8)	65%	10	(254)	50%
		3-1/2	(88.9)	6-1/4	(158.8)	65%	10	(254)	50%
		4-1/2	(114.3)	6-1/4	(158.8)	65%	10	(254)	50%
ANCHOR DIAMETER		EMBEDMENT DEPTH		EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		AT MIN. EDGE DISTANCE 1-3/4" (44mm)	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 4.5" (114.3mm)
in.	(mm)	in.	(mm)	in.	(mm)		in.	(mm)	
3/4	(19.1)	3-1/2	(82.6)	7-1/2	(191)	65%	12	(305)	50%
		4-1/2	(114.3)	7-1/2	(191)	65%	12	(305)	50%
		5-1/2	(139.7)	7-1/2	(191)	65%	12	(305)	50%

* Edge and spacing distance shall be divided by .75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

For 5/8" and 3/4" LDT Anchors, the critical edge distance for these anchors is 10 times the anchor diameter. The edge distance of these anchors may be reduced to 1-3/4" provided a 0.65 load factor is used for tension loads, a 0.15 load factor is used for shear loads applied perpendicular to the edge, or a 0.60 load factor is used for shear loads applied parallel to the edge. Linear interpolation may be used for intermediate edge distances.



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



RED HEAD®

PERFORMANCE TABLE

LDT Anchors

Recommended Edge & Spacing Requirements for Shear Loads* Carbon and Stainless Steel in Concrete

ANCHOR DIAMETER		EMBEDMENT DEPTH		EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		AT MIN. EDGE DISTANCE 1-3/4" (44mm)	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD		LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3" (76mm)
in.	(mm)	in.	(mm)	in.	(mm)		in.	(mm)	
3/8	(9.5)	1-1/2	(38.1)	3	(76.2)	25%	6	(152.4)	57%
		2	(50.8)	4	(101.6)	25%	6	(152.4)	57%
		2-1/2	(63.5)	5	(127.0)	25%	6	(152.4)	57%
		3-1/2	(88.9)	5	(127.0)	25%	6	(152.4)	57%
1/2	(12.7)	2	(50.8)	5	(127.0)	25%	8	(203.2)	60%
		3-1/2	(88.9)	5	(127.0)	25%	8	(203.2)	60%
		4-1/2	(114.3)	5-1/2	(139.7)	25%	8	(203.2)	60%
5/8	(15.9)	2-3/4	(69.9)	6-1/4	(158.8)	15%**/60%***	10	(254)	75%
		3-1/2	(88.9)	6-1/4	(158.8)	15%**/60%***	10	(254)	75%
		4-1/2	(114.3)	6-1/4	(158.8)	15%**/60%***	10	(254)	75%
3/4	(19.1)	3-1/2	(82.6)	7-1/2	(191)	15%**/60%***	12	(305)	75%
		4-1/2	(114.3)	7-1/2	(191)	15%**/60%***	12	(305)	75%
		5-1/2	(139.7)	7-1/2	(191)	15%**/60%***	12	(305)	75%

* Edge and spacing distances shall be divided by .75 when anchors are placed in structural lightweight concrete. Linear interpolation may be used for intermediate spacing and edge distances.

** 15% = shear load applied perpendicular to the edge

*** 60% = shear load applied parallel to the edge

PERFORMANCE TABLE

LDT Anchors

Ultimate Tension Load (lbs/kN) in Concrete Block (anchors should be installed by hand in hollow block)

ANCHOR DIAMETER		EMBEDMENT DEPTH		HOLLOW CONCRETE BLOCK				GROUT FILLED CONCRETE BLOCK			
in.	(mm)	in.	(mm)	TENSION		SHEAR		TENSION		SHEAR	
				lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	1-1/2	(38.1)	916	(4.1)	3,176	(14.1)	1,592	(7.1)	3,900	(17.3)
1/2	(12.7)	2-1/2	(63.5)	N/A		N/A		5,924	(26.4)	6,680	(29.7)

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

PERFORMANCE TABLE

LDT Anchors

Allowable Tension and Shear (lbs/kN) in Concrete Block (anchors should be installed by hand in hollow block)

ANCHOR DIAMETER		EMBEDMENT DEPTH		HOLLOW CONCRETE BLOCK				GROUT FILLED CONCRETE BLOCK			
in.	(mm)	in.	(mm)	TENSION		SHEAR		TENSION		SHEAR	
				lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	1-1/2	(38.1)	229	(1.0)	794	(3.5)	398	(1.8)	975	(4.3)
1/2	(12.7)	2-1/2	(63.5)	N/A		N/A		1,481	(6.6)	1,670	(7.4)

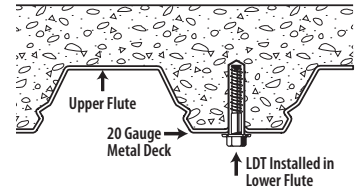
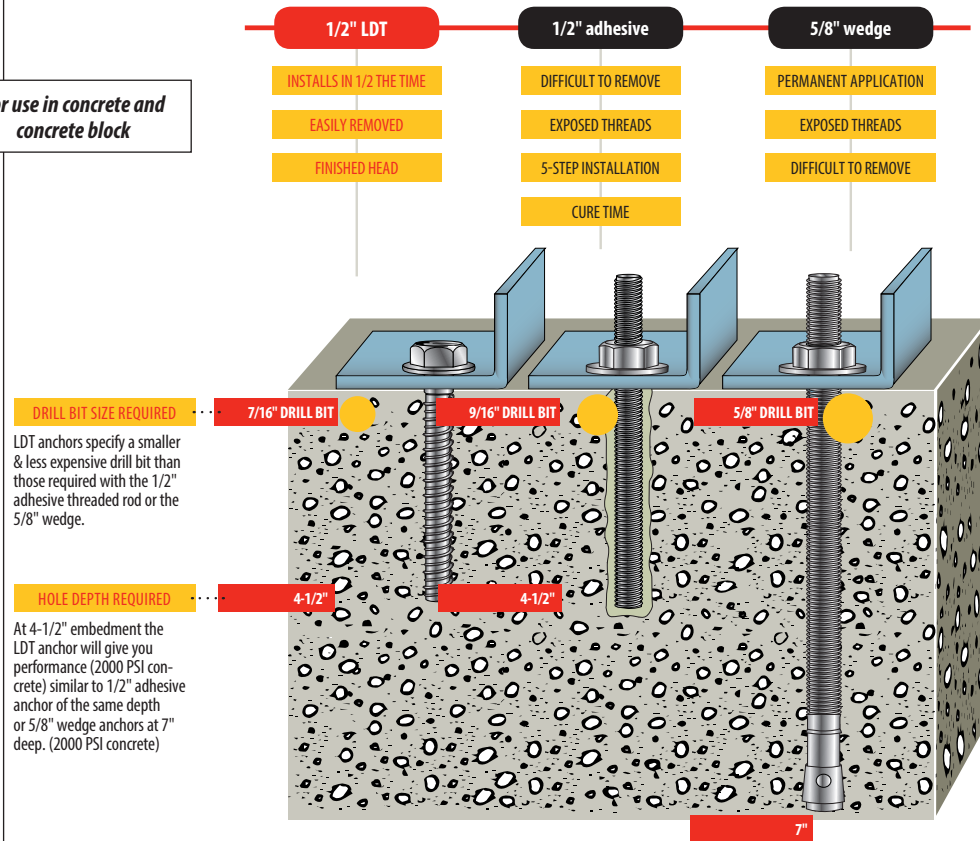
PERFORMANCE TABLE

LDT Anchors

Anchoring Overhead in 3,000 PSI Lightweight Concrete on Metal Deck

ANCHOR	DRILL HOLE DIAMETER		EMBEDMENT		3000PSI (20.7 MPa) CONCRETE				
					ULTIMATE TENSION LOAD			ALLOWABLE WORKING LOAD	
	in.	(mm)	lbs.	(kN)		lbs.	(kN)	lbs.	(kN)
3/8" LDT	5/16	(7.9)	1-1/2	(38.1)	Upper Flute	2,889	(12.9)	722	(3.2)
					Lower Flute	1,862	(8.3)	465	(2.1)

For use in concrete and concrete block



Multi-Set II® Drop-In Anchors

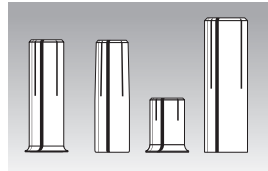
Internally Threaded Heavy- Duty Anchoring Systems

DESCRIPTION/SUGGESTED SPECIFICATIONS

Drop-In, Shell-Type Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE

Drop-In, shell-type anchors feature an internally threaded, all-steel shell with expansion cone insert and flush embedment lip. Anchors are manufactured from zinc-plated carbon steel, 18-8 stainless steel and 316 stainless steel.



Multi-Set II Drop-In Anchors

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

The minimum concrete thickness for an anchor is 1-1/2 times the embedment depth – or the embedment depth plus three times the anchor diameter – whichever is greater.

Anchors should be tested to ASTM E488 criteria.

ADVANTAGES

Short Drop-In (RX) Anchors

Ideal for Hollow-Core, Pre-Cast Plank and Post Tension Slabs



- Optimized for use in hollow-core, pre-cast plank and post-tension slabs
- Lip keeps anchor flush during installation
- Shallow drilling—fast installation



RX Drop-In
Anchor



RM Drop-In Anchor



- Lipped anchor body keeps anchor flush
- Easy installation
- Keeps all rods same length
- Easy inspection
- Available in carbon steel, 18-8 and 316 stainless steel

RL Drop-In Anchor



- Below surface setting for easy patch work

Coil Thread Anchor

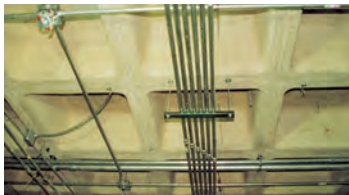


- Quick thread attachment—ideal for 1 sided forming
- Use coil rod on job
- 2 diameters (1/2" and 3/4")

APPLICATIONS



Pumps and heavy piping are common applications for larger diameter Multi-Set Drop-In Anchors.

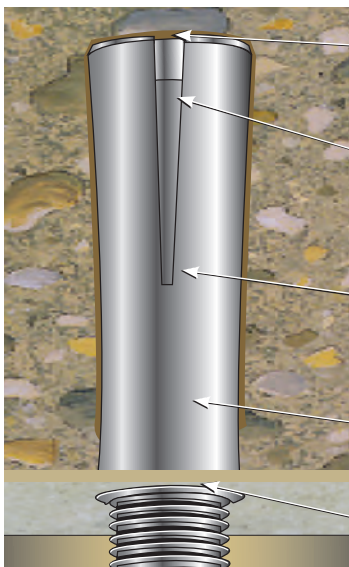


Cable tray and strut suspended from concrete ceilings are ideal Multi-Set applications. In post-tension or hollow-core slabs use the RX-38.



The Multi-Set Anchor is the standard for pipe-hanging. The RM version has a retainer lip to keep all anchors flush at the surface, keeping all your threaded rod the same length.

FEATURES



Expander Slots—allow for easy setting and superior performance

Cone Insert—that expands the anchor when driven with setting tool and hammer

Body—available in zinc-plated steel, 18-8 stainless steel, and 316 stainless steel

Easy Depth Inspection—keeps threaded rod drop lengths consistent

Retainer Lip—to keep anchor flush with surface

For use with threaded rods or headed bolts (supplied by contractor)

SELECTION CHART

Bits for RX-38 and RX-12 Short Drop-Ins

BIT NO.	DESCRIPTION	DRILLING DEPTH
DCX-138	3/8" Depth Charge Stop Drill (RX-38)	3/4"
DCX-112	1/2" Depth Charge Stop Drill (RX-12)	1"

APPROVALS/LISTINGS

Meets or exceeds U.S. Government G.S.A. Specification A-A-55614 Type 1 (Formerly GSA: FF-S-325 Group VIII)

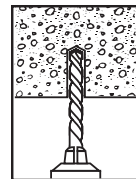
Multi-Set II Drop-in anchors may be covered by one or more of the following approvals/listings:

- Underwriters Laboratories
- Factory Mutual
- Caltrans

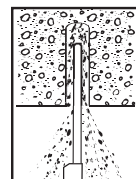
See Selection Chart next page.

INSTALLATION STEPS

To set anchor flush with surface:



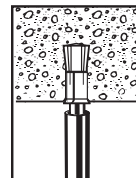
1. Drill hole to required embedment (see Table on page 82).



2. Clean hole with pressurized air.



3. Drive anchor flush with surface of concrete.



4. Expand anchor with setting tool provided (see chart on page 82). Anchor is properly expanded when shoulder of setting tool is flush with top of anchor.

DepthCharge™
Stop Drill

- Shoulder prevents over drilling. Less likely to hit reinforcing steel or post-tension cable in concrete



- No wasted time or energy drilling deeper than necessary
- Prevents anchor from dropping too far into hole below work surface



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 CHARTS

Multi-Set II Drop-In Anchors



PART NUMBER RTX-138

For use with RX-38 only.



PART NUMBER RTX-112

For use with RX-12 only.

USER TYPE / APPLICATION	BASE MATERIAL	DROP-IN ANCHOR TYPE	APPROVALS	PART NO.	SETTING TOOL PART NO.*	BOLT SIZE/ THREADS PER INCH	DRILL BIT DIAM.		THREAD DEPTH		EMBEDMENT MIN. HOLE DEPTH***		QTY/WT PER BOX qty / lbs.	QTY/ WT PER MASTER CARTON qty / lbs.
							in.	(mm)	in.	(mm)	in.	(mm)		
HVAC/Fire Sprinkler Plumber (Pipe-fitter)	Solid concrete/ lightweight fill deck	RM	Caltrans	RM-14	RT-114	1/4" / 20	3/8	(9.5)	3/8	(9.5)	1	(25.4)	100 / 2.6	1000 / 28
			UL, FM	RM-38	RT-138	3/8" / 16	1/2	(12.7)	1/2	(12.7)	1-5/8	(41.3)	50 / 3.4	500 / 36
			UL, FM Caltrans	RM-12	RT-112	1/2" / 13	5/8	(15.9)	3/4	(19.1)	2	(50.8)	50 / 5.8	400 / 49
			UL, FM	RM-58	RT-158	5/8" / 11	7/8	(22.2)	1	(25.4)	2-1/2	(63.5)	25 / 7.8	125 / 41
			UL, FM Caltrans	RM-34	RT-134	3/4" / 10	1	(25.4)	1-1/4	(31.8)	3-3/16	(81.0)	25 / 11.9	100 / 49
	Hollow-core pre-cast or Post tension	RX	N/A	RX-38	RTX-138	3/8" / 16	1/2	(12.7)	3/8	(9.5)	3/4	(19.1)	100 / 3.5	1000 / 36
			N/A	RX-12	RTX-112	1/2" / 13	5/8	(15.9)	1/2	(12.7)	1	(25.4)	50 / 3.0	500 / 31
	Solid concrete/ lightweight fill deck	SRM** 18-8 S.S.	N/A	SRM-14	RT-114	1/4" / 20	3/8	(9.5)	3/8	(9.5)	1	(25.4)	100 / 2.7	1000 / 28
			UL, FM	SRM-38	RT-138	3/8" / 16	1/2	(12.7)	1/2	(12.7)	1-5/8	(41.3)	50 / 3.4	500 / 36
			UL, FM	SRM-12	RT-112	1/2" / 13	5/8	(15.9)	3/4	(19.1)	2	(50.8)	50 / 6.0	400 / 50
			UL, FM	SRM-58	RT-158	5/8" / 11	7/8	(22.2)	1	(25.4)	2-1/2	(63.5)	25 / 7.9	125 / 42
			N/A	SRM-34	RT-134	3/4" / 10	1	(25.4)	1-1/4	(31.8)	3-3/16	(81.0)	25 / 12.0	100 / 50
	Solid concrete	SSRM** 316 S.S.	N/A	SSRM-12	RT-112	1/2" / 13	5/8	(15.9)	3/4	(19.1)	2	(50.8)	50 / 6.0	400 / 50
Concrete Contractor, General Contractor	Solid concrete	CL Coil Threaded	N/A	CL-12	RT-112	1/2" / 6	5/8	(15.9)	3/4	(19.1)	2	(50.8)	50 / 5.7	400 / 47
			N/A	CL-34	RT-134	3/4" / 4.5	1	(25.4)	1-1/4	(31.8)	3-3/16	(81.0)	25 / 11.9	100 / 49
Concrete Cutting/Sawing Contractor/Misc. Metal	Solid concrete/ lightweight fill deck	RL (w/o lip)	N/A	RL-14	RT-114	1/4" / 20	3/8	(9.5)	3/8	(9.5)	1	(25.4)	100 / 2.6	1000 / 28
			N/A	RL-38	RT-138	3/8" / 16	1/2	(12.7)	1/2	(12.7)	1-5/8	(41.3)	50 / 3.4	500 / 36
			N/A	RL-12	RT-112	1/2" / 13	5/8	(15.9)	3/4	(19.1)	2	(50.8)	50 / 5.8	400 / 49
			N/A	RL-58	RT-158	5/8" / 11	7/8	(22.2)	1	(25.4)	2-1/2	(63.5)	25 / 7.8	125 / 41
			N/A	RL-34	RT-134	3/4" / 10	1	(25.4)	1-1/4	(31.8)	3-3/16	(81.0)	25 / 11.9	100 / 49

* 1 setting tool per master carton. ** For continuous extreme low temperature, use stainless steel. *** Embedment is equal to overall length of Drop-In Anchor

RX-38 and RX-12 Short Drop-In Kits

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
RX-38	3/8" drop-in	RX-12	1/2" drop-in
RTX-138	Setting Tool for RX-38	RTX-112	Setting Tool for RX-12
DCX-138	Depth Charge Stop Drill – 1/2"	DCX-112	Depth Charge Stop Drill – 5/8"

PERFORMANCE TABLE

Multi-Set II Drop-In Anchors

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

BOLT DIAM. in. (mm)		DRILL BIT SIZE in. (mm)		MIN. EMBEDMENT DEPTH in. (mm)		ANCHOR TYPE	TENSION lbs. (kN)						SHEAR lbs. (kN)	
							f _c = 2000 PSI	(13.8 MPa)	f _c = 4000 PSI	(27.6 MPa)	f _c = 6000 PSI	(41.4 MPa)	f _c ≥ 2000 PSI	(13.8 MPa)
1/4	(6.4)	3/8	(9.5)	1	(25.4)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM 316 S.S.	1,680	(7.5)	2,360	(10.5)	2,980	(13.3)	1,080	(4.8)
3/8	(9.5)	1/2	(12.7)	1-5/8	(41.3)		2,980	(13.3)	3,800	(16.9)	6,240	(27.8)	3,160	(14.1)
1/2	(12.7)	5/8	(15.9)	2	(50.8)		3,300	(14.7)	5,840	(26.0)	8,300	(36.9)	4,580	(20.4)
5/8	(15.9)	7/8	(22.2)	2-1/2	(63.5)		5,500	(24.5)	8,640	(38.4)	11,020	(49.0)	7,440	(33.1)
3/4	(19.1)	1	(25.4)	3-3/16	(81.0)		8,280	(36.8)	9,480	(42.2)	12,260	(54.5)	10,480	(46.6)

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

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

PERFORMANCE TABLE

Multi-Set II Drop-In Anchors

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

BOLT DIAMETER in. (mm)		DRILL BIT SIZE in. (mm)		MINIMUM 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		SHEAR		TENSION		SHEAR	
							lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	1/2	(12.7)	1-5/8	(39.7)	RM, RL or CL-Carbon or SRM-18-8 S.S or SSRM-316 S.S.	2,035	(9.1)	1,895	(8.4)	3,340	(14.9)	4,420	(19.6)
1/2	(12.7)	5/8	(15.9)	2	(50.8)		2,740	(12.2)	2,750	(12.2)	3,200	(14.2)	4,940	(22.0)
5/8	(15.9)	7/8	(22.2)	2-1/2	(63.5)		4,240	(18.9)	4,465	(19.9)	5,960	(26.5)	5,840	(26.0)
3/4	(19.1)	1	(25.4)	3-3/16	(81.0)		5,330	(23.7)	6,290	(28.0)	8,180	(36.4)	9,120	(40.6)

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

PERFORMANCE TABLE

Multi-Set II Drop-In Anchors

Recommended Edge and Spacing Distance Requirements*

BOLT DIAMETER in. (mm)		DRILL BIT SIZE in. (mm)		EMBEDMENT DEPTH in. (mm)		ANCHOR TYPE	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD in. (mm)		MIN. EDGE DISTANCE AT WHICH LOAD FACTOR APPLIED =.80 FOR TENSION =.70 FOR SHEAR in. (mm)		SPACING REQUIRED TO OBTAIN MAX. WORKING LOAD in. (mm)		MIN. ALLOWABLE SPACING BETWEEN ANCHORS LOAD FACTOR APPLIED =.80 FOR TENSION =.55 FOR SHEAR in. (mm)	
1/4	(6.4)	3/8	(9.5)	1	(25.4)	RM, RL or CL-Carbon or SRM-18-8 S.S. or SSRM-316 S.S.	1-3/4	(44.5)	7/8	(22.2)	3-1/2	(88.9)	1-3/4	(44.5)
3/8	(9.5)	1/2	(12.7)	1-5/8	(41.3)		2-7/8	(73.0)	1-7/16	(36.5)	5-11/16	(144.5)	2-7/8	(73.0)
1/2	(12.7)	5/8	(15.9)	2	(50.8)		3-1/2	(88.9)	1-3/4	(44.5)	7	(177.8)	3-1/2	(88.9)
5/8	(15.9)	7/8	(22.2)	2-1/2	(63.5)		4-3/8	(111.1)	2-3/16	(55.6)	8-3/4	(222.3)	4-3/8	(111.1)
3/4	(19.1)	1	(25.4)	3-3/16	(81.0)		5-5/8	(142.9)	2-13/16	(71.4)	11-3/16	(284.2)	5-5/8	(142.9)

* 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.



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

Multi-Set II Drop-In Anchors

Ultimate Tension and Shear Values (lbs/kN) for RX-series (3/4" and 1" Embedment)*

BOLT DIAMETER in. (mm)		DRILL BIT SIZE in. (mm)		EMBEDMENT in. (mm)		2500 PSI (17.2 MPa) CONCRETE				4000 PSI (27.6 MPa) CONCRETE				HOLLOW CORE			
						TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/8	(9.5)	1/2	(12.7)	3/4	(19.1)	1,571	(7.0)	2,295	(10.2)	1,987	(8.8)	2,903	(12.9)	1,908	(8.5)	2,401	(10.7)
1/2	(12.7)	5/8	(15.9)	1	(25.4)	2,113	(9.4)	2,585	(11.5)	2,673	(11.9)	3,270	(14.5)	2,462	(11.0)	2,401	(10.7)

* The tabulated values are for RX anchors installed at a minimum of 12 diameters on center and minimum edge distance of 6 diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to 6 diameters spacing and 3 diameter edge distance provided the values are reduced 50 percent. Linear Interpolation may be used for intermediate spacings and edge margins.

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

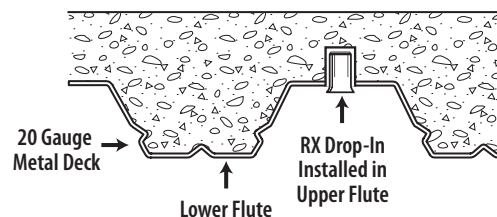
PERFORMANCE TABLE

Multi-Set II Drop-In Anchors

Anchoring Overhead in 3,000 PSI Lightweight Concrete on Metal Deck*

ANCHOR	DRILL HOLE DIAMETER in. (mm)		EMBEDMENT in. (mm)		3000 PSI (20.7 MPa) CONCRETE			
						ULTIMATE TENSION LOAD lbs. (kN)	ALLOWABLE WORKING LOAD lbs. (kN)	
RX-38 Drop-In	1/2	(12.7)	3/4	(19.1)	Upper Flute	1,410	(6.3)	353 (1.6)
					Lower Flute	1,206	(5.4)	301 (1.3)

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



Combined Tension and Shear Loading—for Multi-Set 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

Dynabolt® Sleeve Anchors

**Versatile,
Medium-Duty
Sleeve Anchor**



**Dynabolt
Hex Nut Sleeve Anchor**

APPROVALS/LISTINGS

Meets or exceeds U.S. Government G.S.A. Specification A-A-1922A
(Formerly GSA: FF-S-325 Group II, Type 3, Class 3)
Factory Mutual

DESCRIPTION/SUGGESTED SPECIFICATIONS

Sleeve Type Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE, GROUT-FILLED CONCRETE BLOCK, HOLLOW CONCRETE BLOCK AND BRICK



**Dynabolt
Masonry
Sleeve
Anchor**

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.

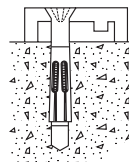
ADVANTAGES

- Anchor diameter equals hole diameter
- Available in hex head and three other head styles
- Available 1/4 - 3/4" diameter up to 6-1/4" length
- Zinc plated carbon steel and 304 stainless steel
- Provides full 360° hole contact over large area and reduces concrete stress
- Heavy-loading capacity
- Preassembled for faster, easier installations
- Dynabolt can be installed through object to be fastened
- Sleeve design improves holding power
- No pre-spotting of holes necessary

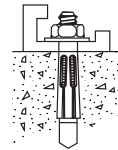
Available Head Styles

Full range of head style, corrosion protection, and sizes makes the Dynabolt Sleeve the right product for almost any application.

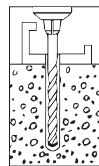
Phillips Flat Head
(FS)



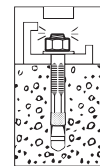
Hex Nut
(HN)



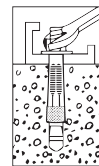
INSTALLATION STEPS



1. Use a carbide tipped drill bit whose diameter is equal to the anchor. See Chart to determine proper size bit for anchor used. Drill hole to any depth exceeding minimum embedment. Clean hole.



2. Insert assembled anchor through fixture and 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.

APPLICATIONS



Electrical junction boxes are common applications for the Dynabolt Sleeve anchor because it works well in solid concrete, concrete block, and brick. It is also available in several finished head styles.



The Dynabolt Sleeve anchor works well in hollow materials like brick and block. It is available in zinc-plated carbon steel and 304 stainless steel.

SELECTION CHART

Dynabolt Carbon Steel w/Zinc Plating

HEAD STYLE	PART NO.	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH*		BOLT DIA. / THREADS PER INCH	MIN. EMBEDMENT		MAX. THICKNESS OF MATERIAL TO BE FASTENED		QTY/WT PER BOX qty / lbs.	QTY/WT PER MASTER CTN qty / lbs.
			in.	(mm)		in.	(mm)	in.	(mm)		
Hex Nut	HN-1614	5/16"	1-1/2	(38.1)	1/4" / 20	1-1/4	(31.8)	1/4	(6.4)	100 / 4.0	1000 / 41
	HN-3817	3/8"	1-7/8	(47.6)	5/16" / 18	1-1/2	(38.1)	3/8	(9.5)	50 / 3.5	500 / 36
	HN-3830		3	(76.2)	5/16" / 18	1-1/2	(38.1)	1-1/2	(38.1)	50 / 4.9	400 / 40
	HN-1222	1/2"	2-1/4	(57.2)	3/8" / 16	1-7/8	(47.6)	3/8	(9.5)	25 / 3.3	250 / 34
	HN-1230		3	(76.2)	3/8" / 16	1-7/8	(47.6)	1-1/8	(28.6)	25 / 4.0	200 / 33
	HN-1240		4	(101.6)	3/8" / 16	1-7/8	(47.6)	2-1/8	(54.0)	25 / 5.3	200 / 44
	HN-5830	5/8"	3	(76.2)	1/2" / 13	2	(50.8)	1	(25.4)	25 / 7.0	150 / 46
	HN-5842		4-1/4	(108.0)	1/2" / 13	2	(50.8)	2-1/4	(57.2)	10 / 3.9	100 / 41
	HN-3440	3/4"	4	(101.6)	5/8" / 11	2-1/4	(57.2)	1-3/4	(44.5)	5 / 3.2	50 / 33
Phillips Flat Head	FS-3840	3/8" (head dia. .722)	4	(101.6)	5/16" / 18	1-1/2	(38.1)	2-1/2	(63.5)	50 / 5.3	400 / 44
	FS-3850		5	(127.0)	5/16" / 18	1-1/2	(38.1)	3-1/2	(88.9)	50 / 5.6	300 / 40
	FS-3860		6	(152.4)	5/16" / 18	1-1/2	(38.1)	4-1/2	(114.3)	50 / 8.0	300 / 48

* Phillips flat head uses a standard 80°–82° counter sink.

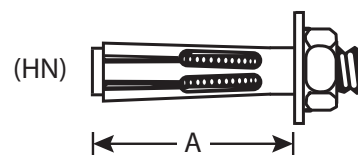
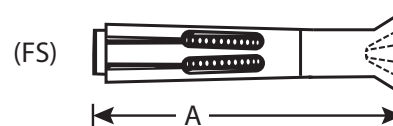


Typical Applications—Shelf ledgers, electrical boxes, conduit

Environment—Interior (non-corrosive)

Level of Corrosion—Low

*Effective Anchor Length



SELECTION CHART

Dynabolt 304 Stainless Steel

HEAD STYLE	PART NO.	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH		BOLT DIA. / THREADS PER INCH	MIN. EMBEDMENT		MAX. THICKNESS OF MATERIAL TO BE FASTENED		QTY/WT PER BOX qty / lbs.	QTY/WT PER MASTER CTN qty / lbs.
			in.	(mm)		in.	(mm)	in.	(mm)		
Hex Nut	SHN-3817	3/8"	1-7/8	(47.6)	5/16" / 18	1-1/2	(38.1)	3/8	(9.5)	50 / 3.5	500 / 36
	SHN-1222	1/2"	2-1/4	(57.2)	3/8" / 16	1-7/8	(47.6)	3/8	(9.5)	25 / 3.3	250 / 34
	SHN-1240		4	(101.6)	3/8" / 16	1-7/8	(47.6)	2-1/8	(54.0)	25 / 5.3	200 / 44
Phillips Flat Head	SFS-3826	3/8"	2-7/8	(73.0)	5/16" / 18	1-1/2	(38.1)	1-3/8	(34.9)	50 / 3.8	500 / 40
	SFS-3840		4	(101.6)	5/16" / 18	1-1/2	(38.1)	2-1/2	(63.5)	50 / 5.3	400 / 44

* Flat head uses a standard 80°–82° counter sink.

For continuous extreme low temperature applications, use stainless steel.



Typical Applications—Cladding and Brick Ties

Environment—Slight to moderate degree of pollution

Level of Corrosion—Medium

PERFORMANCE TABLE

Dynabolt Sleeve Anchors

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

ANCHOR DIAMETER in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		BOLT DIAMETER in. (mm)		MINIMUM EMBEDMENT DEPTH in. (mm)		ANCHOR TYPE (STEEL)	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)	3/16	(4.8)	1-1/8	(28.6)	Carbon or Stainless	1,200	(5.3)	1,215	(5.4)	1,325	(5.9)	1,215	(5.4)	1,450	(6.4)	1,215	(5.4)
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)	3,250	(14.5)	3,140	(14.0)	4,000	(17.8)	4,400	(19.6)	4,500	(20.0)
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)	6,060	(27.0)	11,600	(51.6)	8,900	(39.6)	13,100	(58.3)

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

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

PERFORMANCE TABLE

Dynabolt Sleeve Anchors

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

ANCHOR DIAMETER in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		BOLT DIAMETER in. (mm)		MINIMUM EMBEDMENT DEPTH in. (mm)		ANCHOR TYPE (STEEL)	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)	3/16	(4.8)	1-1/8	(28.6)	Carbon or Stainless	870	(3.9)	730	(3.2)	1,066	(4.7)	894	(4.0)
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)	25	(33.9)	3/8	(9.5)	1-7/8	(47.6)		2,600	(11.6)	2,400	(10.7)	3,160	(14.1)	2,400	(10.7)
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)

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

PERFORMANCE TABLE

Dynabolt Sleeve Anchors

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

ANCHOR DIAMETER in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		BOLT DIAMETER 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)	1,215	(5.4)	1,120	(5.0)	1,215	(5.4)	1,120	(5.0)	1,215	(5.4)	1,120	(5.0)	1,215	(5.4)
								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	N/A		N/A		2,200	(9.9)	3,500	(15.6)	N/A		N/A		2,200	(9.9)	3,500	(15.6)
								Stainless	N/A		N/A		2,100	(9.3)	3,500	(15.6)	N/A		N/A		2,100	(9.3)	3,500	(15.6)
5/8	(15.9)	55	(74.6)	1/2	(12.7)	2	(50.8)	Carbon	N/A		N/A		3,080	(13.7)	6,440	(28.6)	N/A		N/A		3,080	(13.7)	6,440	(28.6)
								Stainless	N/A		N/A		3,080	(13.7)	6,440	(28.6)	N/A		N/A		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	N/A		N/A		4,200	(18.7)	10,200	(45.4)	N/A		N/A		4,200	(18.7)	10,200	(45.4)

* To calculate the Allowable Load of the anchor, divide the Ultimate Load by 4. The tabulated values are for anchors installed in a minimum of 12 diameters on center and a minimum edge distance of 6 diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to 6 diameter spacing and 3 diameter edge distance, provided the values are reduced 50 percent. Linear interpolation may be used for intermediate spacings and edge distances.

Note: N/A is defined as Not Advisable.

Combined Tension and Shear 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

Tapcon® Concrete and Masonry Anchors

THE ORIGINAL
Tapcon

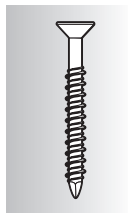


Blue Climaseal™ 410 Stainless Steel

DESCRIPTION/SUGGESTED SPECIFICATIONS

Tapcon Anchors —

SPECIFIED FOR ANCHORAGE INTO CONCRETE, BRICK OR BLOCK



The “original masonry” anchor that cuts its own threads into concrete, brick, or block. Maximum performance is achieved because the Tapcon Anchor, the Condrive Installation Tool, and the carbide-tipped Tapcon Drill Bits are designed to work as a system. It is essential to use the Condrive tool and the correct drill bit to assure consistent anchor performance.

ADVANTAGES

- Works in all masonry base materials.
- Fast and easy—3 anchors per minute.
- No hole spotting or inserts required.
- Removable.
- Slotted hex and phillips flat head styles.
- Extended corrosion protection—Blue Climaseal™.
- Available in 410 Stainless Steel.
- ACQ treated wood compatible.

Tapcon Anchors



Blue Climaseal™ provides extended corrosion protection

Available in 410 Stainless Steel
(see photo on left)

Hex Head style on Tapcon Anchors is available for majority of fixture anchoring needs

Phillips Flat Head style is available when flush seating is necessary in countersink applications

Advanced Threadform cuts into concrete and masonry for reduced installation torque and increased pullout performance

Lengths of Tapcon Anchors range from 1-1/4" to 4" in 3/16" and up to 6" in 1/4" diameters.

Nail-Type Point guides the anchor into the pre-drilled hole. Excellent for wood to concrete applications

Tapcon® is a registered trademark of Buildex, a division of Illinois Tool Works, Inc.

CORROSION RESISTANCE

Kesternich Results (DIN 40018 2.0L)

30 Cycles - 10% or less rust

Salt Spray Results (ASTM B117)

720 Hrs - 10% or less rust

APPLICATIONS



The Tapcon Anchor is especially well suited for window and door frames because it performs well in block, is available in a flat head style, and is fast to install.

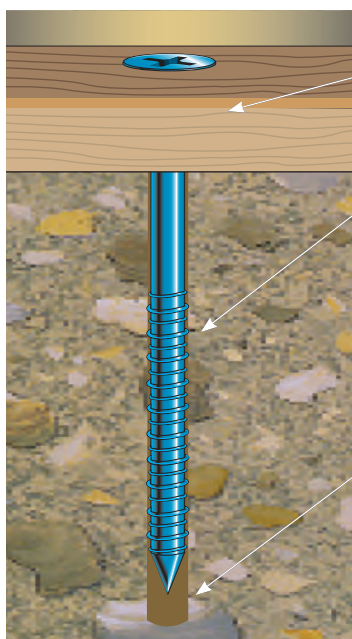


Many horizontal or "wall" applications are attached with Tapcon Anchor because it is removable and works well in block and brick.



The picture shows the Condrive Installation Kit in action. The kit makes for fast and easy change over from drill bit to driver and controls the driving torque to prevent thread stripping and head snapping in hard base materials.

FEATURES



Fixture Thickness—determine the fixture thickness to be anchored

Anchor Embedment—with a minimum recommended embedment of 1", the correct Tapcon anchor choice can be made. Hole depth must be a minimum 1/4" deeper than the anchor embedment to allow for displaced material

Hole Diameter—proper hole diameter is very important to insure consistent performance and maximum pullout strength. 3/16" anchors require 5/32" diameter Tapcon bits, and 1/4" anchors require 3/16" diameter Tapcon bits

APPROVAL/LISTINGS

Blue Climaseal™

ICC Evaluation Service, Inc. — ESR-1671

ICC Evaluation Service, Inc. — ESR-2202

Miami-Dade County

Florida Building Code

410 Stainless Steel

Miami-Dade County

Florida Building Code

For the most current approvals/listings visit: www.itwredhead.com

INSTALLATION STEPS

Read installation instructions before using!



WARNING:

If there are any questions concerning proper installation, applications or appropriate use of this product, please call our Technical Services Department at 1-800-848-5611. Failure to follow these instructions can result in serious personal injury.

1. **Select proper fastener – diameter / head style / length.**
 - a) Use selection chart to choose proper length.
2. **Drill Hole – use selection chart to determine drill bit length and depth of hole.**
 - a) Use 5/32" diameter Tapcon bit for 3/16" dia. Tapcon Anchor. Use 3/16" diameter Tapcon bit for 1/4" dia. Tapcon Anchor.
 - b) Drill hole minimum 1/4" deeper than Tapcon Anchor to be embedded.
Minimum anchor embedment: 1"
Maximum anchor embedment: 1 3/4"
3. **Drive Anchor.**



WARNING:

Failure to wear safety glasses with side shields can result in serious personal injury. Always wear ANSI compliant eye protection (ANSI Z87.1-2003).



WARNING:

Using the wrong size drill bit will affect performance values and may cause failure.

Head Styles

3/16" diameter has a 1/4" slotted hex washer head (HWH)

1/4" diameter has a 5/16" slotted hex washer head (HWH)



3/16" diameter uses a #2 phillips flat head (PFH)

1/4" diameter uses a #3 phillips flat head (PFH)



SELECTION CHART

Tapcon® Anchors with Blue Climaseal

Diameter 3/16" and 1/4"
Point Type Nail

Thread Form Advanced Threadform Technology™
Finish Blue Climaseal™

All boxes of Tapcon anchors come packaged with matching carbide-tipped bit. Tapcon is packaged 100 pieces per box and 500 pieces per master carton except 3205407 and 3203407 (400 in master carton).

FIXTURE THICKNESS INCHES	RECOMMENDED TAPCON LENGTH		PART NO. 3/16" HEX HEAD	PART NO. 1/4" HEX HEAD	PART NO. 3/16" FLAT HEAD	PART NO. 1/4" FLAT HEAD	BIT LENGTH		STRAIGHT SHANK BITS FOR 3/16" TAPCON PART NO.	STRAIGHT SHANK BITS FOR 1/4" TAPCON PART NO.
	in.	(mm)					in.	(mm)		
0" – 1/4"	1-1/4	(31.8)	3139407	3153407	3169407	3183407	3-1/2	(88.9)	–	3098910
1/4" – 3/4"	1-3/4	(44.5)	3141407	3155407	3171407	3185407	3-1/2	(88.9)	–	3098910
3/4" – 1-1/4"	2-1/4	(57.2)	3143407	3157407	3173407	3187407	4-1/2	(114.3)	3096910	3099910
1-1/4" – 1-3/4"	2-3/4	(69.9)	3145407	3159407	3175407	3189407	4-1/2	(114.3)	3096910	3099910
1-3/4" – 2-1/4"	3-1/4	(82.6)	3147407	3161407	3177407	3191407	5-1/2	(139.7)	3097910	3100910
2-1/4" – 2-3/4"	3-3/4	(95.3)	–	3163407	–	3193407	5-1/2	(139.7)	3097910	3100910
2-1/2" – 3"	4	(101.6)	–	3165407	–	3195407	5-1/2	(139.7)	3097910	3100910
3-1/2" – 4"	5	(127.0)	–	3167407	–	3197407	6-1/2	(165.1)	–	–
4-1/2" – 5"	6	(152.4)	–	3205407	–	3203407	7-1/2	(190.5)	–	3206910

Additional Tapcon bits are available 10 per tube.

SELECTION CHART

Tapcon® 410 SS Anchor

Diameter 3/16" and 1/4" Thread Form Original Notched Hi-Lo™
Point Type Nail Finish 410 Stainless Steel with Silver Climashield™
All boxes of Tapcon anchors come packaged with matching carbide-tipped bit. Tapcon is packaged 100 pieces per box and 500 pieces per master carton except 3461907 (400 in master carton).

FIXTURE THICKNESS INCHES	RECOMMENDED TAPCON LENGTH		PART NO. 1/4" HEX HEAD	PART NO. 3/16" FLAT HEAD	PART NO. 1/4" FLAT HEAD	BIT LENGTH		STRAIGHT SHANK BITS FOR 3/16" TAPCON PART NO.	STRAIGHT SHANK BITS FOR 1/4" TAPCON PART NO.
	in.	(mm)				in.	(mm)		
0" – 1/4"	1-1/4	(31.8)	3367907	–	3373907	3-1/2	(88.9)	–	3098910
1/4" – 3/4"	1-3/4	(44.5)	3368907	3418907	3374907	3-1/2	(88.9)	–	3098910
3/4" – 1-1/4"	2-1/4	(57.2)	3369907	3419907	3375907	4-1/2	(114.3)	3096910	3099910
1-1/4" – 1-3/4"	2-3/4	(69.9)	3370907	3420907	3376907	4-1/2	(114.3)	3096910	3099910
1-3/4" – 2-1/4"	3-1/4	(82.6)	3371907	–	3377907	5-1/2	(139.7)	3097910	3100910
2-1/4" – 2-3/4"	3-3/4	(95.3)	3372907	–	3378907	5-1/2	(139.7)	3097910	3100910
2-1/2" – 3"	4	(101.6)	–	–	–	5-1/2	(139.7)	–	3100910
3-1/2" – 4"	5	(127.0)	3460907	–	–	6-1/2	(165.1)	–	–
4-1/2" – 5"	6	(152.4)	–	–	–	7-1/2	(190.5)	–	–

Tapcon® SDS Bits

PART NUMBER	DESCRIPTION
3311910	7" (SDS Rotohammer Bits for use with 3/16" Tapcon)
7901060	5" (SDS Rotohammer Bits for use with 1/4" Tapcon)

All SDS bits are sold individually.

PERFORMANCE TABLE

Tapcon® Anchors

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

ANCHOR DIA.		MIN. DEPTH OF EMBEDMENT		f'c = 2000 PSI (13.8 MPa)				f'c = 3000 PSI (20.7 MPa)				f'c = 4000 PSI (27.6 MPa)				f'c = 5000 PSI (34.5 MPa)			
				TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/16	(4.8)	1	(25.4)	600	(2.7)	720	(3.2)	625	(2.8)	720	(3.2)	650	(2.9)	720	(3.2)	800	(3.6)	860	(3.8)
		1-1/4	(31.8)	845	(3.7)	720	(3.2)	858	(3.8)	720	(3.2)	870	(3.9)	720	(3.2)	1,010	(4.5)	860	(3.8)
		1-1/2	(38.1)	1,090	(4.8)	860	(3.8)	1,090	(4.8)	860	(3.8)	1,090	(4.8)	860	(3.8)	1,220	(5.4)	860	(3.8)
		1-3/4	(44.5)	1,450	(6.5)	870	(3.9)	1,455	(6.5)	870	(3.9)	1,460	(6.5)	990	(4.4)	1,730	(7.7)	990	(4.4)
1/4	(6.4)	1	(25.4)	750	(3.3)	900	(4.0)	775	(3.4)	900	(4.0)	800	(3.6)	1,360	(6.1)	950	(4.2)	1,440	(6.4)
		1-1/4	(31.8)	1,050	(4.7)	900	(4.0)	1,160	(5.2)	900	(4.0)	1,270	(5.6)	1,360	(6.1)	1,515	(6.7)	1,440	(6.4)
		1-1/2	(38.1)	1,380	(6.1)	1,200	(5.3)	1,600	(7.2)	1,200	(5.3)	1,820	(8.1)	1,380	(6.1)	2,170	(9.7)	1,670	(7.4)
		1-3/4	(44.5)	2,020	(9.0)	1,670	(7.4)	2,200	(9.8)	1,670	(7.4)	2,380	(10.6)	1,670	(7.4)	2,770	(12.3)	1,670	(7.4)

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

PERFORMANCE TABLE

Tapcon Anchors

Ultimate Tension and Shear Values (lbs/kN) in Hollow Block

ANCHOR DIAMETER		ANCHOR EMBEDMENT		LIGHTWEIGHT BLOCK				MEDIUM WEIGHT BLOCK			
				TENSION		SHEAR		TENSION		SHEAR	
in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
3/16	(4.8)	1	(25.4)	220	(1.0)	400	(1.8)	340	(1.5)	730	(3.2)
1/4	(6.4)	1	(25.4)	250	(1.1)	620	(2.8)	500	(2.2)	1,000	(4.4)

Safe working loads for single installation under static loading should not exceed 25% of the ultimate load capacity.

NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

PERFORMANCE TABLE

Tapcon® Anchors

Allowable Edge and Spacing Distances

PARAMETER	ANCHOR DIAMETER		NORMAL WEIGHT CONCRETE			CONCRETE MASONRY UNITS (CMU)		
			FULL CAPACITY (Critical Distance Inches)	REDUCED CAPACITY (Minimal Distance Inches)	LOAD REDUCTION FACTOR	FULL CAPACITY (Critical Distance Inches)	REDUCED CAPACITY (Minimal Distance Inches)	LOAD REDUCTION FACTOR
Spacing Between Anchors - Tension	3/16	(4.8)	3	1-1/2	0.73	3	1-1/2	1.00
	1/4	(6.4)	4	2	0.66	4	2	0.84
Spacing Between Anchors - Shear	3/16	(4.8)	3	1-1/2	0.83	3	1-1/2	1.00
	1/4	(6.4)	4	2	0.82	4	2	0.81
Edge Distance - Tension	3/16	(4.8)	1-7/8	1	0.83	4	2	0.91
	1/4	(6.4)	2-1/2	1-1/4	0.82	4	2	0.88
Edge Distance - Shear	3/16	(4.8)	2-1/4	1-1/8	0.70	4	2	0.93
	1/4	(6.4)	3	1-1/2	0.59	4	2	0.80

For SI: 1 inch = 25.4 mm

Tapcon® Condrive Tool Kit

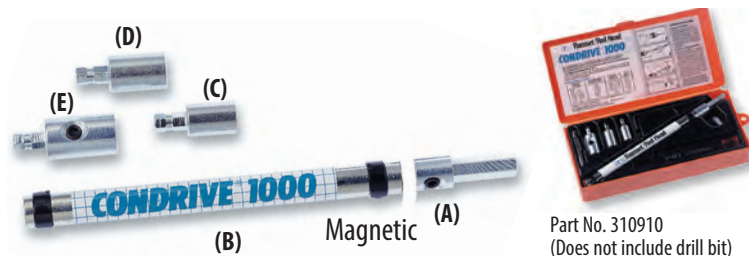
DESCRIPTION/SUGGESTED SPECIFICATIONS

Condrive Installation Tool— SPECIFIED FOR ANCHORAGE INTO CONCRETE, BRICK OR BLOCK

The key to Tapcon's fast and easy installation is the multi-purpose Condrive Installation Tool. The drive sleeve, along with the hex head and phillips sockets provide the installer with the flexibility necessary for the complete variety of Tapcon applications (tool does not include drill bit).

Condrive® Tool - A multi-purpose tool designed for installation of Tapcon hex head and Phillips flat head anchors up to 3-3/4" long. If driving hex head Tapcon, driver will automatically disengage. The Condrive Tool has a reusable plastic case.

Condrive Tools are designed to specifically install Tapcon Anchors and to fit standard hammer drills.



APPLICATIONS



The picture shows the Condrive Installation Kit in action. The kit makes for fast and easy change over from drill bit to driver and controls the driving torque to prevent thread stripping and head snapping in hard base materials.

ADVANTAGES

- Fast change from drilling to driving
- Eliminates need to change out chucks and bits
- Eliminates need for two tools
- Special nut driver is recessed for torque control to reduce head breakage

Condrive Tool Kit Parts (sold only as a kit)

A	Drill Adapter
B	Sleeve
C	3/16" Socket
D	1/4" Socket
E	Phillips Socket

Tapcon® Maxi-Set Anchors



White UltraShield UltraShield

APPLICATIONS



Shutters - protective and decorative

Screened porch and pool enclosures.

Various sheet metal flashings.

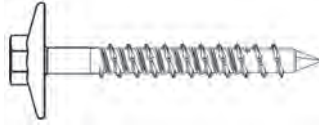


Decorative wrought iron.

Wood nailers and plywood attachment.

DESCRIPTION/SUGGESTED SPECIFICATIONS

FOR TAPCON APPLICATIONS THAT REQUIRE MORE ANCHOR BEARING SURFACE.



ADVANTAGES

- Same reliable performance and speed of installation as regular Tapcon.
- UltraShield™ and White UltraShield™ long-life finish deliver excellent corrosion resistance.
- Large 5/8" diameter flange provides more bearing surface and increases pullover resistance. High 5/16" hex head adds driving stability.

CORROSION RESISTANCE

Salt Spray Test (ASTM B117)

UltraShield

White UltraShield

1100 Hrs 10% or less red rust

1500 Hrs 10% or less red rust

APPROVAL/LISTINGS

ICC Evaluation Service, Inc. – #ESR-1671

Miami-Dade County

For the most current approvals/listings visit: www.itwredhead.com

INSTALLATION STEPS

Read installation instructions before using!



WARNING:

If there are any questions concerning proper installation, applications or appropriate use of this product, please call our Technical Services Department at 1-800-848-5611. Failure to follow these instructions can result in serious personal injury.

1. Select proper fastener – diameter / head style / length.
 - a) Use selection chart to choose proper length.
2. Drill Hole – use selection chart to determine drill bit length and depth of hole.
 - a) Use 3/16" diameter Tapcon bit.
 - b) Drill hole minimum 1/4" deeper than Tapcon Anchor to be embedded.

Minimum anchor embedment: 1"

Maximum anchor embedment: 1 3/4"
3. Drive anchor using 5/16" socket.



WARNING:

Failure to wear safety glasses with side shields can result in serious personal injury. Always wear ANSI compliant eye protection (ANSI Z87.1-2003).



WARNING:

Using the wrong size drill bit will affect performance values and may cause failure.

SELECTION CHART

Tapcon® Maxi-Set Anchors

Diameter 1/4" Thread Form Advanced Threadform Technology™
Point Type Nail Finish UltraShield™ or *White UltraShield™
Head Style 5/16" across flats hex with 5/8" diameter flange.

RECOMMENDED TAPCON LENGTH		PART NO. 1/4" HEX HEAD	FINISH	BIT LENGTH		STRAIGHT SHANK BITS FOR 1/4" TAPCON PART NO.
in.	(mm)			in.	(mm)	
1-3/4	(44.5)	3294000	Ultra Shield	3-1/2	(88.9)	3098910
1-3/4	(44.5)	3383100	White Ultra Shield	3-1/2	(88.9)	3098910
2-1/4	(57.2)	3384100	White Ultra Shield	4-1/2	(114.3)	3099910
3-1/4	(82.6)	3409100	White Ultra Shield	5-1/2	(139.7)	3100910

Maxi-Sets are packed 1,000 pieces per master carton except 3409100 is packed 750 pieces.

SELECTION CHART

Tapcon SDS Bits

PART NO.	DESCRIPTION
3311910	7" (SDS Rotohammer Bits for use with 3/16" Tapcon)
7901060	5" (SDS Rotohammer Bits for use with 1/4" Tapcon)

PERFORMANCE TABLE

Tapcon® Maxi-Set Anchors

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

ANCHOR DIAMETER in. (mm)		MIN. DEPTH OF EMBEDMENT in. (mm)		f'c = 2000 PSI (13.8 MPa)				f'c = 3000 PSI (20.7 MPa)				f'c = 4000 PSI (27.6 MPa)				f'c = 5000 PSI (34.5 MPa)			
				TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
				lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
1/4	(6.4)	1	(25.4)	750	(3.3)	900	(4.0)	775	(3.4)	900	(4.0)	800	(3.6)	1,360	(6.1)	950	(4.2)	1,440	(6.4)
		1-1/4	(31.8)	1,050	(4.7)	900	(4.0)	1,160	(5.2)	900	(4.0)	1,270	(5.6)	1,360	(6.1)	1,515	(6.7)	1,440	(6.4)
		1-1/2	(38.1)	1,380	(6.1)	1,200	(5.3)	1,600	(7.2)	1,200	(5.3)	1,820	(8.1)	1,380	(6.1)	2,170	(9.7)	1,670	(7.4)
		1-3/4	(44.5)	2,020	(9.0)	1,670	(7.4)	2,200	(9.8)	1,670	(7.4)	2,380	(10.6)	1,670	(7.4)	2,770	(12.3)	1,670	(7.4)

Allowable working loads for the single installation under static loading should not exceed 25% capacity of the Ultimate Load. To calculate the Allowable Load, divide the Ultimate Load by 4.

PERFORMANCE TABLE

Tapcon® Maxi-Set Anchors

Ultimate Tension and Shear Values (lbs/kN) in Hollow Block

ANCHOR DIAMETER in. (mm)		ANCHOR EMBEDMENT in. (mm)		LIGHTWEIGHT BLOCK				MEDIUM WEIGHT BLOCK			
				TENSION		SHEAR		TENSION		SHEAR	
				lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
1/4	(6.4)	1	(25.4)	250	(1.1)	620	(2.8)	500	(2.2)	1,000	(4.4)

Allowable working loads for the single installation under static loading should not exceed 25% capacity of the Ultimate Load. To calculate the Allowable Load, divide the Ultimate Load by 4.

NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

PERFORMANCE TABLE

Tapcon® Maxi-Set Anchors

Allowable Edge and Spacing Distances

PARAMETER	ANCHOR DIAMETER in. (mm)		NORMAL WEIGHT CONCRETE			CONCRETE MASONRY UNITS (CMU)		
			FULL CAPACITY (Critical Distance Inches)	REDUCED CAPACITY (Minimal Distance Inches)	LOAD REDUCTION FACTOR	FULL CAPACITY (Critical Distance Inches)	REDUCED CAPACITY (Minimal Distance Inches)	LOAD REDUCTION FACTOR
Spacing Between Anchors - Tension	1/4	(6.4)	4	2	0.66	4	2	0.84
Spacing Between Anchors - Shear	1/4	(6.4)	4	2	0.82	4	2	0.81
Edge Distance - Tension	1/4	(6.4)	2-1/2	1-1/4	0.82	4	2	0.88
Edge Distance - Shear	1/4	(6.4)	3	1-1/2	0.59	4	2	0.80

For SI: 1 inch = 25.4 mm



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



Tapcon® SCOTS Anchors



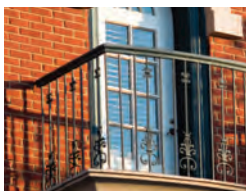
APPLICATIONS



Shutters - protective and decorative



Screened porch and pool enclosures
Aluminum fixtures
Railings



Metal roofing
Flexible flashings

DESCRIPTION/SUGGESTED SPECIFICATIONS

PREMIUM CONCRETE ANCHOR THAT COMBINES THE CORROSION PROTECTION OF STAINLESS STEEL WITH THE PERFORMANCE OF TAPCON ANCHORS.



ADVANTAGES

- 300 Series Stainless Steel head and Carbon Steel body.
- Integral washer design provides more bearing surface.
- Rubber EPDM sealing washer "locks-out" moisture from building interior.
- Head paint available in white or bronze (extra charge).
- Delivers the same holding performance as Tapcon anchors with Blue Climaseal™.
- Reduces replacement of "weathered" fasteners.

CORROSION RESISTANCE

Kesternich Results (DIN 50018, 2.0L)

Climaseal™

30 Cycles - 10% or less red rust

APPROVAL/LISTINGS

ICC Evaluation Service, Inc. – ESR-1671

Miami-Dade County – #12-0816.06

For the most current approvals/listings visit: www.itwredhead.com

INSTALLATION STEPS

Read installation instructions before using!



WARNING:

If there are any questions concerning proper installation, applications or appropriate use of this product, please call our Technical Services Department at 1-800-848-5611. Failure to follow these instructions can result in serious personal injury.

1. Select proper fastener – diameter / head style / length.
 - a) Use selection chart to choose proper length.
2. Drill Hole – use selection chart to determine drill bit length and depth of hole.
 - a) Use 3/16" diameter Tapcon bit.
 - b) Drill hole minimum 1/4" deeper than Tapcon Anchor to be embedded.
 - Minimum anchor embedment: 1"
 - Maximum anchor embedment: 1 3/4"
3. Drive anchor using 5/16" socket.



WARNING:

Failure to wear safety glasses with side shields can result in serious personal injury. Always wear ANSI compliant eye protection (ANSI Z87.1-2003).



WARNING:

Using the wrong size drill bit will affect performance values and may cause failure.

SELECTION CHART

Tapcon®
SCOTS Anchors

Diameter 1/4" Thread Form Advanced Threadform Technology™
Point Type Nail Finish Silver Climaseal™
Head Style 5/16" HWH (300 Series Stainless)

RECOMMENDED TAPCON LENGTH		PART NO. 1/4" HEX HEAD	BIT LENGTH		PART NO. STRAIGHT SHANK BITS FOR 1/4" TAPCON
in.	(mm)		in.	(mm)	
1-3/4	(44.5)	3358407	3-1/2	(88.9)	3098910

SCOTS are packed 1,000 pieces per master, 100 pieces per inner.

SELECTION CHART

Tapcon®
SDS Bits

PART NO.	DESCRIPTION
3311910	7" (SDS Rotohammer Bits for use with 3/16" Tapcon)
7901060	5" (SDS Rotohammer Bits for use with 1/4" Tapcon)

PERFORMANCE TABLE

Tapcon®
SCOTS Anchors

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

ANCHOR DIAMETER in. (mm)		MIN. DEPTH OF EMBEDMENT in. (mm)		f'c = 2000 PSI (13.8 MPa)				f'c = 3000 PSI (20.7 MPa)				f'c = 4000 PSI (27.6 MPa)				f'c = 5000 PSI (34.5 MPa)			
				TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR		TENSION		SHEAR	
				lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
1/4	(6.4)	1	(25.4)	750	(3.3)	900	(4.0)	775	(3.4)	900	(4.0)	800	(3.6)	1,360	(6.1)	950	(4.2)	1,440	(6.4)
		1-1/4	(31.8)	1,050	(4.7)	900	(4.0)	1,160	(5.2)	900	(4.0)	1,270	(5.6)	1,360	(6.1)	1,515	(6.7)	1,440	(6.4)
		1-1/2	(38.1)	1,380	(6.1)	1,200	(5.3)	1,600	(7.2)	1,200	(5.3)	1,820	(8.1)	1,380	(6.1)	2,170	(9.7)	1,670	(7.4)
		1-3/4	(44.5)	2,020	(9.0)	1,670	(7.4)	2,200	(9.8)	1,670	(7.4)	2,380	(10.6)	1,670	(7.4)	2,770	(12.3)	1,670	(7.4)

Allowable working loads for the single installation under static loading should not exceed 25% capacity of the Ultimate Load. To calculate the Allowable Load, divide the Ultimate Load by 4.

PERFORMANCE TABLE

Tapcon®
SCOTS Anchors

**Ultimate Tension and Shear Values (lbs/kN)
in Hollow Concrete Masonry Units**

ANCHOR DIAMETER in. (mm)		ANCHOR EMBEDMENT in. (mm)		LIGHTWEIGHT BLOCK				MEDIUM WEIGHT BLOCK			
				TENSION		SHEAR		TENSION		SHEAR	
in.	(mm)	in.	(mm)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
1/4	(6.4)	1	(25.4)	250	(1.1)	620	(2.8)	500	(2.2)	1,000	(4.4)

Allowable working loads for the single installation under static loading should not exceed 25% capacity of the Ultimate Load. To calculate the Allowable Load, divide the Ultimate Load by 4.

NOTE: 3/16" Tapcon requires 5/32" bit, 1/4" Tapcon requires 3/16" bit.

PERFORMANCE TABLE

Tapcon®
SCOTS Anchors

**Allowable Edge
and Spacing Distances**

PARAMETER	ANCHOR DIAMETER		NORMAL WEIGHT CONCRETE			CONCRETE MASONRY UNITS (CMU)		
	in.	(mm)	FULL CAPACITY (Critical Distance Inches)	REDUCED CAPACITY (Minimal Distance Inches)	LOAD REDUCTION FACTOR	FULL CAPACITY (Critical Distance Inches)	REDUCED CAPACITY (Minimal Distance Inches)	LOAD REDUCTION FACTOR
Spacing Between Anchors - Tension	1/4	(6.4)	4	2	0.66	4	2	0.84
Spacing Between Anchors - Shear	1/4	(6.4)	4	2	0.82	4	2	0.81
Edge Distance - Tension	1/4	(6.4)	2-1/2	1-1/4	0.82	4	2	0.88
Edge Distance -Shear	1/4	(6.4)	3	1-1/2	0.59	4	2	0.80

For SI: 1 inch = 25.4 mm



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



Tapcon® XL Anchors



UltraShield

APPLICATIONS



Shutters - protective and decorative



Screened porch and pool enclosures.

Railings

Mounted electrical equipment

Sill plates



DESCRIPTION/SUGGESTED SPECIFICATIONS

EXTRA LARGE TAPCON FOR EXTRA LARGE CHALLENGES!

ADVANTAGES

- Internal TORX® T-40 drive assures easy installation.
 - High button head resists cam-out during installation.
 - Corrosion protection of UltraShield™ to combat aggressive environments.
 - Available in silver.
 - Delivers over 3,000 lbs. holding power in concrete.
 - Alternative to sleeve anchors.
- Use 1/4" Tapcon Drill Bit**

CORROSION RESISTANCE

Salt Spray Test (ASTM B117) **UltraShield**
1100 Hrs 10% or less rust

INSTALLATION STEPS

Read installation instructions before using!



WARNING:

If there are any questions concerning proper installation, applications or appropriate use of this product, please call our Technical Services Department at 1-800-848-5611. Failure to follow these instructions can result in serious personal injury.

1. Drill Hole minimum ¼" deeper than Tapcon Anchor to be embedded.

Minimum anchor embedment: 1"
Maximum anchor embedment: 1¾"

2. Drive anchor using T-40 Torx® Drive



WARNING:

Failure to wear safety glasses with side shields can result in serious personal injury. Always wear ANSI compliant eye protection (ANSI Z87.1-2003).



WARNING:

Using the wrong size drill bit will affect performance values and may cause failure.

SELECTION CHART

**Tapcon®
XL Anchors**

Diameter 5/16" Thread Form Reverse Hi-Lo®
Point Type Nail Finish UltraShield™
Head Style High button with TORX T-40 Drive

RECOMMENDED TAPCON LENGTH		PART NO.	FINISH
in.	(mm)		
2-1/4	(57.2)	3395902	Ultra Shield

XLs are packed 100 pieces per master carton.

PERFORMANCE TABLE

**Tapcon®
XL Anchors**

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

ANCHOR DIAMETER in. (mm)		MIN. DEPTH OF EMBEDMENT in. (mm)		EDGE DISTANCE in. (mm)		f'c = 3000 PSI (20.7 MPa)			
						TENSION		SHEAR	
						lbs.	(kN)	lbs.	(kN)
5/16	(7.9)	1-1/4	(31.8)	1-9/16	(39.7)	1,050	(4.7)	1,330	(5.9)
				2-3/16	(55.6)	1,205	(5.4)	1,725	(7.7)
		1-3/4	(44.5)	1-9/16	(39.7)	2,020	(9.0)	1,530	(6.8)
				2-3/16	(55.6)	2,250	(10.0)	2,505	(11.1)
		2-1/4	(57.2)	1-9/16	(39.7)	2,850	(12.7)	1,955	(8.9)
				2-3/16	(55.6)	3,120	(13.9)	3,250	(14.4)

Allowable working loads for the single installation under static loading should not exceed 25% capacity of the Ultimate Load. To calculate the Allowable Load, divide the Ultimate load by 4
Pilot hole diameter – Use 1/4" ANSI spec carbide tipped drill bit. Drill 1/4" longer than necessary embedment.
Recommended center to center distance of 3-3/4" is required for 100% efficiency and 1-7/8" for 50% efficiency.

PERFORMANCE TABLE

**Tapcon®
XL Anchors**

**Ultimate Tension and Shear Values
in Concrete Masonry Units**

ANCHOR DIAMETER in. (mm)		MINIMUM DEPTH OF EMBEDMENT in. (mm)		EDGE DISTANCE in.	HOLLOW CORE ¹				GROUT-FILLED ²			
					TENSION		SHEAR		TENSION		SHEAR	
					lbs.	(kN)	lbs.	(kN)	lbs.	(kN)	lbs.	(kN)
5/16	(7.9)	1-1/4	(31.8)	4	1,045	(4.6)	2,280	(10.1)	1,045	(4.6)	2,280	(10.1)
		1-3/4	(44.5)	4	NOT RECOMMENDED		NOT RECOMMENDED		1,950	(8.7)	2,825	(12.6)
		2-1/4	(57.2)	4	NOT RECOMMENDED		NOT RECOMMENDED		3,770	(16.8)	3,140	(14.0)

Allowable working loads for the single installation under static loading should not exceed 25% capacity of the Ultimate Load. To calculate the Allowable Load, divide the Ultimate load by 4
1. CMU = 1,600 PSI minimum compressive strength.
2. CMU = 1,600 PSI minimum compressive strength with 2,000 PSI grout.
Embedment is through 1-1/4" face shell of hollow block.

Tapcon®

Storm Guard Anchors



APPLICATIONS



Direct mount permanent anchors for quick and easy installations for metal and plywood panels to wood, hollow block and concrete.

DESCRIPTION/SUGGESTED SPECIFICATIONS

DIRECT MOUNT PERMANENT ANCHORS FOR QUICK AND EASY INSTALLATIONS OF METAL AND PLYWOOD PANELS TO CONCRETE AND BLOCK.



ADVANTAGES

- White UltraShield™ for corrosion protection in coastal environments.
- 1/4-20 x 7/8" external thread above collar.
- No caulking required.
- Threaded chamfered safety collar prevents overdriving.
- 3/16" Hex Drive.
- Use with ANSI standard 3/16" carbide-tipped drill bit. (bit not included)

CORROSION RESISTANCE

Salt Spray Test (ASTM B117) White UltraShield
1500 Hrs 10% or less red rust

APPROVAL/LISTINGS

Miami-Dade County

For the most current approvals/listings visit: www.itwredhead.com

INSTALLATION STEPS

Read installation instructions before using!



CAUTION:

DO NOT BEND DRILL BIT.
DO NOT FORCE THE DRILL BIT INTO BASE MATERIAL.



WARNING:

Failure to wear safety glasses with side shields can result in serious personal injury. Always wear ANSI compliant eye protection (ANSI Z87.1-2003).



WARNING:

Using the wrong size drill bit will affect performance values and may cause failure.