RED HEAD
CONCRETE ANCHORING SPECIALISTS

Large Diameter Tapcon

(LDT) Anchors

DESCRIPTION / SUGGESTED SPECIFICATIONS

Finished Head, Removable Anchor

LDT

(3/8" & 1/2") (5/8" & 3/4") Sawtooth™

3/8" and 1/2" are available with Envirex coating

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

Self-threading Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE

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 anchor shall be installed 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

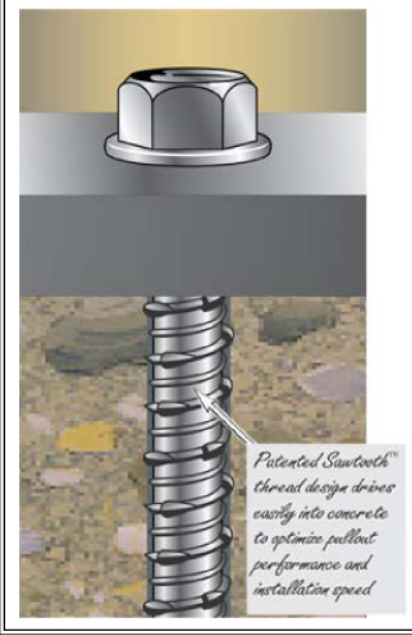
Sawtooth Threads™, now available on 5/8" and 3/4"

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



RED HEAD
CONCRETE ANCHORING SPECIALISTS

INSTALLATION STEPS

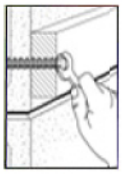
Installation Steps in Concrete

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)

Installation Steps in Concrete Block (CMU) (3/8" and 1/2" diameters)

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. **Installation Steps for Block** 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")

LDT	Bit Size	Socket Size	Washer Dia.
LDT 3/8"	5/16"	9/16"	13/16"
LDT 1/2"	7/16"	3/4"	1"
LDT 5/8"	1/2"	13/16"	1-13/16"
LDT 3/4"	5/8"	15/16"	1-13/16"

LDT's can be installed by hand or with an impact wrench

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.

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

(A) **Extra Large Hex Washer Head**
—With increased bearing surface

Length Identification Head Stamp
—For embedment inspection after installation

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

APPROVALS / LISTINGS

Metro-Dade County – #04-1025.08
Florida Building Code

RED HEAD
CONCRETE ANCHORING SPECIALISTS

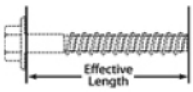
LDT (Large Diameter Tapcon) Anchor

SELECTION CHART

LDT™
Carbon and Stainless Steel with Zinc Plating

Carbon Steel with Zinc Plating: Meets ASTM B695 & B633 specifications for zinc plating of 5um = .0002" thickness. This coating is well suited for non-corrosive interior environments.

Carbon Steel with EnvireX Coating: Provides additional corrosion protection for outdoor applications.



PART NUMBER FOR CARBON STEEL ZINC PLATED	PART NUMBER FOR CARBON STEEL ENVIREX COATING	PART NUMBER FOR 410 STAINLESS STEEL	ANCHOR DIA. In. (mm)	DRILL BIT DIA. In. (mm)	EFFECTIVE LENGTH In. (mm) (see detail on left)	MAX. THICKNESS OF MATERIALS TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
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	LDT-3830X	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	LDT-3840X	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	LDT-3850X	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	LDT-1230X	SLDT-1230	1/2 (12.7)	7/16 (11.1)	3 (76.2)	1 (25.4)	25/ 4.5	150/ 27.0
LDT-1240	LDT-1240X	SLDT-1240	1/2 (12.7)	7/16 (11.1)	4 (101.6)	2 (50.8)	25/ 6.0	150/ 36.6
LDT-1250	LDT-1250X	SLDT-1250	1/2 (12.7)	7/16 (11.1)	5 (127.0)	3 (76.2)	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 LDT's will be gold in color in order to differentiate them from the carbon steel anchors which are silver.

RED HEAD
CONCRETE ANCHORING SPECIALISTS

LDT (Large Diameter Tapcon) Anchor

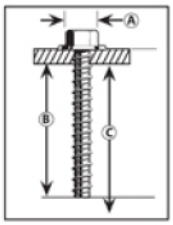
LDT 3/8" and 1/2" are available with Envire X coating

1,000 hours salt spray ASTM B117. Approved for use in ACQ and MCQ lumber*

*Excessive content of copper in the ACQ and MCQ lumber may affect the anchor finish.

Selection Chart

LDT Size	ANSI Standard Drill Bit Diameter	Ⓐ Anchor Head (Socket Size) Diameter	Washer Diameter	Ⓑ Minimum Embedment	Ⓒ Hole Depth	USE IN		
						Concrete	CMU Hollow	CMU 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 catalog for effective lengths and length indication code.

DESIGN GUIDE

For proper selection of anchor diameters based upon predrilled holes through base plates and fixtures to be fastened.

HOLE DIAMETER THROUGH FIXTURE In. (mm)	SUGGESTED LDT DIAMETER 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*

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)

*Located on top of anchor for easy inspection.

LDT (Large Diameter Tapcon) Anchor

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

SUGGESTED SPECIFICATIONS

Self-threading Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE

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

Anchor bodies are made of hardened carbon steel, plated with zinc or GRD 2000® (tested to ASTM B117A for greater corrosion resistance).

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

RED HEAD
CONCRETE ANCHORING SPECIALISTS

PERFORMANCE TABLES

LDT Anchors		Ultimate Tension and Shear Values (Lbs/kN) in Concrete					
ANCHOR DIA. 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 Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR 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 (130.5)	25,652 (114.1)

LDT Anchors		Allowable Tension and Shear Values* (Lbs/kN) in Concrete Carbon and Stainless Steel					
ANCHOR DIA. 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 Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
3/8 (9.5)	1-1/2 (38.1)	334 (1.5)	527 (2.3)	413 (1.8)	691 (3.1)	492 (2.1)	854 (3.8)
	2 (50.8)	373 (1.7)	759 (3.4)	506 (2.2)	807 (3.6)	638 (2.8)	855 (3.8)
	2-1/2 (63.5)	933 (4.2)	828 (3.7)	937 (4.2)	841 (3.7)	940 (4.2)	856 (3.8)
	3-1/2 (88.9)	1,349 (6.0)	828 (3.7)	1,656 (7.4)	842 (3.7)	1,963 (8.7)	857 (3.8)
1/2 (12.7)	2 (50.8)	895 (4.0)	1,411 (6.3)	977 (4.3)	1,628 (7.2)	1,059 (4.7)	1,845 (8.2)
	3-1/2 (88.9)	1,813 (8.0)	1,609 (7.2)	2,011 (8.9)	1,822 (8.1)	2,209 (9.8)	2,035 (9.0)
	4-1/2 (114.3)	2,544 (11.3)	1,846 (8.2)	2,583 (11.5)	1,992 (8.9)	2,622 (11.7)	2,138 (9.5)
5/8 (15.9)	2-3/4 (69.9)	1,319 (5.9)	2,164 (9.7)	1,640 (7.3)	2,766 (12.3)	1,961 (8.7)	3,369 (15.0)
	3-1/2 (88.9)	1,993 (8.9)	2,556 (11.4)	2,462 (10.9)	3,036 (13.5)	2,931 (13.0)	3,515 (15.6)
	4-1/2 (114.3)	2,892 (12.9)	3,079 (13.7)	3,358 (14.9)	3,395 (15.1)	4,223 (18.8)	3,710 (16.5)
3/4 (19.1)	3-1/4 (82.6)	1,719 (7.6)	1,785 (7.9)	2,439 (10.8)	2,682 (11.9)	3,159 (14.0)	3,579 (15.9)
	4-1/2 (114.3)	2,576 (11.5)	3,280 (14.6)	3,606 (16.0)	4,217 (18.7)	4,635 (20.6)	5,153 (22.9)
	5-1/2 (139.7)	3,262 (14.5)	4,477 (19.9)	4,539 (20.2)	5,445 (24.2)	5,817 (25.9)	6,413 (28.5)

* Allowable values are based upon a 4 to 1 safety factor. (Ultimate/4)

PERFORMANCE TABLES

LDT Anchors		Recommended Edge & Spacing Requirements for Tension Loads* Carbon and Stainless Steel			
ANCHOR DIA. In. (mm)	**EMBEDMENT DEPTH In. (mm)**	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	**LOAD FACTOR APPLIED AT MIN. EDGE DISTANCE 1-3/4 Inches (44mm)**	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	**LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3 Inches (76mm)**
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%

* 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.

PERFORMANCE TABLES

LDT Anchors		Recommended Edge & Spacing Requirements for Shear Loads* Carbon and Stainless Steel			
ANCHOR DIA. In. (mm)	**EMBEDMENT DEPTH In. (mm)**	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	**LOAD FACTOR APPLIED AT MIN. EDGE DISTANCE 1-3/4 Inches (44mm)**	SPACING DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	**LOAD FACTOR APPLIED AT MIN. SPACING DISTANCE 3 Inches (76mm)**
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%

* 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.

PERFORMANCE TABLES

	LDT Anchors	Ultimate Tension Load (Lbs/kN) in Concrete Block (anchors should be installed by hand in hollow block)			
ANCHOR DIA. In. (mm)	**MINIMUM EMBEDMENT DEPTH In. (mm)**	**HOLLOW CONCRETE BLOCK**		**GROUT FILLED CONCRETE BLOCK**	
		TENSION Lbs. (kN)	**SHEAR Lbs. (kN)**	**TENSION Lbs. (kN)**	**SHEAR 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)	---- ----	---- ----	5,924 (26.4)	6,680 (29.7)

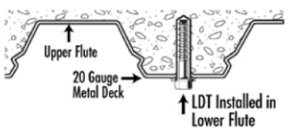
* Allowable values are based upon a 4 to 1 safety factor. (Ultimate/4)

PERFORMANCE TABLES

	LDT Anchors	Allowable Tension and Shear* (Lbs/kN) in Concrete Block (anchors should be installed by hand in hollow block)			
ANCHOR DIA. In. (mm)	**MINIMUM EMBEDMENT DEPTH In. (mm)**	**HOLLOW CONCRETE BLOCK**		**GROUT FILLED CONCRETE BLOCK**	
		TENSION Lbs. (kN)	**SHEAR Lbs. (kN)**	**TENSION Lbs. (kN)**	**SHEAR 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)	---- ----	---- ----	1,481 (6.6)	1,670 (7.4)

* Allowable values are based upon a 4 to 1 safety factor. (Ultimate/4)

PERFORMANCE TABLES



	LDT™ Anchors	Anchoring Overhead in 3000 PSI Lightweight Concrete On Metal Deck			
ANCHOR	**DRILL HOLE DAIMETER In. (mm)**	EMBEDMENT In. (mm)	3000PSI (20.7 MPa) CONCRETE		
			ULTIMATE TENSION LOAD Lbs. (kN)		ALLOWABLE WORKING LOAD 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)