

# Large Diameter Tapcon (LDT) Anchors

**Finished head, Removable Anchor**



LDT

(3/8" & 1/2")

(5/8" & 3/4")

Sawtooth™

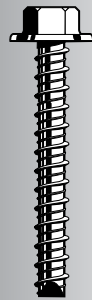
3/8" and 1/2" are available with **EnvireX** coating

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

## 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

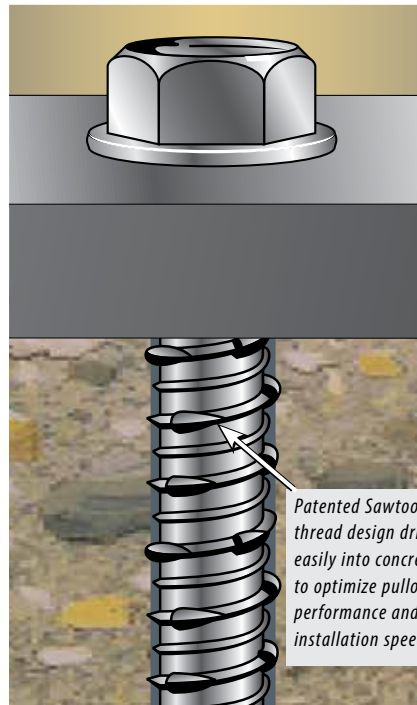
#### LOWER DRILL BIT COSTS

- 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

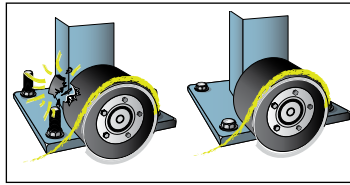
## APPLICATIONS



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.

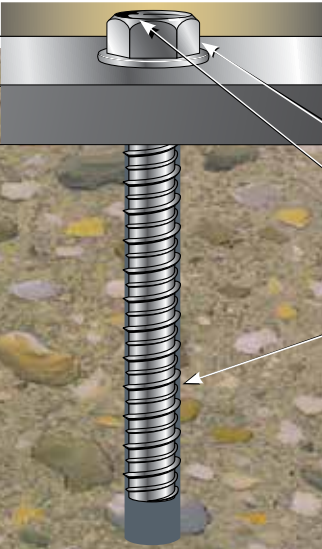


For installation speed, high performance and easy removability, LDT is the anchor of choice.



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

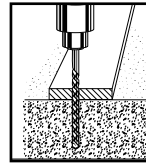
**LDT 3/8" and 1/2" are available with EnvireX™ coating**

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

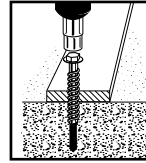
\*Excessive content of copper in the ACQ and MCQ lumber may affect the anchor finish.

## INSTALLATION STEPS

### Installation Steps for Concrete, Lightweight Concrete and Metal Deck



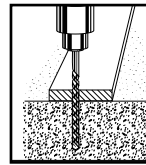
**1.** Using the proper size carbide bit (see chart) drill "a pilot hole at least 1" deeper than anchor embedment."



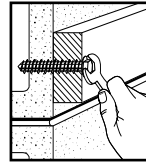
**2.** Using an **electric impact wrench**, or socket wrench (hand install) insert anchor into hole and tighten anchor until fully seated. (see chart for socket size) (do not over tighten).

### 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 by hand or with an impact wrench

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

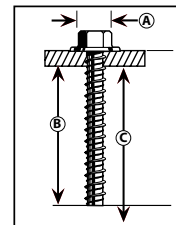


Installation by impact wrench—is recommended for faster installations or for high volume projects. Installation with impact wrench—is **not** recommended for hollow block.



## 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	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



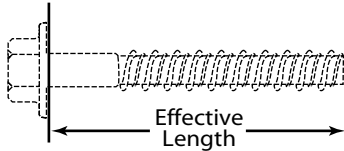
See page 75 for effective lengths and length indication code.

## SELECTION CHART

### LDT Carbon and Stainless Steel

**Carbon Steel with Zinc Plating: Meets ASTM B695 and B633 specifications for zinc plating of Sum = .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 CARBON STEEL ZINC PLATED	PART NUMBER 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 MATERIAL 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-3830 X	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	LDT-1240 X	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	LDT-1250 X	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 LDT's will be gold in color in order to differentiate them from the carbon steel anchors.

## DESIGN GUIDE

**For proper selection of anchor diameters based upon predrilled holes in base plates and fixtures.**

HOLE DIAMETER IN 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.

## PERFORMANCE TABLE

### 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 (103.5)	25,652 (114.1)

**PERFORMANCE TABLE**

**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 TABLE**

**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)	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%
ANCHOR DIA. In. (mm)	EMBEDMENT DEPTH In. (mm)	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	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 3.75 Inches (95.2mm)
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 DIA. In. (mm)	EMBEDMENT DEPTH In. (mm)	EDGE DISTANCE REQUIRED TO OBTAIN MAX. WORKING LOAD In. (mm)	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 4.5 Inches (114.3mm)
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.

## PERFORMANCE TABLE

### 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)	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)
<b>3/8 (9.5)</b>	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%
<b>1/2 (12.7)</b>	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%
<b>5/8 (15.9)</b>	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%
<b>3/4 (19.1)</b>	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 TABLES

### LDT Anchors

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

ANCHOR DIA. In. (mm)	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)	N/A	N/A	5,924 (26.4)	6,680 (29.7)

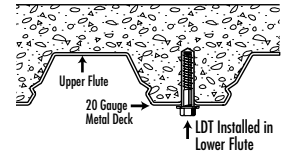


# LDT Anchors

## Allowable Tension and Shear\* (Lbs/kN) in Concrete Block (anchors should be installed by hand in hollow block)

ANCHOR DIA. In. (mm)	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)	N/A	N/A	1,481 (6.6)	1,670 (7.4)

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



# LDT Anchors

## Anchoring Overhead in 3000 PSI Lightweight Concrete On Metal Deck

ANCHOR	DRILL HOLE DIAMETER 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)	

For use in concrete and concrete block



**DRILL BIT SIZE REQUIRED**  
LDT anchors specify a smaller & less expensive drill bit than those required with the 1/2" adhesive threaded rod or the 5/8" wedge.

**HOLE DEPTH REQUIRED**  
At 4-1/2" embedment the LDT anchor will give you performance (2000 PSI concrete) similar to 1/2" adhesive anchor of the same depth or 5/8" wedge anchors at 7" deep. (2000 PSI concrete)

