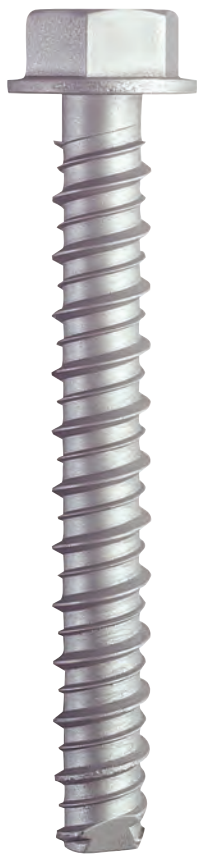


Large Diameter Tapcon (LDT) Anchors

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

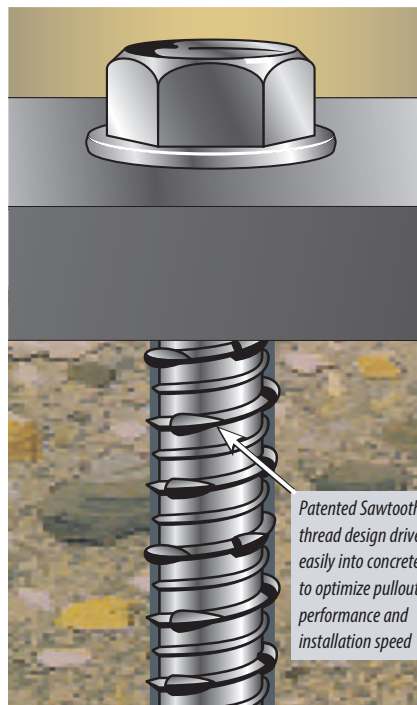
LOWER DRILL BIT COSTS

- 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"



Patented Sawtooth™ thread design drives easily into concrete to optimize pullout performance and installation speed

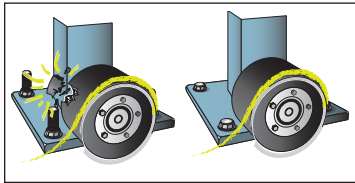
IMPROVED PERFORMANCE IN LARGE DIAMETER HOLES

- 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

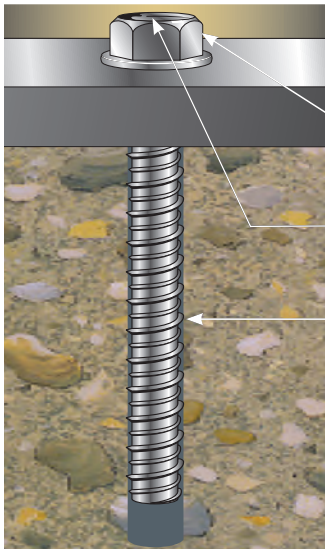


Racking, shelving and conveyors are just a few high volume applications ideal for Large Diameter Tapcon (LDT™). The ease and speed of installation of the LDT can reduce installation time to less than half the time of typical systems used today.

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

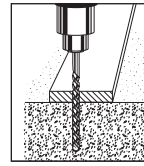
Extra Large Hex Washer Head
— With increased bearing surface

Length Identification Head Stamp
— For embedment inspection after installation

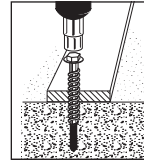
Hi-Lo Threads
— Cuts its own threads into concrete for greater pull-out resistance

INSTALLATION STEPS

Installation Steps for Concrete, Lightweight Concrete and Metal Deck

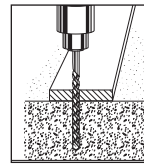


1. Using the proper size carbide bit (see chart) drill a pilot hole at least 1" deeper than anchor embedment.

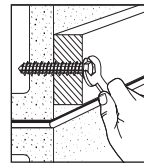


2. Using an **electric impact wrench**, or socket wrench (hand install) insert anchor into hole and tighten anchor until fully seated. (see chart for socket size) (do not over tighten).

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

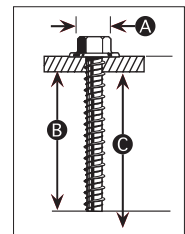
Installation by hand—is easy, simply using a socket wrench



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

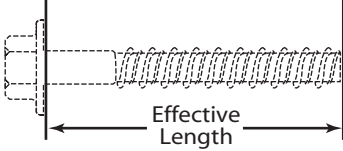


See page 75 for effective lengths and length indication code.

SELECTION CHART

LDT Carbon and Stainless Steel

Carbon Steel with Zinc Plating: Meets ASTM B695 and B633 specifications for zinc plating of $\text{Sum} = .0002''$ 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)		$f'_c = 2000 \text{ PSI (13.8 MPa)}$				$f'_c = 3000 \text{ PSI (20.7 MPa)}$				$f'_c = 4000 \text{ PSI (27.6 MPa)}$			
				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	(130.5)	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.



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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					
	in.	(mm)	lbs.	(kN)	ULTIMATE TENSION LOAD			ALLOWABLE WORKING LOAD		
					Upper Flute	lbs.	(kN)	Lower Flute	lbs.	(kN)
3/8" LDT	5/16	(7.9)	1-1/2	(38.1)	Upper Flute	2,889	(12.9)	Lower Flute	722	(3.2)
					Lower Flute	1,862	(8.3)		465	(2.1)

