Titen HD® Mini Screw Anchor

Sharing the same features as the larger Titen HD® screw anchor, the Titen HD® Mini anchor provides an easy solution for jobs that call for smaller anchors. The self-undercutting, non-expansion characteristics are ideal for situations where minimum edge distance and reduced spacing are a concern. The patented cutting teeth and thread design enable the Titen HD Mini anchor to be installed quickly and with less effort than many other screw-type anchors. Since there are no secondary setting steps involved, the Titen HD Mini screw anchor can be installed much more quickly than traditional expansion anchors.

Features:

- Full-length threads undercut the concrete and effectively transfer loads into the base material
- Specialized heat-treating process creates high hardness at the tip to facilitate cutting while the body remains ductile
- Less spacing and edge distance required since the anchor does not exert expansion forces
- No special installation tools required. Holes can be drilled with rotary hammer or hammer drill with ANSI size bit. Anchors are installed with standard size sockets.
- Less installation time translates to lower installed cost
- Removable, ideal for temporary anchorage

Material: Carbon steel, heat-treated

Finish: Zinc-plated

Test Criteria: The Titen HD Mini anchor has been tested in accordance with ASTM E488 standard test methods for tension and shear.

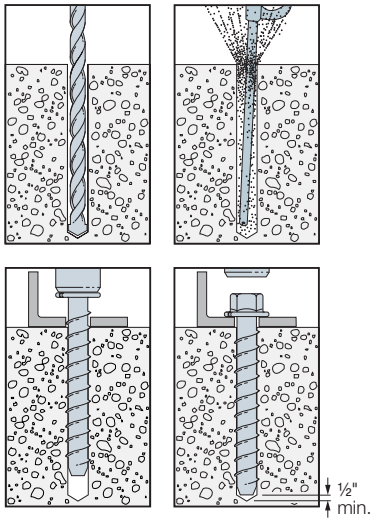
Installation:

Caution: Oversized holes in the base material will reduce or eliminate the mechanical interlock of the threads with base material and will reduce the anchor's load capacity. Use a Titen HD Mini screw anchor one time only. Installing the anchor multiple times may result in excessive thread wear and reduce load capacity.

- Drill a hole using the specified diameter carbide bit into the base material to a depth of at least ½" deeper than the required embedment depth.
- Blow the hole clean of dust and debris using compressed air.
- Insert the anchor through the fixture and into the hole.
- **Important:** In normal-weight concrete, install with an applied torque of 15 ft-lbs for the ¼" Titen HD Mini and 25 ft-lbs for the ⅜" Titen HD Mini using a torque wrench, driver drill, hammer drill or cordless ¼" impact driver with a maximum permitted torque rating of 100 ft-lbs. In hollow CMU, do not use impact tools to install and use a manual applied torque of 10 ft-lbs.

U.S. Patent
5,674,035 & 6,623,228

Installation Sequence



Titen HD® Mini Anchor Product Data

Size	Model No.	Drill Bit Dia. (in.)	Wrench Size (in.)	Recommended Fixture Hole Size (in.)	Quantity	
					Box	Ctn.
¼" x 1¾"	THD25134H	¼	⅜	5⁄16 – ⅜	100	500
¼" x 2¼"	THD25214H	¼	⅜	5⁄16 – ⅜	50	250
¼" x 3"	THD25300H	¼	⅜	5⁄16 – ⅜	50	250
⅜" x 1¾"	THD37134H	⅜	9⁄16	½ – 9⁄16	50	250
⅜" x 2½"	THD37212H	⅜	9⁄16	½ – 9⁄16	50	200

Tension Loads in Normal-Weight Concrete

Size in. (mm)	Drill Bit Dia. in.	Embed. Depth in. (mm)	Min. Spacing in. (mm)	Min. Edge Dist. in. (mm)	Tension Load			
					$f'_c \geq 2000$ psi Concrete		$f'_c \geq 4000$ psi Concrete	
					Ultimate lbs. (kN)	Allowable lbs. (kN)	Ultimate lbs. (kN)	Allowable lbs. (kN)
¼ (6.4)	¼	1 (25)	4 (102)	4 (102)	624 (2.8)	155 (0.7)	1,037 (4.6)	260 (1.2)
		1¾ (44)			1,768 (7.9)	440 (2.0)	2,255 (10.0)	565 (2.5)
⅜ (9.5)	⅜	1½ (38)	4 (102)	6 (152)	2,070 (9.2)	520 (2.3)	2,974 (13.2)	745 (3.3)

1. The allowable loads are based on a safety factor of 4.0.
2. The minimum concrete thickness is 1½ times the embedment depth.
3. Tension and Shear loads may be combined using the straight line interaction equation (n = 1).

Shear Loads in Normal-Weight Concrete

Size in. (mm)	Drill Bit Dia. in.	Embed. Depth in. (mm)	Min. Spacing in. (mm)	Min. Edge Dist. in. (mm)	Shear Load			
					$f'_c \geq 2000$ psi Concrete		$f'_c \geq 4000$ psi Concrete	
					Ultimate lbs. (kN)	Allowable lbs. (kN)	Ultimate lbs. (kN)	Allowable lbs. (kN)
¼ (6.4)	¼	1 (25)	4 (102)	4 (102)	1,104 (4.9)	275 (1.2)	2,135 (9.5)	535 (2.4)
		1¾ (44)			2,443 (10.9)	610 (2.7)	—	610 (2.7)
⅜ (9.5)	⅜	1½ (38)	4 (102)	6 (152)	2,912 (13.0)	730 (3.2)	3,668 (16.3)	915 (4.1)

Tension and Shear Loads in 8-inch Lightweight, Medium-Weight and Normal-Weight Hollow CMU

Size in. (mm)	Drill Bit Dia. in.	Embed. Depth[4] in. (mm)	Min. Edge Dist. in. (mm)	Min. End Dist. in. (mm)	8-inch Hollow CMU Loads Based on CMU Strength			
					Tension Load		Shear Load	
					Ultimate lbs. (kN)	Allowable lbs. (kN)	Ultimate lbs. (kN)	Allowable lbs. (kN)
Anchor Installed in Face Shell (See Figure 1)								
¼ (6.4)	¼	1½ (38)	4 (102)	4⅝ (117)	520 (2.3)	105 (0.5)	1,240 (5.5)	250 (1.1)
⅜ (9.5)	⅜	1½ (38)	4 (102)	4⅝ (117)	720 (3.2)	145 (0.6)	1,240 (5.5)	250 (1.1)

1. The tabulated allowable loads are based on a safety factor of 5.0 for installations under the IBC and IRC.
2. Values for 8-inch wide, lightweight, medium-weight, and normal-weight CMU.
3. The minimum specified compressive strength of masonry, f'_c, at 28 days is 1,500 psi.
4. Embedment depth is measured from the outside face of the concrete masonry unit and is based on the anchor being embedded an additional ¼" through the 1¼" thick face shell.
5. Allowable loads may not be increased for short-term loading due to wind or seismic forces. CMU wall design must satisfy applicable design standards and be capable of withstanding applied loads.
6. Set drill to rotation-only mode when drilling into hollow CMU.
7. Do not use impact wrenches to install in hollow CMU.