

Product Image



Concrete Screw Anchor

Concrete Screws are tempered masonry screws designed for long lasting performance and superior holding strength. Due to their unique thread design, they are the ideal fastening solution for light to medium duty applications in concrete, brick, masonry block and wood base materials. They are manufactured with a gimlet point that taps it's own threads while drilling into the base material. Common applications for this fastener include the attachment of electrical boxes, light fixtures, and masonry base materials.

Features and Benefits:

- Designed for close to edge fastening
- Strong grip
- Corrosion resistance
- Case hardened
- Gimlet point for self drilling into wood
- Can be loosened for adjustment or removal

Material Specifications

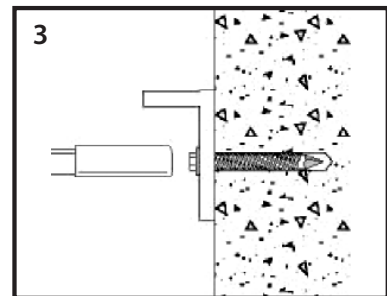
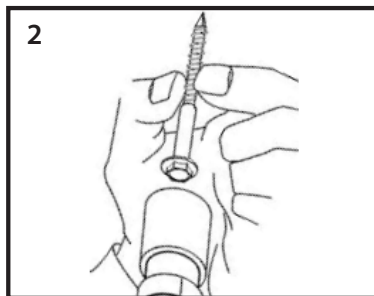
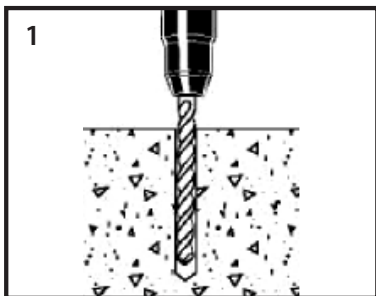
| Component | Material |
|-------------|--------------|
| Anchor Body | Carbon Steel |
| Finish | Blue Xylan |
| Thread Type | High -Low |
| Point Type | Gimlet |

Applicable Base Materials:

- Normal-weight concrete
- Lightweight concrete
- Grouted concrete masonry
- Hollow concrete masonry (CMU)
- Solid Brick Masonry
- Wood

Installation Instructions

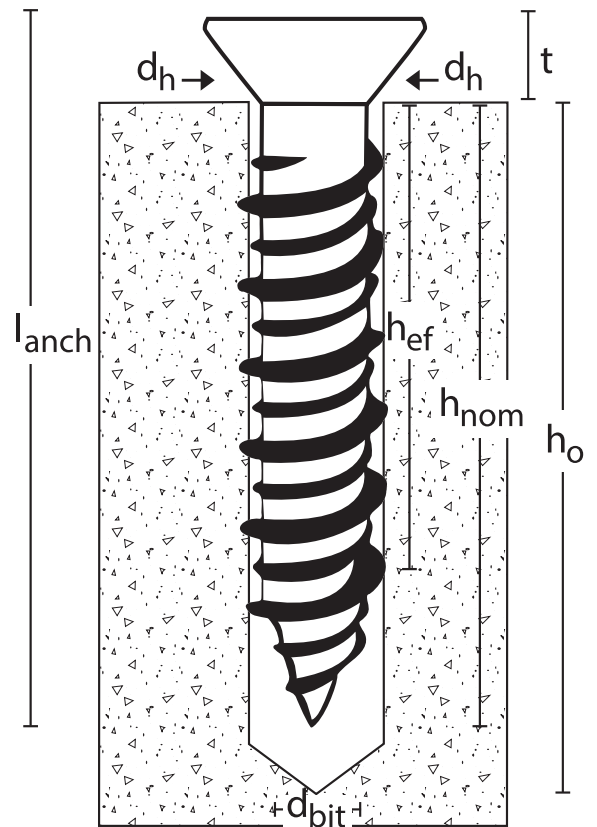
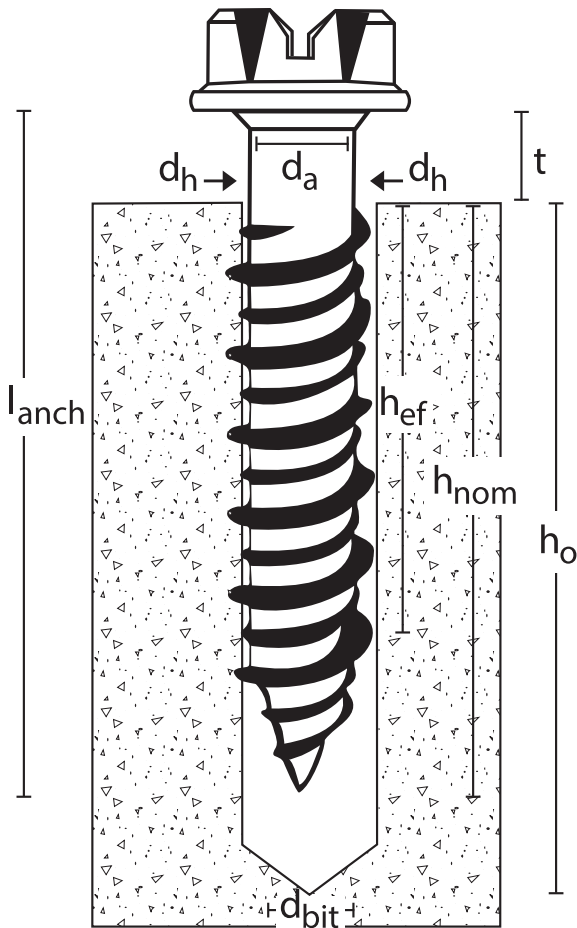
1. Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/4" deeper than the required embedment. A concrete screw anchor drill bit must be use. **Clear hole of dust and other debris.**
2. Select the concrete screw anchor installation tool and drive socket to be used. Insert the head of the concrete screw anchor into the hex head socket or phillips head driver. For softer concrete or masonry, set drill motor to the "rotation only" mode.
3. Place the point of the concrete screw anchor through the fixture into the pre-drilled hole and drive the anchor in one steady continuous motion until it is fully seated at the proper embedment. The driver will automatically disengage from the head of the concrete screw anchor.



| INSTALLATION SPECIFICATIONS SLOTTED HEX WASHER HEAD | Nominal Anchor Diameter, d | |
|--|-------------------------------|--------|
| | 3/16" | 1/4" |
| Drill Bit Size, d _{bit} (in.) | 5/32" | 3/16" |
| Typ. Fixture Clearance Hole, d _h (in.) | 1/4" | 5/16" |
| Head Height (in.) | 7/64" | 9/64" |
| Hex Head Wrench/Socket Size | 1/4" | 5/16" |
| Washer O.D., d _w (in.) | 11/32" | 13/32" |
| Washer Thickness, (in.) | 1/32" | 1/32" |

| INSTALLATION SPECIFICATIONS PHILLIPS FLAT HEAD | Nominal Anchor Diameter, d | |
|---|-------------------------------|-------|
| | 3/16" | 1/4" |
| Drill Bit Size, d _{bit} (in.) | 5/32" | 3/16" |
| Typ. Fixture Clearance Hole, d _h (in.) | 1/4" | 5/16" |
| Phillips Head O.D., (in.) | 3/8" | 1/2" |
| Phillips Head Height, (in.) | 9/64" | 3/16" |
| Phillips Bit Size (No.) | 2 | 3 |

- For minimum nominal embedment depths, h_{nom} , see the performance data tables.
The minimum hole depth, h_o , is 1/4" more than the selected nominal embedment depth.
- In light gauge steel material (0.036 / 20 gauge and thinner), the clearance hole can be the same diameter as the drill bit.
- Pre-drilling is not required for screw anchors into wood base materials (but can be considered).





INSTALLATION TABLE IN CONCRETE¹

| ANCHOR PROPERTY/SETTING INFORMATION | NOTATION | UNITS | 3/16" | 1/4" |
|--|-------------------|-------|-------------------------|-------------------------|
| Nominal anchor shank diameter | da | in. | 0.145" | 0.185" |
| Nominal drill bit diameter | dbit | in. | 5/32" | 3/16" |
| Bit tolerance range | - | in. | 0.170" to 0.176" | 0.202" to 0.206" |
| Minimum nominal embedment depth | h _{nom} | in. | 1-3/4" | 1-3/4" |
| Effective embedment | h _{ef} | in. | 1.23" | 1.23" |
| Minimum hole depth | h _{hole} | in. | h _{nom} + 1/4" | h _{nom} + 1/4" |
| Minimum concrete member thickness | h _{min} | in. | 3-1/4" | 3-1/4" |
| Minimum overall anchor length ² | l _{anch} | in. | 2-1/4" | 2-1/4" |
| Minimum edge distance | C _{min} | in. | 1-3/4" | 1-3/4" |
| Minimum spacing distance | S _{min} | in. | 1" | 2" |
| Hex head socket size | - | in. | 1/4" | 5/16" |
| Phillips head bit size (No.) | - | - | 2 | 3 |

1. For the hex head versions, the minimum overall anchor length can be 1.75" as long as the fixture does not exceed 0.036" in thickness.

Technical Data Sheet



ULTIMATE & ALLOWABLE LOAD CAPACITIES IN NORMAL-WEIGHT CONCRETE^{1,2}

| Nominal Anchor Diameter d in. | Minimum Embed. Depth h _{nom} in. | Minimum Edge Distance in. | Minimum Spacing in. | Minimum Concrete Compressive Strength | | | |
|-------------------------------|---|---------------------------|---------------------|---------------------------------------|------------|--------------|------------|
| | | | | f'c=2,500 psi | | | |
| | | | | Ultimate | | Allowable | |
| | | | | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. |
| 3/16" | 1-3/4" | 1" | 1" | 1,080 | 305 | 270 | 75 |
| | 1-3/4" | | 1-1/8" | 1,190 | 305 | 295 | 75 |
| | 1-3/4" | | 2-1/4" | 1,365 | 600 | 340 | 150 |
| | 1" | | 3" | 580 | 435 | 145 | 110 |
| | 1-3/8" | | | 815 | 455 | 205 | 115 |
| | 1-3/4" | | 3-3/8" | 1,365 | 600 | 340 | 150 |
| | 1-3/4" | 2-1/2" | 1-1/8" | 1,465 | 1,200 | 365 | 300 |
| | 1-3/4" | | 2-1/4" | 1,465 | 1,200 | 365 | 300 |
| | 1" | | 3" | 580 | 640 | 145 | 160 |
| | 1-3/8" | | | 1,220 | 735 | 305 | 185 |
| 1-3/4" | 3-3/8" | | 1,465 | 1,200 | 365 | 300 | |
| 1/4" | 1-3/4" | 1" | 1" | 1,265 | 340 | 315 | 85 |
| | 1-3/4" | | 1-1/2" | 1,265 | 385 | 315 | 95 |
| | 1-3/4" | | 3" | 1,720 | 420 | 430 | 105 |
| | 1" | | 4" | 770 | 495 | 195 | 125 |
| | 1-3/8" | | | 1,105 | 640 | 275 | 160 |
| | 1-3/4" | | | 1,975 | 645 | 495 | 160 |
| | 1-3/4" | 2-1/2" | 1/2" | 2,200 | 1,590 | 550 | 400 |
| | 1-3/4" | | 3" | 2,200 | 1,635 | 550 | 410 |
| | 1" | | 4" | 805 | 1,260 | 200 | 315 |
| | 1-3/8" | | | 1,755 | 1,635 | 440 | 410 |
| | 1-3/4" | | | 2,290 | 1,635 | 570 | 410 |

1. The values listed are for anchors installed in normal-weight concrete that has come to the minimum designated compressive strength during installation.
2. The h_{nom}, nominal embedment is the measurement from the concrete surface to the embedded end of the anchor.

Technical Data Sheet



ULTIMATE & ALLOWABLE LOAD CAPACITIES IN NORMAL-WEIGHT CONCRETE^{1,2}

| Nominal Anchor Diameter d in. | Minimum Embed. Depth h _{nom} in. | Minimum Edge Distance in. | Minimum Spacing in. | Minimum Concrete Compressive Strength | | | |
|-------------------------------|---|---------------------------|---------------------|---------------------------------------|------------|--------------|------------|
| | | | | f'c=3,500 psi | | | |
| | | | | Ultimate | | Allowable | |
| | | | | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. |
| 3/16" | 1-3/4" | 1" | 1" | 1,145 | 325 | 285 | 80 |
| | 1-3/4" | | 1-1/8" | 1,255 | 325 | 315 | 80 |
| | 1-3/4" | | 2-1/4" | 1,440 | 635 | 360 | 160 |
| | 1" | | 3" | 615 | 460 | 155 | 115 |
| | 1-3/8" | | | 860 | 485 | 215 | 120 |
| | 1-3/4" | | 3-3/8" | 1,440 | 635 | 360 | 160 |
| | 1-3/4" | 2-1/2" | 1-1/8" | 1,550 | 1,265 | 390 | 315 |
| | 1-3/4" | | 2-1/4" | 1,550 | 1,265 | 390 | 315 |
| | 1" | | 3" | 615 | 680 | 155 | 170 |
| | 1-3/8" | | | 1,290 | 775 | 325 | 195 |
| 1-3/4" | 3-3/8" | 1,550 | 1,265 | 390 | 315 | | |
| 1/4" | 1-3/4" | 1" | 1" | 1,360 | 370 | 340 | 95 |
| | 1-3/4" | | 1-1/2" | 1,325 | 415 | 340 | 105 |
| | 1-3/4" | | 3" | 1,850 | 450 | 465 | 115 |
| | 1" | | 4" | 830 | 530 | 210 | 135 |
| | 1-3/8" | | | 1,190 | 690 | 300 | 175 |
| | 1-3/4" | | | 2,120 | 690 | 530 | 175 |
| | 1-3/4" | 2-1/2" | 1/2" | 2,365 | 1,710 | 590 | 430 |
| | 1-3/4" | | 3" | 2,365 | 1,755 | 590 | 440 |
| | 1" | | 4" | 865 | 1,355 | 215 | 340 |
| | 1-3/8" | | | 1,885 | 1,755 | 470 | 440 |
| 1-3/4" | 2,460 | 1,755 | 615 | 440 | | | |

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Technical Data Sheet



ULTIMATE & ALLOWABLE LOAD CAPACITIES IN NORMAL-WEIGHT CONCRETE^{1,2}

| Nominal Anchor Diameter d in. | Minimum Embed. Depth h _{nom} in. | Minimum Edge Distance in. | Minimum Spacing in. | Minimum Concrete Compressive Strength | | | |
|-------------------------------|---|---------------------------|---------------------|---------------------------------------|------------|--------------|------------|
| | | | | f'c=4,000 psi | | | |
| | | | | Ultimate | | Allowable | |
| | | | | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. |
| 3/16" | 1-3/4" | 1" | 1" | 1,245 | 325 | 310 | 80 |
| | 1-3/4" | | 1-1/8" | 1,370 | 325 | 340 | 80 |
| | 1-3/4" | | 2-1/4" | 1,570 | 635 | 395 | 160 |
| | 1" | | 3" | 670 | 460 | 170 | 115 |
| | 1-3/8" | | | 940 | 485 | 235 | 120 |
| | 1-3/4" | | | 3-3/8" | 1,570 | 635 | 395 |
| | 1-3/4" | 2-1/2" | 1-1/8" | 1,690 | 1,265 | 425 | 315 |
| | 1-3/4" | | 2-1/4" | 1,690 | 1,265 | 425 | 315 |
| | 1" | | 3" | 670 | 680 | 170 | 170 |
| | 1-3/8" | | | 1,405 | 775 | 350 | 195 |
| 1-3/4" | 3-3/8" | | | 1,690 | 1,265 | 425 | 315 |
| 1/4" | 1-3/4" | 1" | 1" | 1,525 | 370 | 380 | 95 |
| | 1-3/4" | | 1-1/2" | 1,525 | 415 | 380 | 105 |
| | 1-3/4" | | 3" | 2,075 | 450 | 520 | 115 |
| | 1" | | 4" | 930 | 530 | 235 | 135 |
| | 1-3/8" | | | 1,335 | 690 | 335 | 175 |
| | 1-3/4" | | | 2,380 | 690 | 595 | 175 |
| | 1-3/4" | 2-1/2" | 1/2" | 2,650 | 1,710 | 665 | 430 |
| | 1-3/4" | | 3" | 2,650 | 1,755 | 665 | 440 |
| | 1" | | 4" | 970 | 1,355 | 245 | 340 |
| | 1-3/8" | | | 2,115 | 1,755 | 530 | 440 |
| | 1-3/4" | | | 2,650 | 1,755 | 665 | 440 |

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2. The h_{nom}, nominal embedment is the measurement from the concrete surface to the embedded end of the anchor.