Wedge-Bolt® *Screw Anchor*

PRODUCT DESCRIPTION

The Wedge-Bolt anchor is a one piece, heavy duty screw anchor with a finished hex head. It is easy to identify, fully removable and vibration resistant. The Wedge-Bolt has many unique features and benefits that make it well suited for many applications in a variety of base materials. Optimum performance is obtained using a combination of patented design concepts. The steel threads along the anchor body self tap into the hole during installation and provide positive keyed engagement.

The benefit to the designer is higher load capacities, while the benefit to the user is ease of installation. The Wedge-Bolt can be easily installed with either a powered impact wrench or conventional hand socket.

Wedge-Bolt – Wedge-Bolt screw anchors are designed to be used with a matched tolerance Wedge-Bit™ for optimum performance. The Wedge-Bolt works in fixture clearance holes that are 1/16" over nominal, which is typical of standard fixture holes used in steel fabrication.

Wedge-Bolt OT – The Wedge-Bolt OT is specifically engineered for use in fixture clearance holes sized a minimum of 1/8" over nominal. The Wedge-Bolt OT must be installed with an ANSI rotary drill bit.

GENERAL APPLICATIONS AND USES

- Racking and Shelving
- Support Ledgers
- Fencing
- Maintenance
- Repairs
- Material Handling
- Structural Anchorage
- Masonry Applications
- Food and Beverage Facilities
- Retrofits

FEATURES AND BENEFITS

- One-piece design eliminates possibility of lost anchor parts or improper assembly
- Tested in accordance with ASTM E488 and AC106 criteria
- Qualified for seismic and wind loads
- Wedge-Bolt anchor will fit standard fixture hole dimensions in fabricated steel
- Can be installed with an impact wrench or conventional hand socket
- Fast installation and immediate loading minimizes downtime
- High load capacities and full grip along thread length
- Diameter and length ID stamped on head of each hex head anchor for easy inspection
- Finished hex head provides attractive appearance and eliminates tripping hazard
- No expansion forces transferred to the base material
- Can be installed closer to the edge than traditional expansion anchors
- Versatile installation in concrete, block and brick masonry
- Ratchet teeth on underside of hex washer head lock against the fixture
- Removable and will not leave components in the hole

APPROVALS AND LISTINGS

International Code Council, Evaluation Service (ICC-ES) ESR-1678
(formerly listed in ER-5788)
Southern Building Code Conference International (SBCCI) #2124
City of Los Angeles (COLA) Research Report LARR-25415
Florida Building Code Approval – FL2209.10
Miami-Dade County Notice of Acceptance (NOA) 00-0229.04
Federal GSA Specification – Meets the proof load requirements of FF-S-325C, Group II, Type 4, Class 1 (superseded) and CID A-A1923A, Type 4
Various North American Departments of Transportation (DOT) – See www.powers.com

GUIDE SPECIFICATIONS

CSI Divisions: *03151-Concrete Anchoring, 04081-Masonry Anchorage* and *05090-Metal Fastenings.* Screw Anchors shall be Wedge-Bolt or Wedge-Bolt OT anchors as supplied by Powers Fasteners, Inc., Brewster, NY.

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Carbon Steel Wedge-Bolt

410 Stainless Steel Wedge-Bolt

Carbon Steel Wedge-Bolt OT (ANSI)

HEAD STYLES

Hex Head

ANCHOR MATERIALS

Zinc Plated Carbon Steel
Mechanically Galvanized Carbon Steel
Type 410 Stainless Steel

ANCHOR SIZE RANGE (TYP.)

1/4" diameter x 1 1/4" length to
5/8" x 14" and
3/4" diameter x 8" lengths

SUITABLE BASE MATERIALS

Normal-Weight Concrete
Structural Lightweight Concrete
Grouted Concrete Masonry
Brick Masonry

INSTALLATION SPECIFICATIONS

Carbon Steel Wedge-Bolt

Dimension	Nominal Anchor Diameter, *d*				
	1/4"	3/8"	1/2"	5/8"	3/4"
Wedge-Bit Size, d_{bit} (in.)	1/4	3/8	1/2	5/8	3/4
Wedge-Bit Size Range (in.)	0.255-0.259	0.385-0.389	0.490-0.495	0.600-0.605	0.720-0.725
Fixture Clearance Hole, d_h (in.)	5/16	7/16	9/16	11/16	13/16
Head Washer Height (in.)	7/32	21/64	7/16	1/2	19/32
Washer O.D., d_w (in.)	9/16	47/64	1	1 3/16	1 13/32
Wrench Size (in.)	7/16	9/16	3/4	15/16	1 1/8

410 Stainless Steel Wedge-Bolt

Dimension	Nominal Anchor Diameter, *d*				
	1/4"	3/8"	1/2"	5/8"	3/4"
Wedge-Bit Size, d_{bit} (in.)	1/4	3/8	1/2	5/8	3/4
Wedge-Bit Size Range (in.)	0.255-0.259	0.385-0.389	0.490-0.495	0.600-0.605	0.720-0.725
Fixture Clearance Hole, d_h (in.)	5/16	7/16	9/16	11/16	13/16
Head Washer Height (in.)	7/32	21/64	7/16	1/2	19/32
Washer O.D., d_w (in.)	9/16	47/64	1	1 3/16	1 13/32
Wrench Size (in.)	7/16	9/16	3/4	15/16	1 1/8

Carbon Steel Wedge-Bolt OT (Orange Tip)

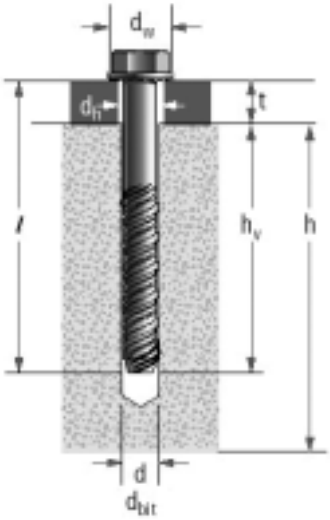
Dimension	Nominal Anchor Diameter, *d*			
	1/4"	3/8"	1/2"	5/8"
ANSI Drill Bit Size, d_{bit} (in.)	1/4	3/8	1/2	5/8
ANSI Drill Bit Size Range (in.)	0.260-0.268	0.390-0.398	0.520-0.530	0.650-0.660
Fixture Clearance Hole, d_h (in.)	3/8	1/2	5/8	3/4
Head Washer Height (in.)	7/32	21/64	7/16	1/2
Washer O.D., d_w (in.)	9/16	47/64	1	1 3/16
Wrench Size (in.)	7/16	9/16	3/4	15/16

Installation Procedure

Select the proper diameter Wedge-Bit for Wedge-Bolt and 410 Stainless Steel Wedge-Bolt installations ***or*** proper diameter ANSI drill bit for Wedge-Bolt OT installations. ANSI drill bits should meet the requirements of ANSI Standard B212.15. Using the proper drill bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required.

Insert the anchor through the fixture into the anchor hole. Begin tightening the anchor by rotating clockwise and applying pressure in toward the base material. A powered impact wrench may also be used. This will engage the first few threads as the anchor begins to advance.

Continue tightening the anchor until the head is firmly seated against the fixture while achieving the required embedment depth.



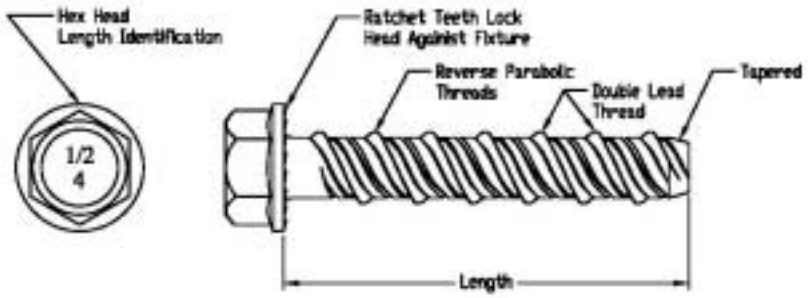
Nomenclature

- d = Diameter of anchor
- d_{bit} = Diameter of drill bit
- d_h = Diameter of fixture clearance hole
- d_w = Diameter of washer
- h = Base material thickness. The minimum value of h should be $1.5h_v$
- h_v = Minimum embedment depth
- l = Overall length of anchor
- t = Fixture thickness

INSTALLATION SPECIFICATIONS

Maximum Clamping Torque (ft.-lbs.)

Base Material	Anchor Diameter				
	1/4"	3/8"	1/2"	5/8"	3/4"
2,000 psi Concrete	5	30	45	75	150
4,000 psi Concrete	10	40	60	95	200
6,000 psi Concrete	10	40	60	95	200
3,000 psi Lightweight Concrete	10	15	40	60	70
Grout Filled Block	10	15	40	60	70
Solid Red Brick	10	30	45	75	100



WEDGE-BOLT AND WEDGE-BOLT OT

MATERIAL SPECIFICATIONS

Carbon Steel Wedge-Bolt and Wedge-Bolt OT

Anchor Component	Component Material
Anchor Body	Case Hardened AISI 1020 / 1040 or 10B21 Carbon Steel
Zinc Plating	ASTM B633, SC1, Type III (Fe/Zn 5) ASTM B695, Class 65, Type I (Mechanically galvanized Wedge-Bolts are available on request)

410 Stainless Steel Wedge-Bolt

Anchor Component	Component Material
Anchor Body	Type 410 Stainless Steel
Coating	Class 4 Sealcoat (Passivated)