



**CSI:** DIVISION: 03 00 00—CONCRETE  
Section: 03 16 00—Concrete Anchors  
  
DIVISION: 05 00 00—METALS  
Section: 05 05 19—Post-Installed Concrete Anchors

### Product Certification System:

The ICC-ES product-certification system includes evaluating reports of tests of standard manufactured product, prepared by accredited testing laboratories and provided by the listee, to verify compliance with applicable codes and standards. The system also involves factory inspections, assessment and surveillance of the listee's quality system.

**Product:** POWER BULL WEDGE ANCHORS IN UNCRACKED CONCRETE

**Listee:** CYW, INC./CHUN YU WORKS (U.S.A.) INC., dba WESTERN STATES FASTENING SYSTEMS

**Evaluation:** The Power Bull Wedge Anchors are torque-controlled expansion anchors. The anchors consist of a stud, nut, washer and expander collar (clip) as illustrated in Figure 1 of this listing and evaluated in accordance with the following standard:

- ASTM E488-15, Test Methods for Strength of Anchors in Concrete and Masonry Elements, ASTM International.

**Findings:** The Power Bull Wedge Anchors have the following tension ultimate load for a single anchor in uncracked concrete as specified in Table 1 of this listing.

### Identification:

1. Anchors are packaged in containers labeled with the company name, address and product name, the product size, and the evaluation report number (ESR-2254) and/or the ICC-ES Listing Report number (ESL-1226), and when applicable, the ICC-ES Listing Mark.

2. The report holder's contact information is the following:

CYW, INC./CHUN YU WORKS (U.S.A.) INC., dba WESTERN STATES FASTENING SYSTEMS  
1037 WALNUT AVENUE  
POMONA, CALIFORNIA 91766  
(909) 627-9915  
[www.westsys.com](http://www.westsys.com)

**Installation:** Each anchor must be installed in accordance with CYW, Inc./Chun Yu Works (U.S.A.) Inc, dba Western States Fastening Systems' published installation instructions. The minimum embedment, concrete requirements and installation parameters must comply with Table 1 and Figure 2.

### Conditions of listing:

1. The listing report addresses only conformance with the standard noted above.
2. Approval of the product's use is the sole responsibility of the local code official.
3. The listing report applies only to the materials tested and as submitted for review by ICC-ES.
4. The mean ultimate loads listed in Table 1 are not intended to be used as design values; results of reliability and service-condition tests have not been included in this listing.

TABLE 1—DATA FOR POWER BULL WEDGE ANCHORS FOR USE IN CONCRETE

INSTALLATION INFORMATION	SYMBOL	UNITS	Nominal Anchor Diameter			
			3/8 inch	1/2 inch	5/8 inch	3/4 inch
Anchor diameter	$d_a$	in.	3/8	1/2	5/8	3/4
Minimum diameter of hole clearance in fixture	$d_h$	in.	1/2	5/8	3/4	7/8
Nominal drill bit diameter	$d_{bit}$	in.	3/8	1/2	5/8	3/4
Minimum nominal embedment depth	$h_{nom}$	in.	2 <sup>5</sup> / <sub>16</sub>	2 <sup>7</sup> / <sub>8</sub>	3	3 <sup>15</sup> / <sub>16</sub>
Minimum effective embedment depth	$h_{ef}$	in.	2	2 <sup>1</sup> / <sub>2</sub>		3 <sup>1</sup> / <sub>2</sub>
Minimum hole depth	$h_o$	in.	2 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	4 <sup>1</sup> / <sub>8</sub>
Installation torque	$T_{inst}$	ft-lb	30	80	130	
Minimum concrete thickness	$h_{min}$	in.	4	5	6	7
Critical edge distance	$c_{ac}$	in.	4	5	6	7
Mean Ultimate Load From Static Tests <sup>3</sup>	Symbol	Units	Nominal Anchor Diameter			
			3/8 inch	1/2 inch	5/8 inch	3/4 inch
Mean ultimate static tensile load, uncracked low-strength normal-weight concrete <sup>1</sup>	$F_m$	lb.	3,900	5,920	6,180	12,930
Mean ultimate static tensile load, uncracked high-strength normal-weight concrete <sup>2</sup>	$F_m$	lb.	5,745	10,520	10,400	15,025

For SI: 1 in = 25.4 mm, 1 in<sup>2</sup> = 6.451x10<sup>-4</sup> m, 1 ft-lb = 1.356 Nm, 1 lb/in<sup>2</sup> = 6.895 Pa.

<sup>1</sup> Tabulated values are adjusted to f'c=2,500 psi.

<sup>2</sup> Tabulated values are adjusted to f'c=6,500 psi.

<sup>3</sup> Mean ultimate loads with no safety factors applied differ from, and are higher than, the characteristic capacity as defined in ACI 318, ACI 355.2 and AC 193. Characteristic capacities for design in accordance with ACI 318 must include assessment of reliability and service condition tests, design information for concrete breakout and steel capacity, and applicable strength reduction factors.

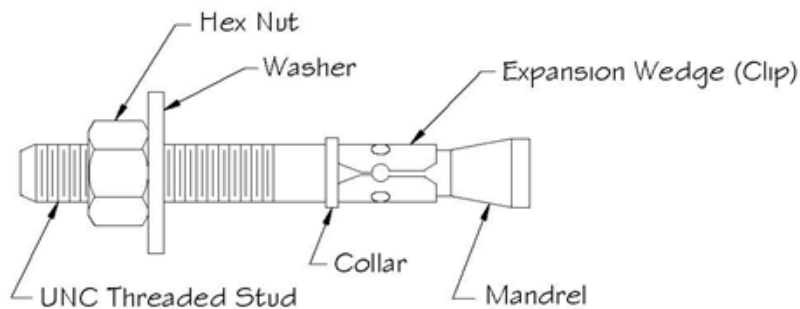


FIGURE 1—POWER BULL WEDGE ANCHOR

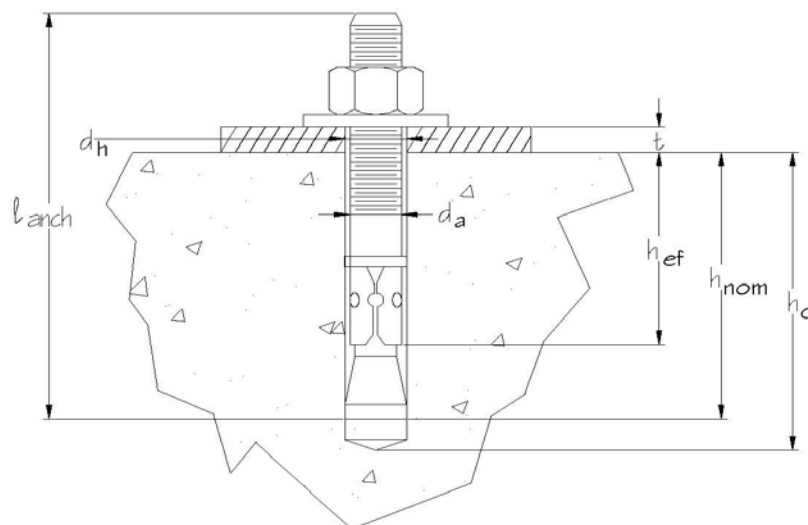


FIGURE 2—POWER BULL WEDGE ANCHOR INSTALLATION