

**STRUCTURAL MATERIALS TESTING BRANCH
OFFICE OF STRUCTURAL MATERIALS**

Updated
4/26/2013

AUTHORIZED STUD MECHANICAL EXPANSION ANCHORS										
		Wedge 					External Plug 			
M A N U F A C T U R E R	Powers Fasteners (Rawplug)	Name	Power Stud					Set-Bolt		
		Stud Diameter	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1/4 inch	1/2 inch	3/4 inch
		Model	7400 1/4" φ x 1-3/4"	Not Available	7422 1/2" φ x 3-3/4"	Not Available	7440 3/4" φ x 4-1/4"	Not Available	7145 1/2" φ x 2-3/4"	7189 3/4" φ x 4-1/4"
		Min. Hole	1-1/8"		2-1/4"		3-3/8"		1-7/8"	2-7/8"
		Drill Bit Dia.			1/2"		3/4"		1/2"	3/4"
		Drill Bit Tip Tolerance	0.260"/0.268" (min/max)		0.520"/0.530" (min/max)		0.775"/0.787" (min/max)		0.520"/0.530" (min/max)	0.775"/0.787" (min/max)
		Installation	8 ft-lbs		60 ft-lbs		175 ft-lbs		50 ft-lbs	125 ft-lbs
	Star	Name	Wedge-Type Stud Bolt					Stud-Bolt Anchor¹		
		Stud Diameter	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1/4 inch	1/2 inch	3/4 inch
		Model	3515-15000	Not Available	3535-36000 1/2" φ x 3-3/4"	Not Available	3555-42000 3/4" φ x 4-1/4"	3815-16000	3835-26000 1/2" φ x 2-3/4"	3855-42000
		Min. Hole	Not Approved		2-1/4"		3-1/4"	1-3/4"	Not Approved	
		Drill Bit Dia.			1/2"		3/4"	1/2"		
		Drill Bit Tip Tolerance		0.520"/0.530" (min/max)	0.775"/0.787" (min/max)	0.520"/0.530" (min/max)				
Torque		50 ft-lbs		175 ft-lbs		50 ft-lbs		Not Approved		

Notes:

1. Installation Tool: 3835-0700 is required for installing 1/2-inch diameter external-plug stud-bolt anchor.
2. Authorized anchors have been creep tested per CT 681 (Caltrans Standard Specification 75) Washers and nuts should accompany the anchors.
3. This table lists basic installation details for authorized anchors, see Caltrans Standard Specifications if manufacturer installation torque is not provided.
4. Anchor lengths shown are minimum acceptable lengths - the use of longer anchors is permitted without further testing.
5. Stud anchor is typically electroplated with Zinc and is not suitable in a corrosive environment.

AUTHORIZED STUD MECHANICAL EXPANSION ANCHORS										
		Wedge 					External Plug 			
M A N U F A C T U R E R	Type	Trubolt					Stud Anchor			
	ITW Ramset/ Red Head	Name								
		Stud Diameter	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch	1/4 inch	1/2 inch	3/4 inch
		Model	WS 1432 1/4"φ x 3-1/4"	WS 3850 3/8" φ x 5"	Not Approved	WS 5870 5/6" φ x 7"	WS 3470 3/4" φ x 7"	JS-14C	JS-12C 1/2"φ x 2-3/4"	JS-34C
		Hole Depth	2"	3"		5"	5"	Not Approved	1-7/8"	Not Approved
		Drill Bit Dia.	1/4"	3/8"		5/8"	3/4"		1/2"	
		Drill Bit Tip Tolerance	0.260"/0.268" (min/max)	0.390"/0.398" (min/max)	0.650"/0.660" (min/max)	0.775"/0.787" (min/max)	0.520"/0.530" (min/max)			
		Installation	8 ft-lbs	25 ft-lbs	90 ft-lbs	175 ft-lbs	50 ft-lbs			
	Simpson Strong Tie	Name	Strong Bolt 2							
		Stud Diameter	1/4 inch	3/8 inch	1/2 inch	5/8 inch	3/4 inch			
Model		Not submitted	CS STB2 & SS STB2 3/8" φ x 5"	CS STB2 & SS STB2 1/2" φ x 5-1/2"	CS STB2 & SS STB2 5/8" φ x 7"	Not submitted				
Hole Depth			2-7/8"	2-3/4"	3-3/8"					
Drill Bit Dia.			3/8"	1/2"	5/8"					
Drill Bit Tip Tolerance			0.390"/0.398" (min/max)	0.520"/0.530" (min/max)	0.650"/0.660" (min/max)					
Torque			30 ft-lbs	60 ft-lbs	90 ft-lbs					

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