

CALTRANS - STRUCTURAL MATERIALS TESTING BRANCH  
OFFICE OF STRUCTURAL MATERIALS

**AUTHORIZED SHELL-TYPE MECHANICAL EXPANSION ANCHORS**

		Type	Internal Plug			External Plug		
<b>M A N U F A C T U R E R</b>	<b>ITW Ramset/ Red Head</b>	<b>Name</b>	<b>Multi Set II Anchor</b>			<b>Non-Drilling Anchor</b>		
		<b>Stud Diameter</b>	<b>1/4 inch</b>	<b>1/2 inch</b>	<b>3/4 inch</b>	<b>1/4 inch</b>	<b>1/2 inch</b>	<b>3/4 inch</b>
		<b>Installation Torque</b>	<b>4 ft-lbs</b>	<b>22 ft-lbs</b>	<b>80 ft-lbs</b>	<b>4 ft-lbs</b>	<b>22 ft-lbs</b>	<b>80 ft-lbs</b>
		<b>Model</b>	RM-14 1/4" φ x 1"	RM-12 1/2" φ x 2"	RM-34 3/4" φ x 3"	J-14 1/4" φ x 1-1/8"	J-12 1/2" φ x 2-1/16"	J-34
		<b>Hole Depth</b>	1-1/2"	2-1/2"	3-1/2"	1-5/8"	2-9/16"	Not Approved
		<b>Drill Bit Dia.</b>	3/8"	5/8"	1"	7/16"	11/16"	
		<b>Drill Bit Tip Tolerance</b>	0.390"/0.398" (min/max)	0.650"/0.660" (min/max)	1.030"/1.042" (min/max)	0.458"/0.468" (min/max)	0.713"/ 0.723" (min/max)	
		<b>Installation Tool</b>	RT-14	RT-12	RT-34	JD-14	JD-12	
	<b>POWERS FASTNERS (Rawplug)</b>	<b>Name</b>	<b>Steel Drop-In</b>			<b>Steel Drop-In Ext. Plug</b>		
<b>Stud Diameter</b>		<b>1/4 inch</b>	<b>1/2 inch</b>	<b>3/4 inch</b>	<b>1/4 inch</b>	<b>1/2 inch</b>	<b>3/4 inch</b>	
<b>Model</b>		6304	6308 1/2" φ x 2-3/8"	6312 3/4" φ x 3-1/2"	6460	6465 1/2" φ x 2"	6468 3/4" φ x 3"	
<b>Hole Depth</b>		Not Approved	2-7/8"	4"	Not Approved	2-1/2"	3-1/2"	
<b>Drill Bit Dia.</b>			5/8"	1"		11/16"	1"	
<b>Drill Bit Tip Tolerance</b>			0.650"/0.660" (min/max)	1.030"/1.042" (min/max)		0.713"/ 0.723" (min/max)	1.030"/1.042" " (min/max)	
<b>Installation Tool</b>			6309	6313		6808	6812	

Notes: ( No changes have been made to the content of this list since Nov. 20, 1997)

1. Authorized shell-type anchors shown in the above table have been creep tested per CT 681 (Caltans Standard Specs, Section 75).
2. The table lists basic installation details for authorized anchors.
3. The hole depths are the minimum required by Caltrans and include a 1/2-inch recess (See Caltrans Bridge Design Aids, Section 5).
4. Shell-type units shown above are electroplated with zinc, and these are not suitable in an corrosive environment.
5. These anchors are generally not tapped oversize to accept a hot-dip galvanized stud or cap screw, and are not furnished with a stud, nut, or washer.