

Performance/Submittal

Ramset fasteners may be specified by their type or catalog number to satisfy fastening requirements.

PIN SPECIFICATIONS

- | Made from AISI 1060-1065 steel. Austempered to a core hardness of 52-56 Rc
- | Typical tensile strength: 270,000 psi
- | Typical shear strength: 162,000 psi
- | Standard finishes
 - Proprietary black
 - Mechanical zinc plate to a minimum thickness of .0002 meets requirements of ASTM B695
 - Ramguart

APPROVALS/LISTINGS

- | **ICC Evaluation Service, Inc.** #ER-2690 Sill Plate
#ESR-1799 Powder Pins & Clips
- | **City of Los Angeles** #RR-22668 Powder Pins

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FASTENERS IN NORMAL WEIGHT CONCRETE								
PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH ALLOWABLE LOAD — <i>Ultimate Load</i>					
			2000 PSI		4000 PSI		6000 PSI	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
1500/ 1600 SERIES	0.145	3/4	50 655	66 739	100 511	104 552	--- ---	--- ---
		1	152 943	166 1229	157 937	182 1342	--- ---	--- ---
		1-1/4	159 1078	265 1665	179 1043	267 1538	--- ---	--- ---
		1-1/2	154 1450	340 2027	209 1357	342 1712	--- ---	--- ---
SP	0.150	3/4	--- ---	--- ---	150 803	105 786	81 493	82 454
SP SERIES	0.150/ .180	1	154 1043	200 1173	243 1307	175 1037	189 1125	210 1177
		1-1/4	207 1553	230 1636	298 1749	218 1471	213 1568	305 1780
		1-1/2	--- ---	--- ---	384 2126	391 1957	239 1886	594 2968
1900	0.145	3/4	105 694	71 458	101 685	99 627	--- ---	--- ---

Note 1: **ALLOWABLE** loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font.

Note 2: Testing conducted in accordance with ICC AC70 & ASTM E1190.

Note 3: Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5.

Note 4: Values shown in concrete are for the fastener only. Connected members must be investigated separately.

Note 5: Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor.

Note 6: Job site testing may be required to determine actual job site values.

Note 7: Minimum edge distance is 3 inches unless otherwise approved.

FASTENERS IN STEEL												
PART NUMBER SERIES	SHANK DIA. (INCH)	TYPE OF SHANK	INSTALLED IN A36 STRUCTURAL STEEL — STEEL THICKNESS (INCHES)									
			ALLOWABLE LOAD — <i>Ultimate Load</i>									
			3/16		1/4		3/8		1/2		3/4	
		TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	
1500/1600	0.145	SMOOTH	81 <i>790</i>	373 <i>2039</i>	181 <i>1269</i>	273 <i>1642</i>	397 <i>2169</i>	489 <i>2771</i>	243 <i>1328⁸</i>	277 <i>1514⁸</i>	---	---
		KNURLED	296 <i>1633</i>	636 <i>3516</i>	584 <i>3384</i>	659 <i>3822</i>	680 <i>3755</i>	730 <i>4030</i>	253 <i>1459⁸</i>	293 <i>1632⁸</i>	---	---
SP	0.150	SMOOTH	385 <i>2107</i>	662 <i>3618</i>	445 <i>2549</i>	477 <i>2736</i>	393 <i>2145</i>	574 <i>3137</i>	948 <i>5180</i>	597 <i>3500</i>	234 <i>1244⁸</i>	356 <i>1895⁸</i>

FASTENERS IN STEEL												
PART NUMBER SERIES	SHANK DIA. (INCH)	TYPE OF SHANK	INSTALLED IN A572 GRADE 50 STRUCTURAL STEEL — STEEL THICKNESS (INCHES)									
			ALLOWABLE LOAD — <i>Ultimate Load</i>									
			3/16		1/4		3/8		1/2		3/4	
		TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	
1500/1600	0.145	SMOOTH	---	---	---	---	---	---	---	---	---	---
		KNURLED	260 <i>1609</i>	499 <i>3182</i>	579 <i>3411</i>	725 <i>4272</i>	383 <i>2216⁷</i>	595 <i>3431⁷</i>	---	---	---	---
SP	0.150	SMOOTH	356 <i>2123</i>	569 <i>3394</i>	554 <i>3232</i>	637 <i>3710</i>	604 <i>3447</i>	602 <i>3437</i>	814 <i>4473⁹</i>	820 <i>4503⁹</i>	243 <i>1362⁸</i>	381 <i>2141⁸</i>

Note 1: **ALLOWABLE** loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font.

Note 2: Testing conducted in accordance with ICC AC70 & ASTM E1190.

Note 3: Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5.

Note 4: Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor.

Note 5: Job site testing may be required to determine actual job site values.

Note 6: Values shown are for fastenings that have the entire pointed end of the fastener driven through the steel plate; except as noted below.

Note 7: Fastener penetration is 3/8" minimum

Note 8: Fastener penetration is 7/16" minimum

Note 9: Fastener penetration is 1/2" minimum

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FASTENERS IN LIGHTWEIGHT CONCRETE						
PART NUMBER SERIES	SHANK DIAMETER (INCH)	MINIMUM PENETRATION (INCH)	ALLOWABLE WORKING VALUES INSTALLED IN 3000 PSI LIGHTWEIGHT CONCRETE			
			ALLOWABLE LOAD — <i>Ultimate Load</i>			
			3000 PSI LIGHTWEIGHT W/DECKING		3000 PSI LIGHTWEIGHT	
			LOWER FLUTE TENSION	LOWER FLUTE SHEAR	TENSION (LBS)	SHEAR (LBS)
1500 SERIES	0.145	3/4	76 <i>395</i>	260 <i>1409</i>	167 <i>837</i>	179 <i>894</i>
		1	134 <i>668</i>	265 <i>1505</i>	200 <i>998</i>	228 <i>1141</i>
		1-1/4	157 <i>784</i>	269 <i>1344</i>	333 <i>1664</i>	400 <i>2090</i>
		1-1/2	233 <i>1163</i>	346 <i>1728</i>	391 <i>1657</i>	410 <i>2050</i>
SP SERIES	0.150/ .180	1	119 <i>593</i>	336 <i>1679</i>	226 <i>1129</i>	250 <i>1249</i>
		1-1/4	175 <i>957</i>	372 <i>1860</i>	329 <i>1644</i>	377 <i>1885</i>
		1-1/2	179 <i>1055</i>	426 <i>2128</i>	406 <i>2030</i>	380 <i>1900</i>

Note 1: **ALLOWABLE** loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font.

Note 2: Testing conducted in accordance with ICC AC70 & ASTM E1190.

Note 3: Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5.

Note 4: Values shown in concrete are for the fastener only. Connected members must be investigated separately.

Note 5: Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor.

Note 6: Job site testing may be required to determine actual job site values.

ANGLE CLIPS IN CONCRETE								
PART NUMBER SERIES	SHANK DIA. (INCH)	MINIMUM PENETRATION (INCH)	ALLOWABLE WORKING VALUES INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH ALLOWABLE LOAD — <i>Ultimate Load</i>					
			4000 PSI			6000 PSI		
			TENSION (LBS)	SHEAR (LBS)	OBLIQUE (LBS)	TENSION (LBS)	SHEAR (LBS)	OBLIQUE (LBS)
SDC100 SDC125	0.145	7/8	115 <i>575</i>	120 <i>1014</i>	145 <i>726</i>	---	---	---
SDC125	0.145	1-1/8	130 <i>744</i>	167 <i>1090</i>	205 <i>1032</i>	---	---	---
SPC78	0.150	3/4	155 <i>897</i>	188 <i>1050</i>	---	150 <i>788</i>	153 <i>949</i>	140 <i>769</i>
SPC114	.150/.180	1-1/8	127 <i>811</i>	226 <i>1130</i>	181 <i>904</i>	169 <i>853</i>	300 <i>1500</i>	223 <i>1114</i>

ANGLE CLIPS IN CONCRETE								
PART NUMBER SERIES	SHANK DIA. (INCH)	MINIMUM PENETRATION (INCH)	ALLOWABLE WORKING VALUES INSTALLED IN 3000 PSI LIGHTWEIGHT CONCRETE ALLOWABLE LOAD — <i>Ultimate Load</i>					
			3000 PSI LIGHTWEIGHT WITH METAL DECKING					
			LOWER FLUTE TENSION (LBS)	LOWER FLUTE SHEAR (LBS)	LOWER FLUTE OBLIQUE (LBS)	UPPER FLUTE TENSION (LBS)	UPPER FLUTE SHEAR (LBS)	
SDC100 SDC125	0.145	7/8	67 <i>335</i>	237 <i>1186</i>	90 <i>448</i>	104 <i>571</i>	310 <i>1678</i>	
SDC125	0.145	1-1/8	94 <i>471</i>	276 <i>1378</i>	119 <i>596</i>	106 <i>528</i>	319 <i>1597</i>	
SPC78	0.150	3/4	59 <i>293</i>	202 <i>1109</i>	65 <i>323</i>	84 <i>419</i>	324 <i>1622</i>	
SPC114	.150/.180	1-1/8	157 <i>786</i>	272 <i>1358</i>	153 <i>766</i>	180 <i>899</i>	334 <i>1673</i>	

Note 1: **ALLOWABLE** loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font.

Note 2: Testing conducted in accordance with ICC AC70 & ASTM E1190.

Note 3: Safety factors are based on coefficient of variation. In accordance with ICC AC70, the safety factor will be no less than 5.

Note 4: Values shown in concrete are for the fastener only. Connected members must be investigated separately.

Note 5: Cyclic, fatigue, shock loads, and other design criteria may require a different safety factor.

Note 6: Job site testing may be required to determine actual job site values.

Note 7: Minimum edge distance is 3 inches unless otherwise approved.

Note 8: For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa.

Note 8: Metal deck is 20g.

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LADD 652 ANGLE CLIP ASSEMBLY						
PART NUMBER SERIES	SHANK DIA. (INCH)	MINIMUM PENETRATION (INCH)	ALLOWABLE WORKING VALUES INSTALLED IN STONE AGGREGATE CONCRETE CONCRETE COMPRESSIVE STRENGTH ALLOWABLE LOAD — <i>Ultimate Load</i>			
			3000 PSI		4000 PSI	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
LADD CEILING SYSTEM	0.152	1-1/8	211 <i>1688</i>	---	193 <i>1544</i>	---

Note 1: **ALLOWABLE** loads are shown in the **LARGE BOLD** font, *Ultimate* loads are shown in *smaller italic* font.

Note 2: Except as noted, values shown reflect an 8 to 1 safety factor.

Note 3: Values shown are for concrete at the designed strength and are for the clip system only

Note 4: Cyclic, fatigue or shock loads and other design criteria may require a different safety factor.

Note 5: Job site testing may be required to determine actual job site values.

Note 6: Edge distance is 3 inches unless otherwise approved.

Note 7: For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa