

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
 - Ramguard

APPROVALS/LISTINGS

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

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 <i>655</i>	66 <i>739</i>	100 <i>511</i>	104 <i>552</i>	.....	.....
		1	152 <i>943</i>	166 <i>1229</i>	157 <i>937</i>	182 <i>1342</i>	.....	.....
		1-1/4	159 <i>1078</i>	265 <i>1665</i>	179 <i>1043</i>	267 <i>1538</i>	.....	.....
		1-1/2	154 <i>1450</i>	340 <i>2027</i>	209 <i>1357</i>	342 <i>1712</i>	.....	.....
SP	0.150	3/4	.....	.....	150 <i>803</i>	105 <i>786</i>	81 <i>493</i>	82 <i>454</i>
		1	154 <i>1043</i>	200 <i>1173</i>	243 <i>1307</i>	175 <i>1037</i>	189 <i>1125</i>	210 <i>1177</i>
SP SERIES	.150/.180	1-1/4	207 <i>1553</i>	230 <i>1636</i>	298 <i>1749</i>	218 <i>1471</i>	213 <i>1568</i>	305 <i>1780</i>
		1-1/2	.....	.....	384 <i>2126</i>	391 <i>1957</i>	239 <i>1886</i>	594 <i>2968</i>
1900	0.145	3/4	105 <i>694</i>	71 <i>458</i>	101 <i>685</i>	99 <i>627</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

Tables converted to metric are available on our website.

FASTENER 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)	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>

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)	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. **Note 10:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa
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FASTENER 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	SHEAR			
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>1957</i>	410 <i>2050</i>
SP SERIES	.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. **Note 7:** For SI: 1 lbf = 4.448 N, 1 inch = 25.4 mm, 1 ksi = 6.89MPa
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ANGLE CLIP IN 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>					
			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>

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 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 clip assembly 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 9:** Metal deck is 20g.

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LADD 652 ANGLE CLIP ASSEMBLY

PART NUMBER SERIES	SHANK DIAMETER (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

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