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—Class 5 Type 1

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 - *Ultimate Load*					
			2000 PSI		4000 PSI		6000 PSI	
			TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
TE	0.157	3/4	**71** *627*	**116** *713*	**71** *559*	**116** *685*	**109** *753*	**117** *712*
		1	**197** *986*	**216** *1463*	**258** *1390*	**216** *1421*	**214** *1313*	**383** *1998*
		1-1/4	**264** *1399*	**283** *1626*	**377** *1886*	**317** *1846*	**415** *2074*	**349** *1858*
		1-1/2	**212** *1453*	**297** *1719*	**242** *1211*	**479** *2393*		
TEC100	0.150	7/8	---	---	**207** *1035*			

FASTENERS IN LIGHT WEIGHT CONCRETE

PART NUMBER SERIES	SHANK DIA	EMBED	3000 Lt WT	
			Tension	Shear
TE SERIES	0.157	3/4	**152** *1010*	**159** *998*
		1	**325** *1625*	**347** *1737*
		1-1/4	**358** *1790*	**437** *2239*
		1-1/2	**466** *2332*	**478** *2392*
TEC100 90° Ceiling Clip	0.157	7/8	---	---

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

INSTALLED IN A36 STRUCTURAL STEEL

PART NUMBER SERIES	SHANK DIA	SHANK TYPE	3/16		1/4		3/8		1/2		≥3/4	
			Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear
TE SERIES	0.157	KNURLED	**323** *1739*	**606** *3257*	**562** *3022*	**673** *3621*	**934** *5095*	**820** *4473*	**603** *3286*	**766** *4178*	**343**[6]	**496**[6]

INSTALLED IN A572-GR50 STRUCTURAL STEEL

PART NUMBER SERIES	SHANK DIA	SHANK TYPE	3/16		1/4		3/8		1/2		≥3/4	
			Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear
TE SERIES	0.157	KNURLED	**442** *2400*	**676** *3674*	**630** *3747*	**662** *3942*	**760** *4421*	**725** *4218*	**582**[5] *3118*	**532** *2851*	**311**[5]	**469**[5]

Notes:
1) Fasteners tested to ASTM E1190 & ICC-ES AC70 (March 1, 2010)
2) Allowable loads are shown
3) Allowable loads and safety factors are based on coefficient of variation in accordance with ICC AC70, the safety factor will be no less than 5
4) Values shown for steel base materials have the pointed end of the fastener driven through the steel plate
5) Fastener penetration into steel must be minimum 7/16 inch
6) Fastener penetration into steel must be minimum 3/8 inch

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—Class 5 Type 1

APPROVALS/LISTINGS

- **ICC Evaluation Service, Inc.**

  #ESR-2690 Sill Plate
  #ESR-1799 Powder Pins & Clips
- **City of Los Angeles**

  #RR-22668 Powder pins

FASTENERS INSTALLED THROUGH METAL DECK INTO MINIMUM 3000 PSI LIGHTWEIGHT CONCRETE

PART NUMBER SERIES	SHANK DIAMETER (INCH)	SHANK DESCRIPTION	MINIMUM PENETRATION (INCH)	3-INCH DEEP W TYPE STEEL DECK		1 1/2 INCH DEEP B TYPE STEEL DECK			
						UPPER FLUTE		LOWER FLUTE	
				TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)	TENSION (LBS)	SHEAR (LBS)
TE	0.157	Smooth-tapered	3/4	**106** *529*	**265** *1326*	**131** *656*	**261** *1305*	**154** *769*	**307** *1537*
			1	**152** *761*	**327** *1634*	**156** *782*	**273** *1365*	**138** *692*	**265** *1326*
			1-1/4	**164** *821*	**330** *1650*	-	-	-	-
			1-1/2	**238** *1191*	**448** *2240*	-	-	-	-

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

FASTENERS DRIVEN INTO CONCRETE MASONRY UNITS (CMU BLOCK)

PART NUMBER SERIES	SHANK DIA	EMBED	HOLLOW UNGROUTED CMU				GROUT-FILLED CMU					
PART NUMBER SERIES	SHANK DIA	EMBED	FACE SHELL		MORTAR JOINT		FACE SHELL		MORTAR JOINT		TOP OF GROUTED CELL	
			Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear	Tension	Shear
TE	0.157	1	**33** *329*	**100** *693*	**42** *443*	**68** *746*	**139** *875*	**145** *936*	**91** *950*	**127** *1328*	**165** *851*	**171** *922*

For SI: 1 Inch = 25.4 mm, 1 lbf = 4.448 N.
Fasteners must be installed a minimum of 5.1 inches from the end of the wall.
Fasteners must be installed at the center of the CMU cell. No more than one fastener may be installed in an individual CMU cell
Applicable to fasteners installed in the horizontal mortar joint (bed joint). Minimum fastener spacing must be 5.1 inches
Allowable shear load value applies to load applied perpendicular to the mortar joint
Fastener must be installed vertically at the top, center of grouted cell
Shear load can be in any direction perpendicular to the axis of the fastener

TE Embedment depth is easily identifiable by head stamps.