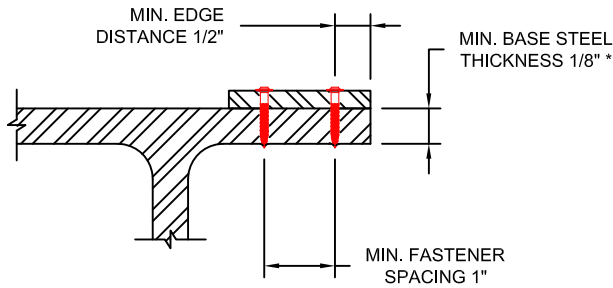


# Power Driven Fastener General Notes

(Guidelines per ICC-ES ESR-1663, ESR-1752, and ESR-2269)

## General Notes for Fasteners in Steel

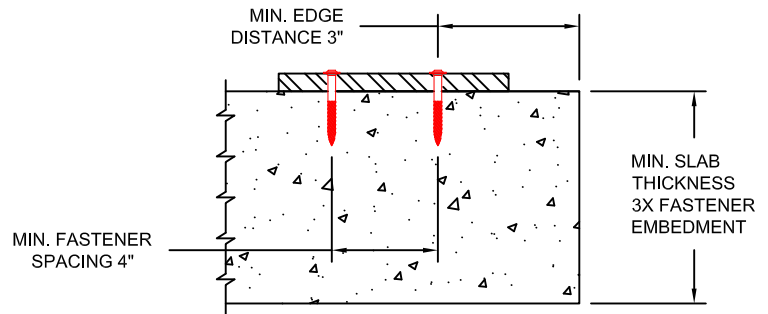
1. Fasteners must be driven to minimum embedment depth specified in table.
2. All power driven fasteners shall be installed according to manufacturer's installation instructions.
3. Unless noted otherwise, all power driven fastener types and dimensions shall be as listed in table below.
4. Contractor must check base steel material being fastened to and select appropriate fastener for the application.
5. Contact Hilti Technical Support (1-877-749-6337) for assistance.



\* Except for X-U and X-U 15

## General Notes for Fasteners in Concrete

1. Fasteners must be driven to minimum embedment depth specified in table.
2. All power driven fasteners shall be installed according to manufacturer's installation instructions.
3. Unless noted otherwise, all power driven fastener types and dimensions shall be as listed in the table below.
4. Contractor must check concrete being fastened to and select appropriate fastener for the application.
5. Contact Hilti Technical Support (1-877-749-6337) for assistance.



## Hilti Power Driven Fasteners Installed in Steel (lb) <sup>1,2,4,5</sup>

Hilti Fastener Nomenclature	Shank Diameter (in.)	Embedment		Allowable Load Type	Steel Plate Thickness (in.) <sup>3</sup>					
		Steel Thick. (in.)	Min. Embed. (in.)		1/8	3/16	1/4	3/8	1/2	≥3/4
X-U	0.157	1/8-3/8	pt. pen.	Tension	-	535	775	935	900	350
		1/2	pt. pen.	Shear	-	720	720	720	720	375
		≥3/4	1/2							
X-U 15	0.145	1/8-3/8	pt. pen.	Tension	-	155	230	420	365	365
		1/2	15/32	Shear	-	395	395	450	500	400
		3/4	15/32							
X-S13	0.145	1/8-3/8	pt. pen.	Tension	140	300	300	300	-	-
				Shear	300	450	450	450	-	-
X-S16 P8TH	0.145	3/16-1/2	pt. pen.	Tension	-	225	225	225	225	-
				Shear	-	430	430	430	430	-
X-EGN	0.118	1/8-1/4	pt. pen.	Tension	140	220	225	280	280	280
		3/8-3/4	0.320	Shear	230	245	290	330	330	330
X-GHP	0.118	1/8-3/8	pt. pen.	Tension	125	170	200	250	-	-
				Shear	230	245	230	255	-	-

### Notes:

1. All recommended allowable loads and data from currently available ICC-ES ESR-1663, ESR-1752, or ESR-2269.
2. Allowable loads computed using ICC-ES AC70 equation 3-1 (variable safety factor).
3. Unless otherwise noted, substrate is steel plate meeting minimum material properties of ASTM A36.
4. Minimum fastener spacing is 1 inch; minimum fastener edge distance is 1/2-inch; minimum base material steel thickness is 1/8-inch unless otherwise noted.
5. Contact Hilti Technical Support at 1-877-749-6337 for technical assistance.

## Hilti Power Driven Fasteners Installed in Normal Weight Concrete (lb) <sup>1,2,5,6</sup>

Hilti Fastener Nomenclature	Shank Diameter (in.)	Minimum Embedment (in.)	Allowable Load Type	Compressive Strength <sup>3,4</sup>		
				2000 psi	4000 psi	6000 psi
X-U	0.157	1	Tension	165	170	110
			Shear	190	225	280
X-C	0.138	1	Tension	85	90	-
			Shear	150	200	-
X-C22P8T	0.138	3/4	Tension	55	90	-
			Shear	130	170	-
X-GN	0.118	1	Tension	115	115	-
			Shear	220	220	-
X-GHP	0.118	5/8	Tension	-	50	50
			Shear	-	120	90

### Notes

1. All recommended allowable loads and data from currently available ICC-ES ESR-1663, ESR-1752, or ESR-2269.
2. Allowable loads computed using ICC-ES AC70 equation 3-1 (variable safety factor).
3. Substrate is normal weight concrete with stone aggregate designed in accordance with ASTM C33.
4. Compressive strengths are at time of fastener installation.
5. Minimum fastener spacing is 4 inches; minimum fastener edge distance is 3 inches; minimum base material concrete thickness is 3 times fastener embedment.
6. Contact Hilti Technical Support at 1-877-749-6337 for technical assistance.