

GENERAL INFORMATION

SPIRAL CSI PIN

Domed Head Pins with 0.157" Shank Diameter

INTRODUCTION

Spiral CSI Drive Pins are designed for permanently fastening a fixture to concrete, some types of masonry, and A36 or A572 structural steel. The pins are manufactured with an 8mm head and 0.157" diameter shank in various lengths. A spiral knurled shank design provides consistent optimized performance in steel base materials. A 8mm plastic washer is mounted over the point to retain the drive pin in the fastener guide of the tool providing centered guidance during the driving operation.

GENERAL APPLICATIONS AND USES

- Attaching Steel to Concrete, Block or Steel
- Attaching Wood members to Concrete, Block or Steel
- Attaching accessories to Concrete, Block or Steel
- Attaching ceiling clips and threaded rod to Concrete or Steel

APPROVALS AND LISTINGS

- International Code Council, Evaluation Service (ICC-ES), ESR-2024

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SPIRAL CSI PIN



SPIRAL CSI PIN COLLATED



SPIRAL CSI PINS WITH WASHER

SELECTION CHART GUIDE

Pins	Dimensions		Base		Powers Tools															Other Tools						Approvals & Listings											
	Shank Length	Shank Diameter	Concrete	Grout-filled CMU	Steel	P1000	T1000	P2201	P355	P7201	P3500/PA3500	P3801	P3600	PA351	R60	Sniper	Z21	M70	D45	D60/D60L	D45/D60/D60L	MD380	SAZ70	Cobra	Viper		DXE72/DX400	DX600N	DX35	DX2	DX350/DX351/DX36M	DX451	DXA40	DXA41	DX2	DX460	
Spiral CSI Drive Pins	1/2" to 2-7/8"	0.157"	●	○	●	●	●	●	○	●	●			●	●		●		●		●	●	●	●					●	●	○	●	●	●			ICC-ES ESR-2024
	5/8" to 2"	0.157"												●															●								ICC-ES ESR-2024
	3/4" to 2-7/8"	0.157"	●		●	●	●	●	○	●					●	●		●		●		●	●	●	●					●	●	○	●	●			ICC-ES ESR-2024

● Suitable ○ May be Suitable

POWDER ACTUATED

SPIRAL CSI PIN
Domed Head Pins with 0.157" Shank Diameter

Ultimate and Allowable Load Capacities for CSI Fasteners in Lightweight Concrete and Sand-Lightweight Concrete with or without Steel Deck (3-inch Deep Profile)^{1,2,3,8}

Fastener Description	Minimum Embed. Depth h_v in. (mm)	Minimum Concrete Compressive Strength, $f'c = 3,000$ psi											
		Directly into Concrete ^{4,5}				Through Soffit of Steel Deck Into Concrete (3-inch Deep Profile)							
		Tension		Shear		Upper Flute ^{6,7}		Lower Flute ^{6,7}		Tension		Shear	
		Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)
Spiral CSI Drive Pin (0.157 Shank)	1 (25)	775 (3.4)	155 (0.7)	900 (4.0)	180 (0.8)	600 (2.7)	120 (0.5)	1,525 (6.8)	305 (1.4)	600 (2.7)	120 (0.5)	1,525 (6.8)	305 (1.4)
	1-1/4 (32)	775 (3.4)	155 (0.7)	900 (4.0)	180 (0.8)	1,300 (5.8)	260 (1.2)	2,725 (12.1)	545 (2.4)	700 (3.1)	140 (0.6)	1,850 (8.2)	370 (1.6)
	1-1/2 (38)	775 (3.4)	155 (0.7)	900 (4.0)	180 (0.8)	1,300 (5.8)	260 (1.2)	2,725 (12.1)	545 (2.4)	1,125 (5.0)	225 (1.0)	2,250 (10.0)	450 (2.0)

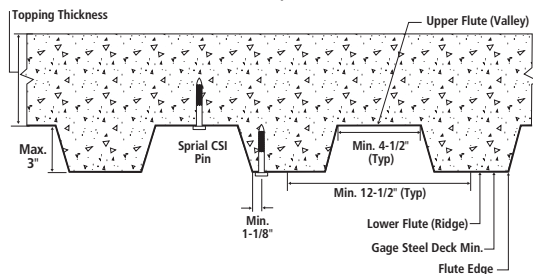
1. Fasteners must not be driven until the concrete has reached the minimum designated compressive strength.
2. The tabulated tension and shear values are for the fasteners only. Steel or wood members connected with the substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0 or greater. Consideration of additional safety factors may be necessary depending on the application such as life safety.
4. For fasteners installed directly into concrete, the member thickness must be a minimum of 3.25 inches.
5. Fasteners must have a minimum spacing distance of 4 inches and a minimum edge distance 3-1/2 inches in accordance with ASTM E 1190. Consideration of smaller spacing and edge distances may be given based on application or jobsite testing.
6. For fasteners installed into the upper flute of the steel deck profile, the concrete thickness above the deck (topping thickness) must be a minimum of 3.25 inches. For fasteners installed into the lower flute of the steel deck profile, the concrete thickness above the deck (topping thickness) must be a minimum of 2.25 inches.
7. Fasteners installed into the steel deck profile must have a minimum spacing distance of 4 inches (upper and lower flute) and a minimum edge distance of 1-1/8 inches (lower flute); there is no minimum edge distance requirement for fasteners installed in the upper flute. Consideration of smaller spacing distances may be given based on application or jobsite testing.
8. Multiple fasteners are recommended for any attachment for increased reliability.

Ultimate and Allowable Load Capacities for CSI Fasteners in Lightweight Concrete and Sand-Lightweight Concrete with or without Steel Deck (1-1/2-inch Deep Profile)^{1,2,3,8}

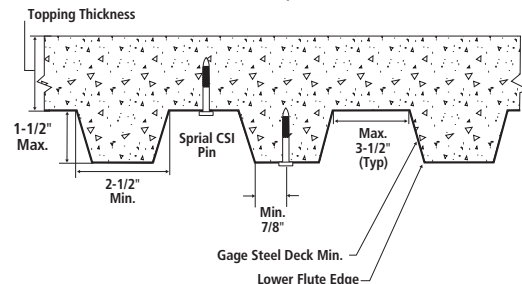
Fastener Description	Minimum Embed. Depth h_v in. (mm)	Minimum Concrete Compressive Strength, $f'c = 3,000$ psi									
		Directly into Concrete ^{4,5}				Through Soffit of Steel Deck Into Concrete (1-1/2-inch Deep Profile)					
		Tension		Shear		Upper or Lower Flute ^{6,7}		Tension		Shear	
		Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)
Spiral CSI Drive Pin (0.157 Shank)	1 (25)	775 (3.4)	155 (0.7)	900 (4.0)	180 (0.8)	1,000 (4.4)	200 (0.9)	2,050 (9.1)	410 (1.8)		
	1-1/4 (32)	775 (3.4)	155 (0.7)	900 (4.0)	180 (0.8)	1,050 (4.7)	210 (0.9)	2,075 (9.2)	415 (1.8)		

1. Fasteners must not be driven until the concrete has reached the minimum designated compressive strength.
2. The tabulated tension and shear values are for the fasteners only. Steel or wood members connected with the substrate must be investigated for compliance with the applicable code.
3. Allowable load capacities are calculated using minimum required factors of safety in accordance with ICC-ES AC70; the minimum applied factor of safety is 5.0 or greater. Consideration of additional safety factors may be necessary depending on the application such as life safety.
4. For fasteners installed directly into concrete, the member thickness must be a minimum of 3.25 inches.
5. Fasteners must have a minimum spacing distance of 4 inches and a minimum edge distance 3-1/2 inches in accordance with ASTM E 1190. Consideration of smaller spacing and edge distances may be given based on application or jobsite testing.
6. For fasteners installed into the upper flute of the steel deck profile, the concrete thickness above the deck (topping thickness) must be a minimum of 3.25 inches. For fasteners installed into the lower flute of the steel deck profile, the concrete thickness above the deck (topping thickness) must be a minimum of 2.25 inches.
7. Fasteners installed into the steel deck profile must have a minimum spacing distance of 4 inches (upper and lower flute) and a minimum edge distance of 7/8 inches (lower flute); there is no minimum edge distance requirement for fasteners installed in the upper flute. Consideration of smaller spacing distances may be given based on application or jobsite testing.
8. Multiple fasteners are recommended for any attachment for increased reliability.

SAND-LIGHTWEIGHT CONCRETE OVER STEEL DECK (MINIMUM 3,000 PSI), 3-inch Deep Profile



SAND-LIGHTWEIGHT CONCRETE OVER STEEL DECK (MINIMUM 3,000 PSI), 1-1/2-inch Deep Profile



POWDER ACTUATED

SPIRAL CSI PIN
Domed Head Pins with 0.157" Shank Diameter

Ultimate and Allowable Tensile Pullover Capacities for Light Steel Framing with Powder Actuated Fasteners^{1,2,3}

Fastener Description	Minimum Thickness of Sheet Steel or Framing Member					
	16 Gage		20 Gage		25 Gage	
	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)	Ultimate lbs (kN)	Allowable lbs (kN)
Spiral CSI Drive Pin (0.157" Shank)	1,940 (8.6)	390 (1.7)	735 (3.3)	145 (0.6)	470 (2.1)	95 (0.4)
Spiral CSI Drive Pin w/ 1" washer (0.157" Shank)	2,280 (10.1)	455 (2.0)	1,695 (7.5)	340 (1.5)	1,050 (4.7)	210 (0.9)

1. Tabulated allowable pullover load values were tested in accordance with ICC-ES AC70 and are based on an applied safety factor of 5.0.
2. Allowable pullover capacities of sheet steel or framing member should be compared to the fastener tensile load capacities in concrete, steel and masonry to determine the controlling resistance load.
3. For pins with washer assemblies, the washer thickness is 14 gage minimum.

ORDERING INFORMATION

Spiral CSI Drive Pins

Cat.No.	Shank Length	Shank Diameter	Standard Box	Standard Carton
50197-PWR	1/2" (K)	0.145"	100	1000
50201-PWR	5/8" (K)	0.157"	100	1000
50203-PWR	3/4" (K)	0.157"	100	1000
50204-PWR	7/8" (K)	0.157"	100	1000
50205-PWR	1" (K)	0.157"	100	1000
50208-PWR	1-1/4" (K)	0.157"	100	1000
50207-PWR	1-1/2" (K)	0.157"	100	1000
50217-PWR	1-5/8" (K)	0.157"	100	1000
50209-PWR	2" (K)	0.157"	100	1000
50241-PWR	2-1/2" (K)	0.157"	100	1000
50211-PWR	2-7/8" (K)	0.157"	100	1000

(K)- Knurled



Spiral CSI Drive Pins Collated

Cat.No.	Shank Length	Shank Diameter	Standard Box	Standard Carton
50450-PWR	5/8" (K)	0.157"	100	1,000
50452-PWR	3/4" (K)	0.157"	100	1,000
50454-PWR	7/8" (K)	0.157"	100	1,000
50456-PWR	1" (K)	0.157"	100	1,000
50458-PWR	1-1/4" (K)	0.157"	100	1,000
50460-PWR	1-1/2" (K)	0.157"	100	1,000
50461-PWR	1-5/8" (K)	0.157"	100	1,000
50462-PWR*	2" (K)	0.157"	100	1,000

(K)- Knurled *DX460 Only



Spiral CSI Drive Pins with Washer

Cat.No.	Shank Length	Shank Diameter	Washer	Standard Box	Standard Carton
50245-PWR	3/4" (K)	0.157"	3/4"	100	1000
50247-PWR	1" (K)	0.157"	3/4"	100	1000
50249-PWR	1-1/4" (K)	0.157"	3/4"	400	1000
50261-PWR	1-1/4" (K)	0.157"	1"	400	1000
50263-PWR	2-1/2" (K)	0.157"	1"	400	1000
50265-PWR	2-7/8" (K)	0.157"	1"	400	1000

(K)- Knurled

