

# Spider Rod Push-In Toggle

## Threaded Rod Concrete Insert Adapter

**Connects directly to our Spider concrete inserts for fast below deck install, thanks to our push-in toggle technology**

■ **Universal design**

Accepts multiple rod sizes, allowing decision to be made after the concrete is poured

■ **Adaptable**

Compatible with both Spider metal and wood form concrete inserts

■ **Safe**

Once installed the push-in toggle design ensures it cannot be accidentally removed or displaced



## Product Specification

**Load Rating**

- Refer to table 1-4  
(Not for use as a gravity hanger at seismic restraint locations. Use Spider Seismic Push-In Toggle Adapter at Seismic Restraint locations - see Technical Data Pack for further information)

**Material**

- Toggle – Zinc Plated Steel
- Pin – Zinc Plated Steel
- Body – Zinc Plated Steel
- Spring – Galvanized Spring Steel

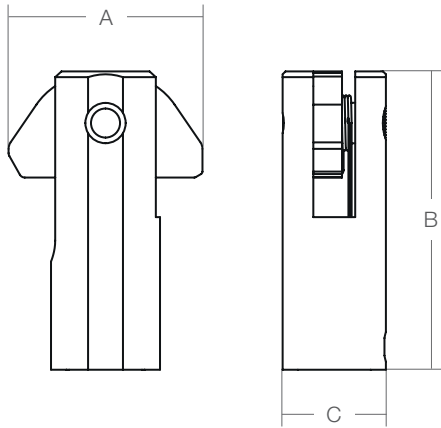
## Approvals

- International Code Council Evaluation Service (ICC-ES), ESR-4190 for Concrete Slab and Deck. Code compliance with 2021 IBC/IRC. LA Department of Building and Safety (LADBS) LARR Approved through ICC-ES ESR-4190 LABC and LARC supplement. Tested by an accredited independent testing laboratory in accordance with ASTM E488 and ICC-ES AC502 for use in cracked and uncracked concrete under the design provisions of ACI318.
- Underwriters Laboratories (UL Listed)  
UL listed per UL 2239 Conduit & Cable Hardware. File No. E251132.  
Also UL listed and recognized for use in air handling spaces (Plenum Rated) per UL 2043.  
UL Listed per UL 1598, File No. E228153 (Rod Adapter Sizes 3/8" - 5/8" & all Cable Toggles)
- The following approval is applicable in the USA and Canada.



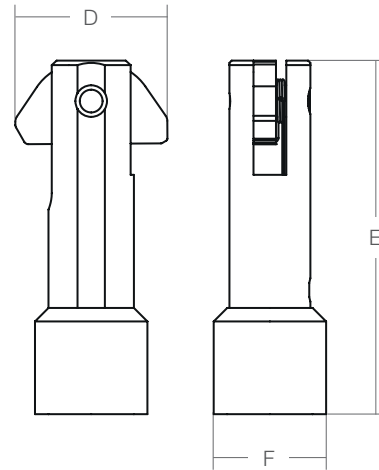
## Design & Dimensions

3/8" and 1/2"



	A	B	C
	In	In	In
3/8"	1.30	2.00	Ø 0.70
1/2"	1.30	2.00	Ø 0.70

5/8" and 3/4"

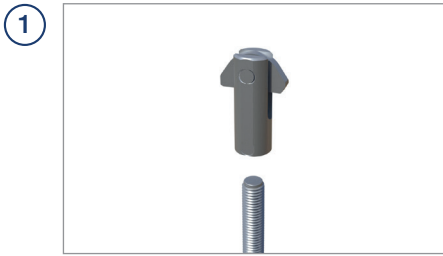


	D	E	F
	In	In	In
5/8"	1.30	2.85	Ø 0.86
3/4"	1.30	3.00	Ø 1.00

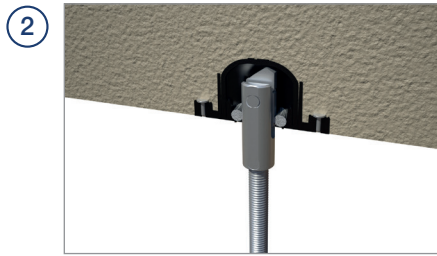
## Packaging

Name	Code	Box QTY	Box Weights
Spider Threaded Rod Adapter 3/8"	SX-ADP-3/8	160	32.15 lbs
Spider Threaded Rod Adapter 1/2"	SX-ADP-1/2	160	30.41 lbs
Spider Threaded Rod Adapter 5/8"	SX-ADP-5/8	100	30.55 lbs
Spider Threaded Rod Adapter 3/4"	SX-ADP-3/4	100	34.81 lbs

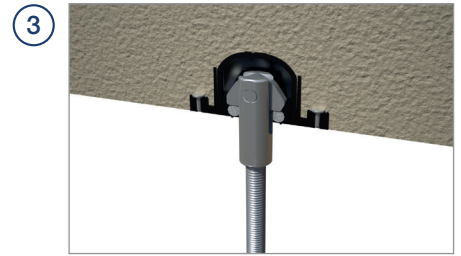
## Installation



① Simply screw the threaded rod on to the Spider Rod Push-In Toggle.



② Insert Spider Rod Push-In Toggle into Spider Insert with upward force with the toggle parallel to the nails/screw.



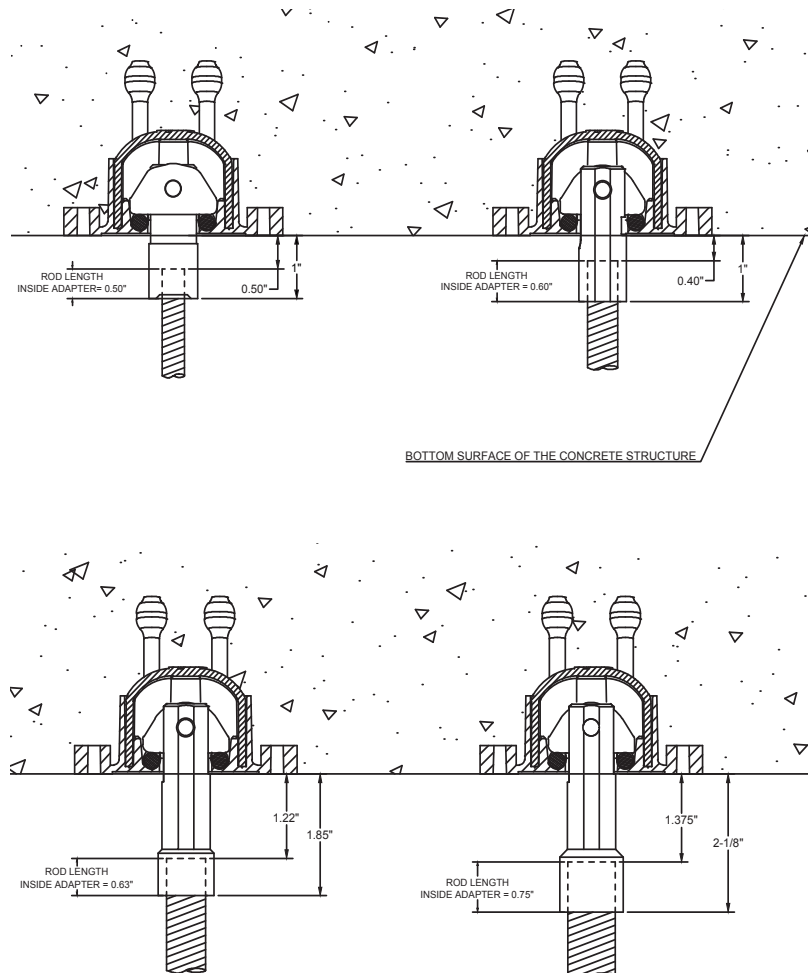
③ Pull Spider Rod Push-In Toggle down with force 2-3 times to ensure it is set in the Spider Insert.



④ Try to turn the rod again in its locking direction to ensure it is fully tightened into the Spider Rod Push-In Toggle.

## Installation Guidance

Spider Insert, Spider Rod Push-In Toggle and Threaded Rod Assembly Dimensions for Pre-Fabrication.



Do not rotate the rod in its unlocking direction, it may cause the rod to loosen from the Rod Push-In Toggle. Always pull downward firmly to ensure the rod is properly set before completing installation.

Threaded rod adapter shall not be installed until concrete is cured and has achieved the compressive strength as prescribed under minimum structural requirements for Spider Wood Form or Spider Metal Deck Inserts, as applicable.

Do not load the Spider Insert before the concrete is poured and fully cured to recommended compressive strength.

Always use the Spider Cable Push-In Toggle or Spider Rod Push-In Toggle supplied by Gripple for suspension from the Spider.

Do not over rotate toggle as this can cause the spring to come out of place.

If the Rod Push-In Toggle does not set, re-insert it into the Spider Insert and rotate a quarter turn in the locking direction of the rod (the direction in which you will rotate the rod to lock it with rod adapter or nut), and pull downwards 2-3 times to ensure it sets.

Warranty will not apply if used with any other third party products.

See Spider Cable Push-In Toggle Technical Data Pack for more information on cable installation guidance.

## Installation Guidance

### Minimal structural requirements - Metal Deck

Figure 1A

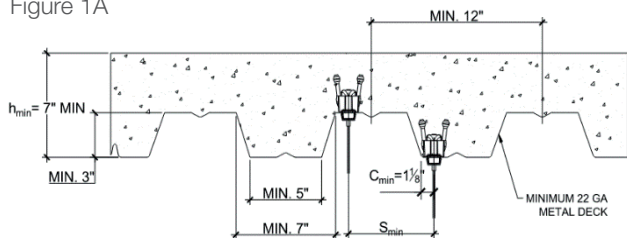


Figure 1A shows spider in 3 inch profile metal deck with 4 inch of concrete topping thickness.

\*Data in Table 1 is only applicable if the structure meets the minimum parameters given in Figure 1A or 1B.

Figure 1B

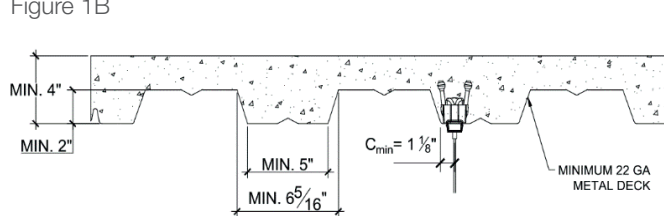


Figure 1B shows spider in 2 inch profile metal deck with 2 inch of concrete topping thickness

\*Concrete compressive strength = 3000 psi sand lightweight, light weight or normal-weight concrete.

**Table 1: Spider Metal Deck & Spider Rod Push-In Toggle assembly allowable tension design values in concrete (ASD)**

INSERT RECEIVER	CONCRETE		ALLOWABLE TENSION IN METAL DECK (lbs)				
			SX-ADP-3/8	SX-ADP-1/2	SX-ADP-5/8	SX-ADP-3/4	
Spider Insert (SX-MD)	3 inch Profile Deck with 4 inch of concrete topping thickness (Figure 1A)	Sandlightweight concrete	Uncracked	1,080	1,700	1,700	1,700
		f'c = 3,000 psi	Cracked <sup>4</sup>	1,080	1,200	1,200	1,200
	2 inch Profile Deck with 2 inch of concrete topping thickness (Figure 2B)	Sandlightweight concrete	Uncracked	1,080	1,480	1,480	1,480
		f'c = 3,000 psi	Cracked <sup>4</sup>	1,080	1,125	1,125	1,125

To convert above Allowable Loads (ASD) into Design Strengths (LRFD) multiply the values in the table by 1.4

1. Load combinations from ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable
2. 100% dead load, controlling load combination 1.4D
3. Edge distance, spacing and concrete member thickness shall meet the requirements in Figure 1A and 1B
4. Values are applicable for seismic design category C,D,E and F applications
5. Values are for condition B where supplementary reinforcement in accordance with ACI 318-14 17.3.3 or ACI 318-11 D.4.3 is not provided
6. Values shown in the table are for insert assembly in tension only

## Installation Guidance

### Minimal structural requirements - Wood Form

Figure 2

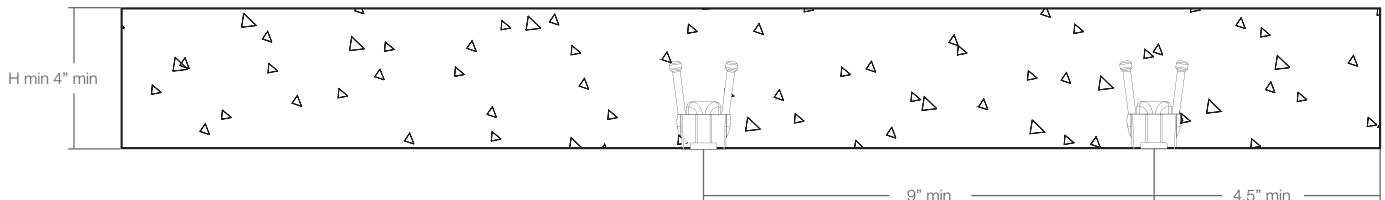


Figure 2 shows Spider Wood Form Insert in 4 inch concrete slab.

\*Data in Table 2 is only applicable if the structure meets the minimum parameters given in Figure 2.

**Table 2: Spider Wood Form and Spider Rod Push-In Toggle assembly allowable tension design values in concrete (ASD)**

INSERT RECEIVER	CONCRETE		ALLOWABLE TENSION IN METAL DECK (lbs)			
			SX-ADP-3/8	SX-ADP-1/2	SX-ADP-5/8	SX-ADP-3/4
Spider Insert (SX-WF)	Normal Weight Concrete $f'_c = 2,500$ psi	Uncracked	1,080	2,430	2,430	2,430
		Cracked <sup>4</sup>	1,080	2,200	2,200	2,200
	Normal Weight Concrete $f'_c = 6000$ psi	Uncracked	1,080	2,975	2,975	2,975
		Cracked <sup>4</sup>	1,080	3,090	3,090	3,090

To convert above Allowable Loads (ASD) into Design Strengths (LRFD) multiply the values in the table by 1.4

1. Load combinations from ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable
2. 100% dead load, controlling load combination 1.4D
3. Edge distance, spacing and concrete member thickness shall meet the requirements in Figure 2
4. Values are applicable for seismic design category C, D, E and F applications
5. Values are for condition B where supplementary reinforcement in accordance with ACI 318-14 17.3.3 or ACI 318-11. D.4.3 is not provided
6. Values shown in the table are for insert assembly in tension only

## Installation Guidance

### Minimal structural requirements - Spider Metal Deck Low Profile

Figure 3

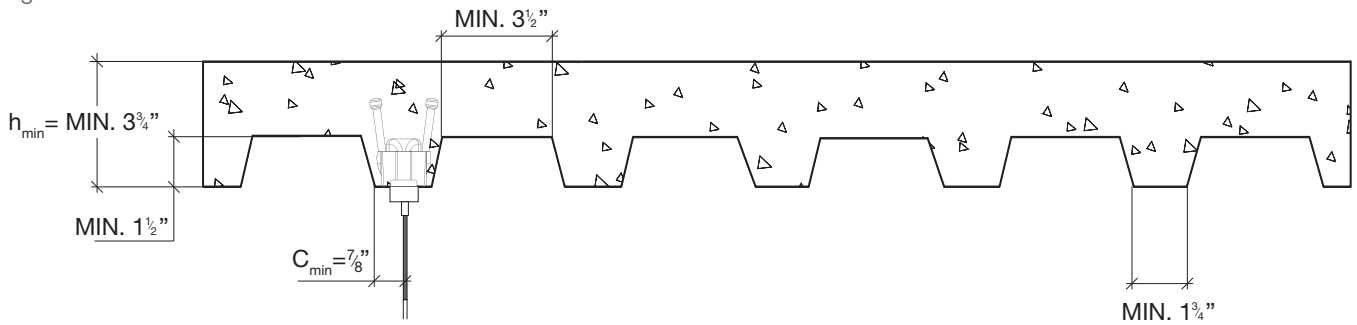


Figure 3 shows Spider Metal Deck Low Profile Insert in 1.5 inch profile metal deck with 2.25 inch concrete topping thickness.

\*Data in Table 3 is only applicable if the structure meets the minimum parameters given in Figure 3

Table 3: Spider Metal Deck Low Profile and Spider Rod Push-In Toggle assembly allowable tension design values in concrete (ASD)

INSERT RECEIVER	CONCRETE		ALLOWABLE TENSION IN METAL DECK (lbs)			
			SX-ADP-3/8	SX-ADP-1/2	SX-ADP-5/8	SX-ADP-3/4
Spider Insert (SX-MD-LP)	Normal Weight Concrete	Uncracked	990	990	990	990
	f'c = 3000 psi	Cracked <sup>4</sup>	860	860	860	860

To convert above Allowable Loads (ASD) into Design Strengths (LRFD) multiply the values in the table by 1.4

1. Load combinations from ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable
2. 100% dead load, controlling load combination 1.4D
3. Edge distance, spacing and concrete member thickness shall meet the requirements in Figure 3
4. Values are applicable for seismic design category C,D,E and F applications
5. Values are for condition B where supplementary reinforcement in accordance with ACI 318-14 17.3.3 or ACI 318-11 D.4.3 is not provided
6. Values shown in the table are for insert assembly in tension only

## Installation Guidance

### Minimal structural requirements - Spider Wood Form Low Profile

Figure 4

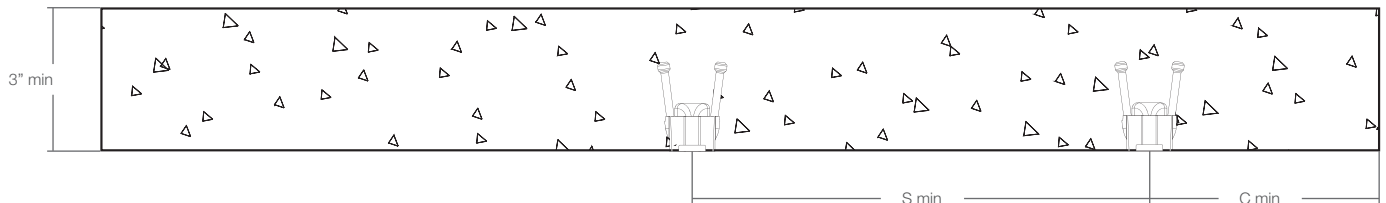


Figure 4 shows Spider Wood Form Low Profile Insert in 3 inch concrete slab.

\*Data in Table 4 is only applicable if the structure meets the minimum parameters given in Figure 4.

**Table 4: Spider Wood Form Low Profile and Spider Rod Push-In Toggle assembly allowable tension design values in concrete (ASD)**

INSERT RECEIVER	CONCRETE		ALLOWABLE TENSION IN WOOD DECK (lbs)			
			SX-ADP-3/8	SX-ADP-1/2	SX-ADP-5/8	SX-ADP-3/4
Spider Insert (SX-WF-LP)	Normal Weight Concrete	Uncracked	1,080	1,690	1,690	1,690
	$f'_c=2,500$ psi	Cracked <sup>4</sup>	1,080	1,150	1,150	1,150

To convert above Allowable Loads (ASD) into Design Strengths (LRFD) multiply the values in the table by 1.4

1. Load combinations from ACI 318-14 5.3 or ACI 318-11 Section 9.2, as applicable
2. 100% dead load, controlling load combination 1.4D
3. Edge distance, spacing and concrete member thickness shall meet the requirements in Figure 4
4. Values are applicable for seismic design category C, D, E and F applications
5. Values are for condition B where supplementary reinforcement in accordance with ACI 318-14 17.3.3 or ACI 318-11. D.4.3 is not provided
6. Values shown in the table are for insert assembly in tension only



## Key Recommendations

Failure to comply with these recommendations may result in product malfunction and possible damage to property or person and will invalidate the Gripple guarantee. Gripple products are guaranteed to be free from defects in materials and workmanship in accordance with our terms and conditions. No other warranty, whether express or implied, including any warranty of merchantability or fitness for purpose shall exist in connection with the sale or use of any Gripple product.

Full technical information and installation instructions should be obtained directly from Gripple Limited, Gripple Europe, Gripple Inc., Gripple Japan, Gripple Poland, Gripple India, Gripple Germany, any regional Gripple office, or via our website [www.gripple.com](http://www.gripple.com).



### LOADS

Always operate the product within its stated safe working load range. Suspend static loads only. Do not subject to shock loading. Do not adjust under load.



### ENVIRONMENT

Do not use in chlorinated or chemically corrosive atmospheres. Standard hangers are for use in dry and air conditioned environments only. Stainless steel hangers should be considered for high to saturated humid environments after validation by a competent person.



### SWIMMING POOLS

Not suitable for swimming pools.



### INSTALLATION

Do not walk or stand on the Gripple product installation. Gripple products must not be used for personal suspension, fall protection or harnessing people.



### STORING

Do not store the product outdoors, or in damp or abnormal conditions.



### REPAIR, MODIFICATION AND RE-USE

Do not repair, modify or re-use Gripple products. If you have any queries regarding product performance, please contact [TechnicalServices@gripple.com](mailto:TechnicalServices@gripple.com)



### TEMPERATURE PERFORMANCE

The standard operating temperature range of this product is -20°C to +70°C (-4°F to +158°F). If increased temperature resistance is required, please contact Gripple Technical Services for advice on your specific application.