

## Speed-Lock<sup>®</sup> Toggle

### BASE MATERIAL

Lightweight Concrete, Structural Cement Wood Fiber, Gypsum, Steel, Wood Decks

### SIZE RANGE

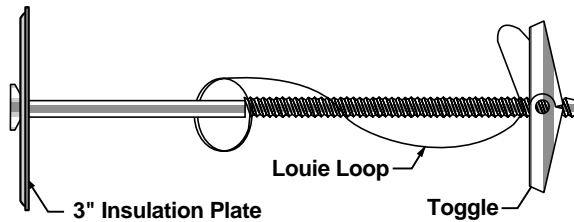
1/4" x 5" to 1/4" x 14"

### ANCHOR MATERIAL

Perma-Seal<sup>™</sup> Coated Carbon Steel Machine Bolt with Carbon Steel Wing

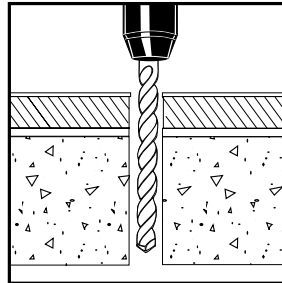
### PRODUCT DESCRIPTION

The Speed-Lock Toggle is a fully assembled, high speed, vibration resistant through fastening assembly for use in all roof deck types including cement wood fiber, gypsum, concrete, wood and steel.

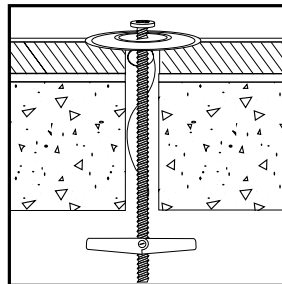


The Speed-Lock Toggle consists of a carbon steel machine bolt which is pre-assembled with a stainless steel Louie-Loop and a carbon steel toggle wing. Wafer head, flat head, or truss style heads are provided. For corrosion resistance, the bolt is zinc plated or coated with Perma-Seal, a proprietary fluoropolymer coating. Speed-Lock Toggle Bolts are available with a pre-assembled 3" galvalume insulation plate which meets the corrosion requirements of Factory Mutual Research Corporation Standard 4470. As the assembly is driven through the pre-drilled hole, the upper coil of the Louie-Loop presses against the wall of the drilled hole to prevent the toggle wing from spinning as the bolt is tightened. This allows the Speed-Lock Toggle bolt to be quickly tightened using a screw gun without lifting the toggle bolt or holding the wings. As the assembly is tightened, the lower wire coils on the Louie-Loop compresses to lock the wing against the underside of the deck. Once tightened, the combined action of the coils provides resistance to vibration and back out.

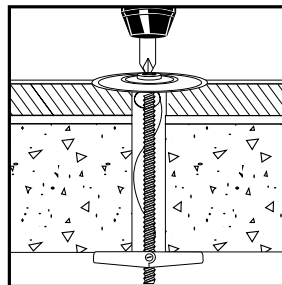
### INSTALLATION PROCEDURES



Drill a hole through the insulation and the base material. The tolerances of the drill bit used should meet the requirements of ANSI Standard B212.15. Use a 5/8" diameter for softer base materials and a 11/16" diameter for denser materials.



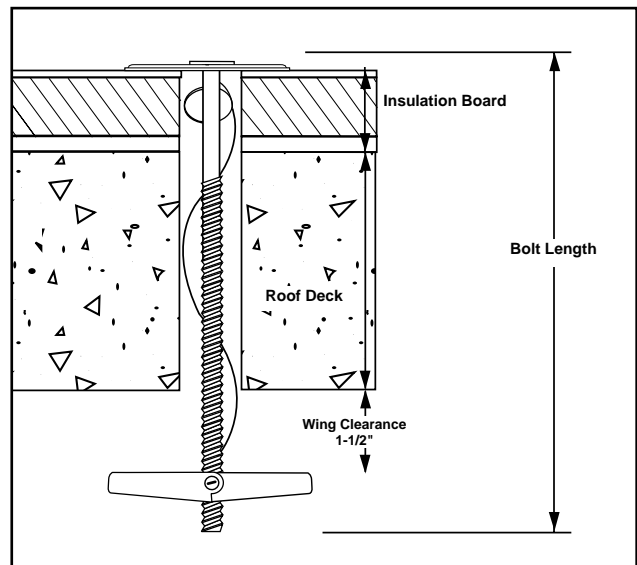
Push the assembly through the drilled hole until the toggle wings snap open.



Tighten with a manual or power screw driver.

### ANCHOR SIZES AND STYLES

To select the minimum bolt length required, add the thicknesses of the insulation board, membrane, and roof deck through which the bolt will be installed. Add another 1-1/2" to allow the toggle wing to spring open.




**PERMA-SEAL COATED SPEED-LOCK TOGGLE PRE-ASSEMBLED WITH 3" INSULATION PLATE**

CAT. NO	THREAD SIZE	THREAD LENGTH	STD. BOX	CTN.	MAX. THICK.*	WT./100
4945	1/4" x 5"	4"	100	100	3-1/2"	16
4946	1/4" x 6"	4"	100	100	4-1/2"	17
4947	1/4" x 7"	4"	100	100	5-1/2"	18
4948	1/4" x 8"	4"	100	100	6-1/2"	19
4949	1/4" x 9"	4"	100	100	7-1/2"	20
4950	1/4" x 10"	4"	100	100	8-1/2"	21
4952	1/4" x 12"	4"	100	100	10-1/2"	23
4954	1/4" x 14"	4"	100	100	12-1/2"	25

\*Note: Maximum Work Thickness = Existing Deck Thickness + New Insulation Board/Membrane.

**INSTALLATION SPECIFICATIONS**

ANCHOR SIZE	1/4"
ANSI Drill Bit Size	*5/8"
Thread Size	1/4 - 20
Drive Size - WH	No. 2
Drive Size - PFH	No. 3
Drive Size - TH	No. 3
Wing Clearance	1-1/2"

\*Use 11/16" bit in denser base materials.

**MATERIAL SPECIFICATIONS**

ANCHOR COMPONENT	COMPONENT MATERIAL
Wings	AISI 1010
Trunnion Nut	AISI 1010
Toggle Spring	Carbon Steel Wire
Louie Loop	300 Series Stainless Steel
*Zinc Plating	ASTM B 633, SC1, Type III (Fe/Zn 5)

\*Stainless steel loops are not plated.

ANCHOR COMPONENT	COMPONENT MATERIAL PERMA-SEAL BOLT
Machine Bolt	Carbon Steel ANSI B 18.6.3
Coating / Plating	Perma-Seal Fluoropolymer

**PERFORMANCE DATA**

The following load capacities are based on testing conducted according to ASTM Standard E 488.

BASE MATERIAL	HOLE SIZE	TENSION LOAD (LBS.)
Concrete Block	11/16"	995
22 Gage Steel	11/16"	975
Plywood	11/16"	780
Gypsum Panel (2" thick)	5/8"	620
Tectum (3" thick)	5/8"	570

NOTE: The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 4 or greater to determine the allowable working load.

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**APPROVALS AND LISTINGS**

The following approvals and listings are for reference purposes. They should be reviewed by the design professional responsible for the product installation to verify approved sizes, base materials, and compliance with local codes.

Factory Mutual Research Corporation

**STEEL AND WOOD**

Speed-Lock Toggle J.I. 1K6A7.AM

**STRUCTURAL CONCRETE DECK**

Speed-Lock Toggle J.I. 1K6A7.AM

**LIGHTWEIGHT CONCRETE DECK**

Speed-Lock Toggle J.I. OM9A4.AM

**ALL DECK TYPES**

Fully Adhered Single-Ply and J.I. IT9A4.AM

Modified Bitumen Roof Coverings

**SUGGESTED SPECIFICATION**

Fasteners for attaching insulation / membrane to the roof deck shall be a pre-assembled 1/4" spring wing toggle bolt assembly. The fastener shall be designed with a stainless steel loop mechanism to prevent spinning of the toggle during installation and resistance to back out. Galvalume coated steel stress plates shall be pre-mounted onto the 1/4" bolts. The bolts shall have a fluoropolymer coating and the wings shall be plated according to ASTM Specification B633, SC1, Type III. Speed-Lock Toggle fasteners shall be as dimensioned and supplied by Powers Fasteners, Inc.