

October 02, 2024

Re: Simpson Strong-Tie® Titen HD Rod Coupler Allowable Tension Loads for Wind

Tables 1 and 2 below provide the allowable tension loads for wind for 3/8-inch and 1/2-inch-diameter Simpson Strong-Tie® Titen HD Rod Coupler installed at nominal embedment depth of 5 inches and 8 inches in uncracked and cracked concrete, respectively. See Figure 1 below for footing types.

TABLE 1 – TITEN HD® ROD COUPLER ALLOWABLE TENSION LOADS FOR WIND IN UNCRACKED CONCRETE

Footing Type	Model No.	Nominal Embedment Depth (in.)	Min. Edge Dist. (in.)	Min. End Dist. (in.)	Min. Concrete Thickness (in.)	Allowable Tension Load (lb.)
Interior Thickened Slab	THD37634RC	5	6	1 3/4	8	1,745
	THD50934RC	8	6	3 1/8	12	2,420
	THD5093437RC					
8" Wide Stem Wall	THD37634RC	5	1 3/4	5 1/4	8	1,745
	THD37634RC	5	2 3/4	4	8	1,745
	THD50934RC	8	1 3/4	8 1/4	12	2,225
	THD5093437RC					
	THD50934RC	8	2 3/4	8 1/4	12	2,330
	THD5093437RC					
10" Wide Turned-Down Slab	THD37634RC	5	1 3/4	5 1/4	8	1,745
	THD37634RC	5	2 3/4	3 3/8	8	1,745
	THD50934RC	8	1 3/4	6 1/4	12	2,420
	THD5093437RC					
	THD50934RC	8	2 3/4	5 3/8	12	2,420
THD5093437RC						
Elevated Slab	THD37634RC	5	1 3/4	5 1/4	8	1,745
	THD37634RC	5	2 3/4	3 3/8	8	1,745
	THD50934RC	8	1 3/4	6 1/4	12	2,420
	THD5093437RC					
	THD50934RC	8	2 3/4	4 3/8	12	2,420
THD5093437RC						

1. See notes in Table 2.

FIGURE 1: FOOTING TYPES

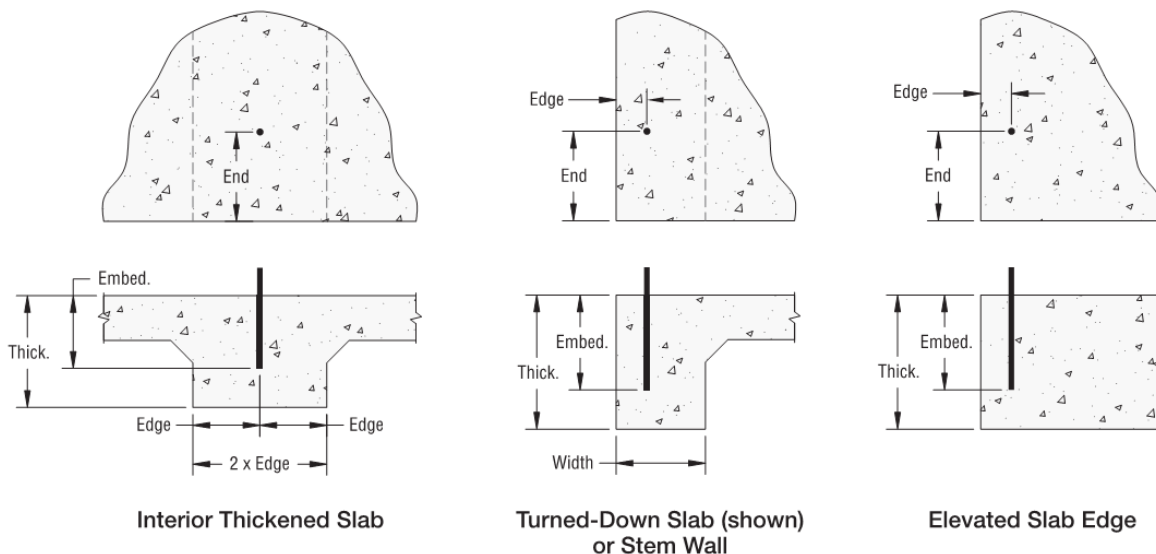


TABLE 2 – TITEN HD® ROD COUPLER ALLOWABLE TENSION LOADS FOR WIND IN CRACKED CONCRETE

Footing Type	Model No.	Nominal Embedment Depth (in.)	Min. Edge Dist. (in.)	Min. End Dist. (in.)	Min. Concrete Thickness (in.)	Allowable Tension Load (lb.)
Interior Thickened Slab	THD37634RC	5	6	1 ¾	8	1,055
	THD50934RC THD5093437RC	8	6	3 ⅛	12	1,715
8" Wide Stem Wall	THD37634RC	5	1 ¾	3 ⅞	8	1,055
	THD37634RC	5	2 ¾	2 ⅞	8	1,055
	THD50934RC THD5093437RC	8	1 ¾	8 ¼	12	1,575
	THD50934RC THD5093437RC	8	2 ¾	8 ¼	12	1,650
10" Wide Turned-Down Slab	THD37634RC	5	1 ¾	3 ⅞	8	1,055
	THD37634RC	5	2 ¾	2 ¼	8	1,055
	THD50934RC THD5093437RC	8	1 ¾	6 ¼	12	1,715
	THD50934RC THD5093437RC	8	2 ¾	5 ⅞	12	1,715
Elevated Slab	THD37634RC	5	1 ¾	3 ⅞	8	1,055
	THD37634RC	5	2 ¾	2 ¼	8	1,055
	THD50934RC THD5093437RC	8	1 ¾	6 ¼	12	1,715
	THD50934RC THD5093437RC	8	2 ¾	4 ⅞	12	1,715

1. Allowable tension loads are based on the strength design provisions of ACI 318-19 Chapter 17 using a conversion factor of $\alpha = 1/0.6 = 1.67$. The conversion factor α is based on the load combination assuming 100% wind load.
2. Allowable tension loads are for a single anchor with no influence of another anchor.
3. Allowable tension loads are calculated based on design strength of concrete breakout at corresponding nominal embedment depths but are limited to pullout design strength based on characteristic pullout loads published in ICC-ES ESR-2713. Where there is no published characteristic pullout load, the design strength is limited to nominal concrete breakout based on the nominal embedment depth listed in ESR-2713 assuming no concrete edge influence.
4. Concrete must be normal-weight concrete with a minimum compressive strength of 2,500 psi.
5. Critical edge distance in deriving allowable tension load is assumed to be 1.5 times the effective embedment depth. Effective embedment depths is 3.89 inches for THD37634RC and 5.43 inches for THD50934RC and THD5093437RC.
6. See Figure 1 for definitions.
7. See the table below for anchor size and coupling rod diameter.

Anchor Model No.	Size (in.)	Coupling Rod Diameter (in.)
THD37634RC	3/8 x 6 3/4	3/8
THD5093437RC	1/2 x 9 3/4	3/8
THD50934RC	1/2 x 9 3/4	1/2

8. Listed allowable tension loads may be limited to steel allowable load of the attached rod. Designer must verify.

All other information pertaining to the use and installation of Titen HD® Rod Coupler as published in the latest edition of the *Anchoring, Fastening and Restoration Systems for Concrete and Masonry* catalogue shall apply.

The information in this letter is valid until **09/30/2025** when it will be re-evaluated by Simpson Strong-Tie. Please visit strongtie.com for additional information. If you have questions or need further assistance regarding this matter, please contact the Simpson Strong-Tie engineering department at 800.999.5099.

Sincerely,

SIMPSON STRONG-TIE COMPANY INC.