Anchor Bolt

This product is preferable to similar connectors because of (a) easier installation, (b) higher loads, (c) lower installed cost, or a combination of these features.

The SSTB anchor bolt is designed for maximum performance as an anchor bolt for holdowns and Simpson Strong-Tie Strong-Wall® shearwalls. Extensive testing has been done to determine the design load capacity of the SSTB when installed in many common applications.

The Simpson Strong-Tie SSTB anchor bolts are code listed by ICC-ES under the 2012, 2015, 2018 and 2021 IBC® and IRC®.

Features:

- Identification on the bolt head showing embedment angle and model
- Offset angle reduces side bursting, and provides more concrete cover
- Rolled thread for higher tensile capacity
- Stamped embedment line aids installation
- Available in HDG for additional corrosion resistance

Material: ASTM F-1554, Grade 36

Finish: None. May be ordered HDG; contact Simpson Strong-Tie.

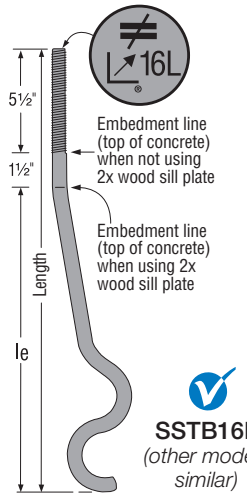
Installation:

- SSTB is suitable for monolithic and two-pour concrete applications.
- Nuts and washers for holdown attachment are not supplied with the SSTB; install standard nuts, couplers and/or washers as required.
- On HDG SSTB anchors, chase the threads to use standard nuts or couplers or use overtapped products in accordance with ASTM A563, for example Simpson Strong-Tie® NUT⅝-OST, NUT⅞-OST, CNW⅝-OST, CNW⅞-OST.
- Install SSTB before the concrete pour using AnchorMate® anchor bolt holders. Install the SSTB per the plan view detail.
- Minimum concrete compressive strength is 2,500 psi.
- When rebar is required it does not need to be tied to the SSTB.
- Order SSTBL models (example: SSTB16L) for longer thread length (16L = 5½", 20L = 6½", 24L = 6", 28L = 6½"). SSTB and SSTBL load values are the same. SSTB34 and SSTB36 feature 4½" and 6½" of thread respectively and are not available in "L" versions.

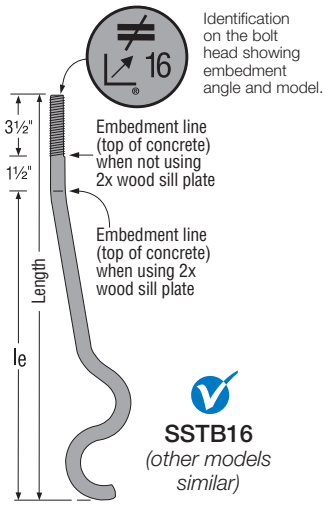
GFCMU (Grout-Filled Concrete Masonry Units)

- One horizontal #4 rebar in the second course.
- One vertical #4 rebar in adjacent cell for ⅝"-diameter SSTB.
- One vertical #4 rebar in an adjacent cell and additional vertical #4 rebar(s) at 24" o.c. max. for ⅞"-diameter SSTBs (2 total vertical rebars for end wall corner, 3 total vertical rebars for midwall).

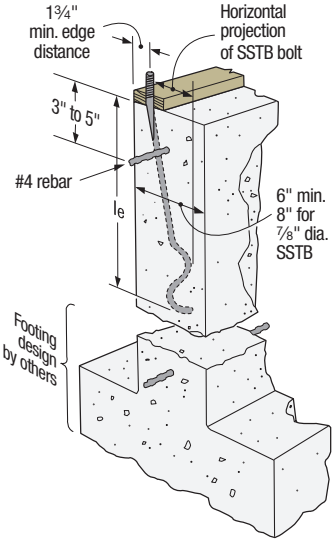
Codes: See p. 11 for Code Reference Key Chart



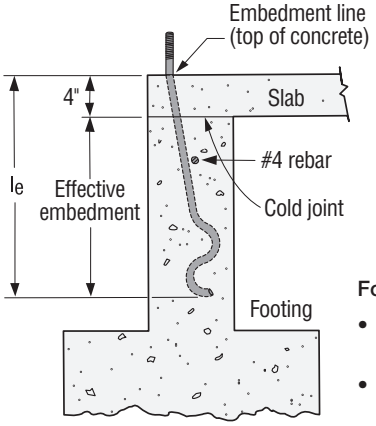
SSTB16L
(other models similar)



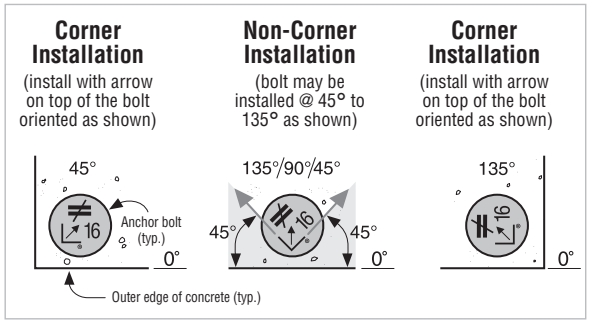
SSTB16
(other models similar)



Typical SSTB Installation in Concrete Foundation
Maintain minimum rebar cover, per ACI-318 concrete code requirements



Two-Pour Installation
(SSTB20, 24, 34 and 36)



Plan View of SSTB Placement in Concrete and GFCMU

For two-pour (4" slab) installation loads:

- When using the SSTB20, use the equivalent loads of the SSTB16.
- When using the SSTB24, use the equivalent loads of the SSTB20.
- When using the SSTB34 or 36, use the equivalent loads of the SSTB28.

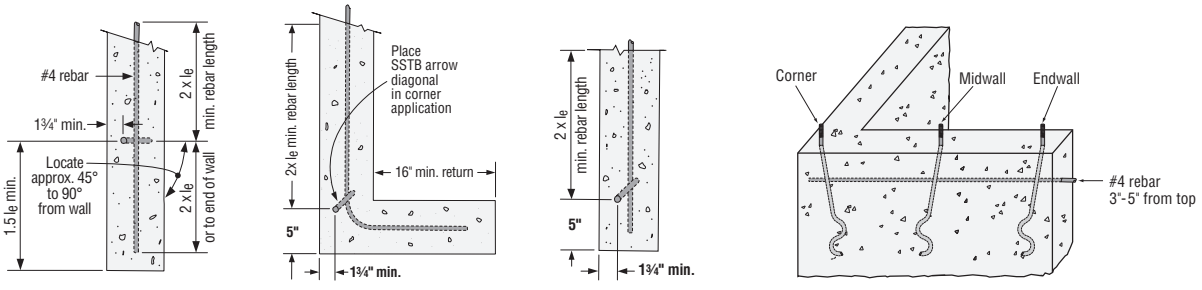
Anchor Bolt (cont.)

These products are available with additional corrosion protection. For more information, see p. 14.

SSTB Bolts at Stemwall

Model No.	Dimensions (in.)				Allowable Tension Loads						Code Ref.
	Stemwall Width	Diameter	Length	Min. Embed. (l_e)	Wind and SDC A&B			SDC C–F			
					Midwall	Corner	End Wall[6]	Midwall	Corner	End Wall[6]	
SSTB16	6	5/8	17 5/8 (16L = 19 5/8)	12 5/8	3,465	3,465	3,465	2,550	2,550	2,550	IBC, FL, LA
SSTB20	6	5/8	21 5/8 (20L = 24 5/8)	16 5/8	4,145	3,880	3,880	3,145	2,960	2,960	
SSTB24	6	5/8	25 5/8 (24L = 28 1/8)	20 5/8	4,825	4,295	4,295	3,740	3,325	3,325	
SSTB28	8	7/8	29 7/8 (28L = 32 7/8)	24 7/8	9,505	8,360	7,310	8,315	7,315	6,395	
SSTB34	8	7/8	34 7/8	28 7/8	9,505	8,360	7,310	8,315	7,315	6,395	
SSTB36	8	7/8	36 7/8	28 7/8	9,505	8,360	7,310	8,315	7,315	6,395	

1. Rebar is required at the top of stem wall foundations, but is not required for slab-on-grade edge and garage curb, or stem wall garage front installations.
2. Minimum end distances for SSTB bolts are as shown in graphics.
3. To obtain LRFD values, multiply ASD seismic load values by 1.43 and wind load values by 1.67.
4. Per Section 1613 of the IBC, detached one- and two-story dwellings in SDC C may use "Wind and SDC A&B" allowable loads.
5. Midwall loads apply when anchor is 1.5 l_e or greater from the end. For bolts acting in tension simultaneously, the minimum bolt center-to-center spacing is 3 l_e.
6. SSTB28, SSTB34 and SSTB36 with 3 7/8" end distance allowable loads are 6,330 lb. (Wind and SDC A&B) and 5,550 lb. (SDC C–F).



Midwall | Corner | End Wall

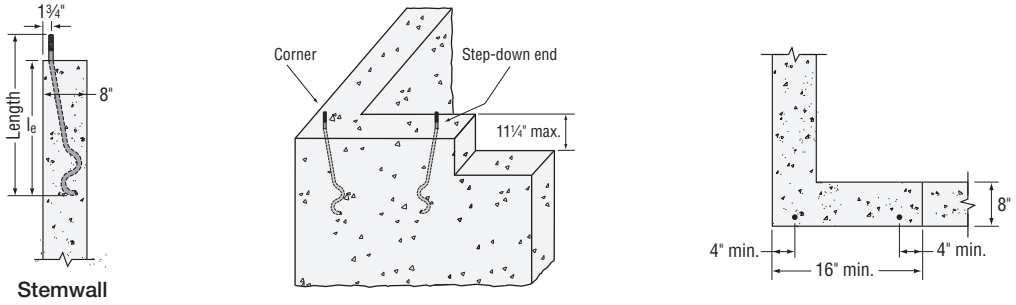
Stemwall Plan Views

Perspective View

SSTB Bolts at Stemwall: Garage Front

Model No.	Dimensions (in.)				Allowable Tension Loads				Code Ref.
	Stemwall Width	Diameter	Length	Min. Embed. (le)	Wind and SDC A&B		SDC C–F		
					Step-Down End	Corner	Step-Down End	Corner	
SSTB28	8	7/8	29 7/8	24 7/8	6,735	6,765	5,895	5,920	IBC, FL, LA

1. Rebar is required at the top of stem wall foundations, but is not required for slab-on-grade edge and garage curb, or stem wall garage front installations.
2. Minimum end distances for SSTB bolts are as shown in graphics.
3. To obtain LRFD values, multiply ASD seismic load values by 1.43 and wind load values by 1.67.
4. Per Section 1613 of the IBC, detached one- and two-story dwellings in SDC C may use "Wind and SDC A&B" allowable loads.
5. Midwall loads apply when anchor is 1.5 l_e or greater from the end. For bolts acting in tension simultaneously, the minimum bolt center-to-center spacing is 3 l_e.



Stemwall Garage Front

Perspective View

Plan View

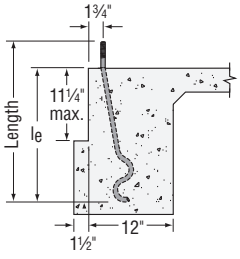
Anchor Bolt (cont.)

These products are available with additional corrosion protection. For more information, see p. 14.

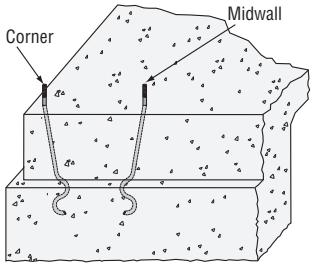
SSTB Bolts at Slab on Grade: Edge

Model No.	Dimensions (in.)				Allowable Tension Loads				Code Ref.
	Footing Width	Diameter	Length	Min. Embed. (l_e)	Wind and SDC A&B		SDC C–F		
					Midwall	Corner	Midwall	Corner	
SSTB16	12	5/8	17 5/8	12 5/8	5,140	5,140	3,780	3,780	IBC, FL, LA
SSTB20	12	5/8	21 5/8	16 5/8	6,285	6,285	4,785	4,785	
SSTB24	12	5/8	25 5/8	20 5/8	6,675	6,675	5,790	5,790	
SSTB28	12	7/8	29 7/8	24 7/8	12,640	13,080	11,060	11,645	
SSTB34	12	7/8	34 7/8	28 7/8	12,640	13,080	11,060	11,645	
SSTB36	12	7/8	36 7/8	28 7/8	12,640	13,080	11,060	11,645	

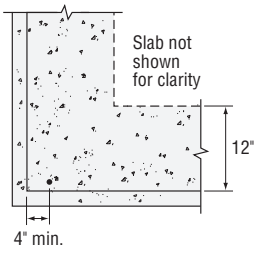
1. Rebar is required at the top of stem wall foundations, but is not required for slab-on-grade edge and garage curb, or stem wall garage front installations.
2. Minimum end distances for SSTB bolts are as shown in graphics.
3. To obtain LRFD values, multiply ASD seismic load values by 1.43 and wind load values by 1.67.
4. Per Section 1613 of the IBC, detached one- and two-story dwellings in SDC C may use "Wind and SDC A&B" allowable loads.
5. Midwall loads apply when anchor is 1.5 l_e or greater from the end. For bolts acting in tension simultaneously, the minimum bolt center-to-center spacing is 3 l_e.



Slab Edge



Perspective View

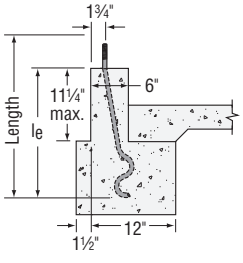


Plan View

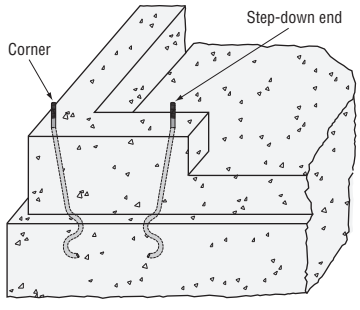
SSTB Bolts at Slab on Grade: Garage Curb

Model No.	Dimensions (in.)				Allowable Tension Loads				Code Ref.
	Curb Width	Diameter	Length	Min. Embed. (l_e)	Wind and SDC A&B		SDC C–F		
					Step-Down End	Corner	Step-Down End	Corner	
SSTB28	6	7/8	29 7/8	24 7/8	9,685	11,880	8,475	10,395	IBC, FL, LA

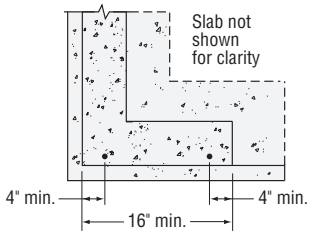
1. Rebar is required at the top of stem wall foundations, but is not required for slab-on-grade edge and garage curb, or stem wall garage front installations.
2. Minimum end distances for SSTB bolts are as shown in graphics.
3. To obtain LRFD values, multiply ASD seismic load values by 1.43 and wind load values by 1.67.
4. Per Section 1613 of the IBC, detached one- and two-story dwellings in SDC C may use "Wind and SDC A&B" allowable loads.



Slab Garage Curb



Perspective View



Plan View

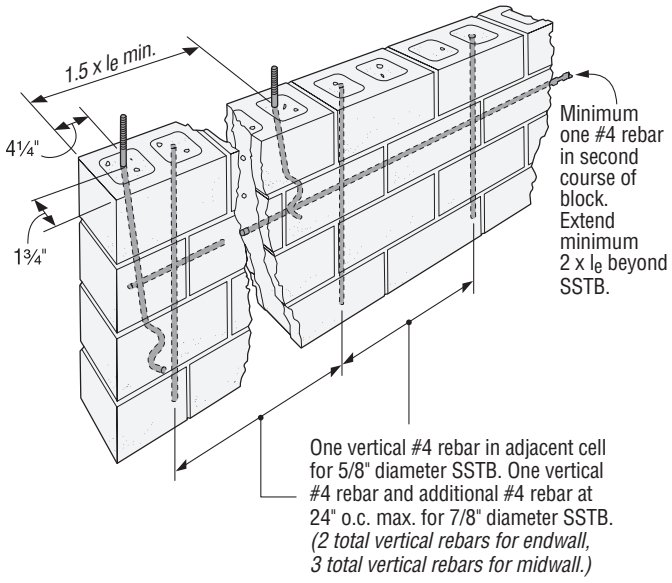
Anchor Bolt (cont.)

These products are available with additional corrosion protection. For more information, see p. 14.

SSTB Bolts in 8" GFCMU (Grout-Filled Concrete Masonry Units)

Model No.	Dimensions (in.)			Allowable Tension Load		Code Ref.
	Diameter	Length	Min. Embed. (l_e)	Midwall	Corner/ End Wall	
SSTB16	5/8	17 5/8 (16L = 19 5/8)	12 5/8	2,865	1,220	—
SSTB20	5/8	21 5/8 (20L = 24 5/8)	16 5/8	2,865	1,220	
SSTB24	5/8	25 5/8 (24L = 28 1/8)	20 5/8	2,865	1,220	
SSTB28	7/8	29 7/8 (28L = 32 7/8)	24 7/8	4,185	3,000	
SSTB34	7/8	34 7/8	28 7/8	4,185	3,000	
SSTB36	7/8	36 7/8	28 7/8	4,185	3,000	

1. Loads are based on a minimum CMU compressive strength, f'_m, of 1,500 psi.
2. Minimum end distance required to achieve midwall table loads is 1.5 l_e.
3. Minimum end distance for corner/end wall loads is 4¼".
4. Loads may not be increased for duration of load.
5. Allowable loads are based on the average ultimate load with a safety factor of 5.0 per ACI 530.



Typical SSTB Installation in Grout-Filled Concrete Block