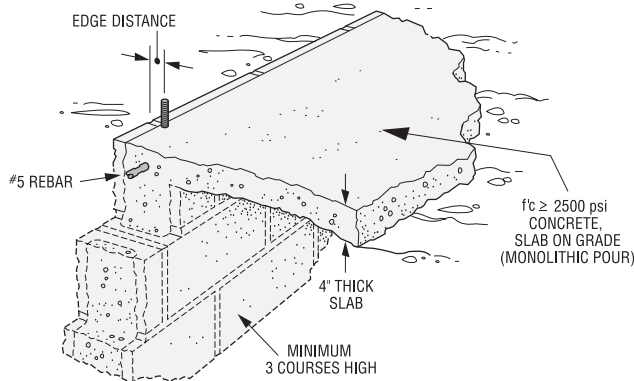


ANCHOR TENSION LOADS IN MASONRY CHAIR BLOCK



Tension loads have been established for the Epoxy-Tie® SET, Acrylic-Tie® AT adhesive and the Titen HD® anchor in a chair block application at minimum edge distance. 2500 psi concrete is used to grout the cells of the block and pour the slab.

Tension Loads for Threaded Rod Anchors with AT or SET in 8-inch CMU Chair Blocks filled with Normal-Weight Concrete

Rod Dia. in. (mm.)	Drill Bit Dia. in.		Embed. Depth in. (mm)	Min. Edge Dist. in. (mm)	Critical Spacing in. (mm)	Allowable Tension Load Based on CMU Strength lbs. (kN)				Allowable Tension Load Based on Steel Strength lbs. (kN)
						SET		AT		
						Ultimate	Allowable	Ultimate	Allowable	
1/2 (12.7)	5/8	9/16	4 1/2 (114)	1 1/4 (44.5)	18 (457)	4,810 (21.4)	1,200 (5.3)	3,540 (15.7)	885 (3.9)	3,750 (16.7)
			7 (178)	1 1/4 (44.5)	28 (711)	7,715 (34.3)	1,930 (8.6)	6,285 (28.0)	1,570 (7.0)	
			12 (305)	1 1/4 (44.5)	48 (1220)	—	—	18,950 (84.3)	4,740 (21.1)	
5/8 (15.9)	3/4	1 1/16	4 1/2 (114)	1 1/4 (44.5)	18 (457)	4,955 (22.0)	1,240 (5.5)	4,775 (21.2)	1,195 (5.3)	5,875 (26.1)
			7 (178)	1 1/4 (44.5)	28 (711)	7,600 (33.8)	1,900 (8.5)	7,960 (35.4)	1,990 (8.9)	
			12 (305)	1 1/4 (44.5)	48 (1219)	12,220 (54.4)	3,055 (13.6)	—	4,250 (18.9)	
			15 (381)	1 1/4 (44.5)	60 (1524)	—	—	22,425 (99.8)	5,605 (24.9)	

1. Allowable load must be the lesser of the CMU or steel strength.
2. Allowable bond strength is based on a factor of safety of 4.0.
3. Threaded rod anchors shall be ASTM A307 strength minimum.
4. Center #5 rebar in CMU cell and concrete slab.
5. CMU shall conform to ASTM C90 and may be medium-weight or normal-weight.

6. Concrete fill shall have a minimum compressive strength of f'c = 2,500 psi and be poured monolithically with the floor slab.
7. Refer to our current *Anchoring and Fastening Systems for Concrete and Masonry* catalog for additional product information including temperature sensitivity load reductions and guidance on oversized holes.

Tension Loads for Titen HD in 8-inch CMU Chair Blocks filled with Normal-Weight Concrete

Size in. (mm)	Drill Bit Dia. in.	Embed. Depth in. (mm)	Min. Edge Dist. in. (mm)	Critical Spacing Dist. in. (mm)	Allowable Tension Load Based on CMU Strength	
					Ultimate lbs. (kN)	Allow. lbs. (kN)
3/8 (9.5)	3/8	2 3/8 (60)	1 1/4 (44)	9 1/2 (241)	3,175 (14.1)	795 (3.5)
		3 3/8 (86)	1 1/4 (44)	13 1/2 (343)	5,175 (23.0)	1,295 (5.8)
		5 (127)	2 1/4 (57)	20 (508)	10,584 (47.1)	2,645 (11.8)
1/2 (12.7)	1/2	8 (203)	2 1/4 (57)	32 (813)	13,722 (61.0)	3,430 (15.3)
		10 (254)	2 1/4 (57)	40 (1016)	16,630 (74.0)	4,160 (18.5)
5/8 (15.9)	5/8	5 1/2 (140)	1 1/4 (44)	22 (559)	9,025 (40.1)	2,255 (10.0)
		12 (305)	2 1/4 (57)	48 (1219)	18,104 (80.5)	4,525 (20.1)

1. The allowable loads are based on a factor of 4.0.
2. CMU shall conform to ASTM C90 and may be medium-weight or normal-weight.
3. Concrete fill shall have a minimum compressive strength of f'c = 2,500 psi and be poured monolithically with the floor slab.
4. Center #5 bar in CMU cell and concrete slab.
5. Refer to our current *Anchoring Systems for Concrete and Masonry* catalog for additional product information.

This technical bulletin is effective until December 31, 2013, and reflects information available as of October 1, 2011. This information is updated periodically and should not be relied upon after December 31, 2013; contact Simpson Strong-Tie for current information and limited warranty or see www.strongtie.com.