

WEDGE-ALL® ANCHOR *Technical Information*

Load-Adjustment Factors for Carbon-Steel and Stainless-Steel Wedge-All® Anchors in Normal-Weight Concrete: Edge Distance, Tension and Shear Loads

How to use these charts:

1. The following tables are for reduced edge distance.
2. Locate the anchor size to be used for either a tension and/or shear load application.
3. Locate the edge distance (C_{act}) at which the anchor is to be installed.
4. The load adjustment factor (f_c) is the intersection of the row and column.
5. Multiply the allowable load by the applicable load adjustment factor.
6. Reduction factors for multiple edges are multiplied together.

Edge Distance Tension (f_c)



Edge Dist. C_{act} (in.)	Size	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4
	C_{cr}	2 1/2	3 3/4	5	6 1/4	7 1/2	8 3/4	10	12 1/2
	C_{min}	1	1 1/2	2	2 1/2	3	3 1/2	4	5
	f_{cmin}	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
1		0.70							
1 1/2		0.80	0.70						
2		0.90	0.77	0.70					
2 1/2		1.00	0.83	0.75	0.70				
3			0.90	0.80	0.74	0.70			
3 1/2			0.97	0.85	0.78	0.73	0.70		
3 3/4			1.00	0.88	0.80	0.75	0.71		
4				0.90	0.82	0.77	0.73	0.70	
4 1/2				0.95	0.86	0.80	0.76	0.73	
5				1.00	0.90	0.83	0.79	0.75	0.70
5 1/2					0.94	0.87	0.81	0.78	0.72
6					0.98	0.90	0.84	0.80	0.74
6 1/4					1.00	0.92	0.86	0.81	0.75
6 1/2						0.93	0.87	0.83	0.76
7						0.97	0.90	0.85	0.78
7 1/2						1.00	0.93	0.88	0.80
8							0.96	0.90	0.82
8 1/2							0.99	0.93	0.84
8 3/4							1.00	0.94	0.85
10								1.00	0.90
12 1/2									1.00
15									

* See page 10 for an explanation of the load table icons

See Notes Below

Edge Distance Shear (f_c) (Shear Applied Perpendicular to Edge)



Edge Dist. C_{act} (in.)	Size	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4
	C_{cr}	2 1/2	3 3/4	5	6 1/4	7 1/2	8 3/4	10	12 1/2
	C_{min}	1	1 1/2	2	2 1/2	3	3 1/2	4	5
	f_{cmin}	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
1		0.30							
1 1/2		0.53	0.30						
2		0.77	0.46	0.30					
2 1/2		1.00	0.61	0.42	0.30				
3			0.77	0.53	0.39	0.30			
3 1/2			0.92	0.65	0.49	0.38	0.30		
3 3/4			1.00	0.71	0.53	0.42	0.33		
4				0.77	0.58	0.46	0.37	0.30	
4 1/2				0.88	0.67	0.53	0.43	0.36	
5				1.00	0.77	0.61	0.50	0.42	0.30
5 1/2					0.86	0.69	0.57	0.48	0.35
6					0.95	0.77	0.63	0.53	0.39
6 1/4					1.00	0.81	0.67	0.56	0.42
6 1/2						0.84	0.70	0.59	0.44
7						0.92	0.77	0.65	0.49
7 1/2						1.00	0.83	0.71	0.53
8							0.90	0.77	0.58
8 1/2							0.97	0.83	0.63
8 3/4							1.00	0.85	0.65
10								1.00	0.77
12 1/2									1.00
15									

1. C_{act} = actual edge distance at which anchor is installed (inches).
2. C_{cr} = critical edge distance for 100% load (inches).
3. C_{min} = minimum edge distance for reduced load (inches).
4. f_c = adjustment factor for allowable load at actual edge distance.
5. $f_{c,cr}$ = adjustment factor for allowable load at critical edge distance. $f_{c,cr}$ is always = 1.00.
6. $f_{c,min}$ = adjustment factor for allowable load at minimum edge distance.
7. $f_c = f_{c,min} + [(1 - f_{c,min}) (C_{act} - C_{min}) / (C_{cr} - C_{min})]$.

Load-Adjustment Factors for Reduced Spacing:

Critical spacing is listed in the load tables. No adjustment in load is required when the anchors are spaced at critical spacing. No additional testing has been performed to determine the adjustment factors for spacing dimensions less than those listed in the load tables.

Load-Adjustment Factors for Carbon-Steel and Stainless-Steel Wedge-All® Anchors in Normal-Weight Concrete: Edge Distance and Shear Load Applied Parallel to Edge

How to use these charts:

1. The following tables are for reduced edge distance.
2. Locate the anchor size to be used for a shear load application.
3. Locate the edge distance ($C_{act||}$) at which the anchor is to be installed.
4. The load adjustment factor ($f_{c||}$) is the intersection of the row and column.
5. Multiply the allowable load by the applicable load adjustment factor.
6. Reduction factors for multiple edges are multiplied together.

Edge Distance Shear ($f_{c||}$) (Shear Applied Parallel to Edge with End Distance $\geq ED_{min}$)



Edge Dist. $C_{act }$ (in.)	Size	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4
	E	2 1/4	3 3/8	4 1/2	5 1/2	6 3/4	7 7/8	9	9 1/2
ED_{min}	9	13 1/2	18	22	27	31 1/2	36	38	
$C_{crit }$	2 1/2	3 3/4	5	6 1/4	7 1/2	8 3/4	10	12 1/2	
$C_{min }$	1	1 1/2	2	2 1/2	3	3 1/2	4	5	
$f_{cmin }$	1.00	0.93	0.70	0.62	0.62	0.62	0.62	0.62	
1		1.00							
1 1/2		1.00	0.93						
2		1.00	0.95	0.70					
2 1/2		1.00	0.96	0.75	0.62				
3			0.98	0.80	0.67	0.62			
3 1/2			0.99	0.85	0.72	0.66	0.62		
4			1.00	0.90	0.77	0.70	0.66	0.62	
5				1.00	0.87	0.79	0.73	0.68	0.62
6					0.97	0.87	0.80	0.75	0.67
7					1.00	0.96	0.87	0.81	0.72
8						1.00	0.95	0.87	0.77
9							1.00	0.94	0.82
10								1.00	0.87
11									0.92
12									0.97
13									1.00

*See page 10 for an explanation of the load table icons

1. Table is not applicable to anchors with $ED < ED_{min}$. Factors from this table may not be combined with load-adjustment factors for shear loads applied perpendicular to edge.
2. $C_{act||}$ = actual edge distance (measured perpendicular to direction of shear load) at which anchor is installed (inches).
3. $C_{crit||}$ = critical edge distance (measured perpendicular to direction of shear load) for 100% load (inches).
4. $C_{min||}$ = minimum edge distance (measured perpendicular to direction of shear load) for reduced load (inches).
5. ED = actual end distance (measured parallel to direction of shear load) at which anchor is installed (inches).
6. ED_{min} = minimum edge distance (measured parallel to direction of shear load).
7. $f_{c||}$ = adjustment factor for allowable load at actual edge distance.
8. $f_{ccrit||}$ = adjustment factor for allowable load at critical edge distance. $f_{ccrit||}$ is always = 1.00.
9. $f_{cmin||}$ = adjustment factor for allowable load at minimum edge distance.
10. $f_{c||} = f_{cmin||} + [(1 - f_{cmin||}) (C_{act||} - C_{min||}) / (C_{crit||} - C_{min||})]$.