W. R. MEADOWS®

SEALTIGHT®

A Family Company Since 1926

QUALITY...SERVICE...INTEGRITY

REZI-WELD GEL PASTE STATE

REDUCTION FACTOR FOR EDGE DISTANCES FOR THREADED ROD

Embedment Depth	Edge Distance Factor, Tension Only			Edge Distance Factor, Shear Only			Spacing Factor, Tension Only		
	C_{CR}	C_{MIN}	f_{RN}	C_{CR}	C_{MIN}	f_{RV}	S_{CR}	S_{MIN}	f_A
9 x D	*1.5 x h_{ef}*	*0.5 x h_{ef}*	*0.54*	*1.5 x h_{ef}*	*0.5 x h_{ef}*	*0.25*	*1.75 x h_{ef}*		

D = Diameter of the rod

S = The measure between anchors from center line to center line

C = The measure between the anchor center line and the free edge

S_{MIN} = The least spacing between anchor for which recognition is desired

C_{MIN} = The least edge distance for recognition is desired

S_{CR} = The least spacing between where no reduction would be applied

C_{CR} = The least edge distance where no reduction would be applied

f_{RN} , f_{RV} = Load reduction factors to be applied when : $C_{MIN} \leq C < C_{CR}$

h_{ef} = Th anchor embedment depth

f_A = Load reduction factors to be applied when : $S_{MIN} \leq S < S_{CR}$

Rezi-Weld Gel Paste State has been tested in accordance to AC58 acceptance criteria for adhesive anchors in concrete and masonry elements and is recognized for the following uses:

- Static Loads
- Critical and Minimum Edge and Spacing Distances
- Long Term Creep at Elevated Temperature
- Static Loading at Elevated Temperature
- Damp Holes
- Under Water Anchoring
- Freeze Thaw Conditions
- Seismic / Wind Loading

TENSION LOADS FOR THREADED RODS -- Safety Factor "Allowable" equals 25% of Ultimate Load (32% for steel)

Threaded Rod Diameter (in.)	Based on Bond Strength, 2000 psi Normal Weight Concrete				Allowable, Based on Steal Strength			
	Hole Diameter (in.)	Minimum Embedment Depth (in.)	Ultimate Tension Load (lbs.)	Allowable Tension Load (lbs.)	ASTM A36 (lbs.)	ASTM A307 GRADE C (lbs.)	ASTM A193 GRADE B7 (lbs.)	304/316 SS (lbs.)
3/8	7/16	3 3/8	9,248	2,312	2,115	2,185	4,555	3,645
1/2	9/16	4 1/2	22,328	5,582	3,775	3,885	8,100	6,480
5/8	3/4	5 5/8	29,950	7,488	5,870	6,075	12,655	10,125
3/4	7/8	6 3/4	39,278	9,820	8,455	8,750	18,225	12,390
7/8	1	7 7/8	53,862	13,466	11,510	11,905	24,805	16,865
1	1 1/8	9	62,697	15,674	15,030	15,550	32,400	22,030
1 1/4	1 3/8	11 1/4	88,594	22,149	23,490	24,295	50,620	34,425

SHEAR LOADS FOR THREADED RODS -- Safety Factor "Allowable" equals 25% of Ultimate Load (32% for steel)

Threaded Rod Diameter (in.)	Based on Bond Strength, 2000 psi Normal Weight Concrete				Allowable, Based on Steal Strength			
	Hole Diameter (in.)	Minimum Embedment Depth (in.)	Ultimate Shear Load (lbs.)	Allowable Shear Load (lbs.)	ASTM A36 (lbs.)	ASTM A307 GRADE C (lbs.)	ASTM A193 GRADE B7 (lbs.)	304/316 SS (lbs.)
3/8	7/16	3 3/8	7,189	1,797	1,090	1,125	2,345	1,870
1/2	9/16	4 1/2	12,863	3,216	1,935	2,000	4,170	3,330
5/8	3/4	5 5/8	22,855	5,714	3,025	3,130	6,520	5,210
3/4	7/8	6 3/4	32,304	8,076	4,355	4,505	9,390	6,390
7/8	1	7 7/8	36,214	9,054	5,930	6,135	12,780	8,680
1	1 1/8	9	52,151	13,038	7,745	8,010	16,690	11,340
1 1/4	1 3/8	11 1/4	69,011	17,253	12,100	12,515	26,075	17,730

SHEAR LOADS FOR THREADED RODS -- Safety Factor "Allowable" equals 25% of Ultimate Load (32% for steel)

Rebar Size	Based on Bond Strength, 2000 psi Normal Weight Concrete						Allowable, Based on Steep Strength, Grade 60	
	Hole Diameter (in.)	Minimum Embedment Depth (in.)	Ultimate Tension Load (lbs.)	Allowable Tension Load (lbs.)	Ultimate Shear Load (lbs.)	Allowable Shear Load (lbs.)	Tension Load (lbs)	Shear Load (lbs.)
#4	5/8	4 1/2	23,203	5,801	11,242	2,811	4,710	3,060
#5	3/4	5 5/8	32,326	8,082	21,032	5,258	7,365	4,740
#6	7/8	6 3/4	44,481	11,120	32,294	8,074	10,605	6,730
#7*	1	7 7/8	49,647	12,412	35,438	8,860	14,430	9180
#8	1 1/8	9	54,812	13,703	38,582	9,646	18,850	12085

*Values were interpolated from #6 and #8 rebar testing

REDUCTION FACTORS TENSILE EDGE DISTANCE - 9D EMBEDMENTS							
Anchor Diameter	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/4"
Ultimate Load	9,248	22,328	29,948	39,276	53,860	62,696	88,592
Edge Distance	Multiplier Table						
1 3/4"	0.55						
2"	0.58						
2 1/4"	0.62	0.54					
2 1/2"	0.65	0.57					
2 3/4"	0.69	0.59					
3"	0.72	0.62	0.56				
3 1/4"	0.76	0.64	0.58				
3 1/2"	0.79	0.67	0.60	0.55			
3 3/4"	0.83	0.69	0.62	0.57			
4"	0.86	0.72	0.64	0.58	0.54		
4 1/4"	0.90	0.74	0.66	0.60	0.56		
4 1/2"	0.93	0.77	0.68	0.62	0.57	0.54	
4 3/4"	0.97	0.80	0.70	0.63	0.59	0.55	
5"	1.00	0.82	0.72	0.65	0.60	0.57	
5 1/4"		0.85	0.74	0.67	0.62	0.58	
5 1/2"		0.87	0.76	0.68	0.63	0.59	
5 3/4"		0.90	0.78	0.70	0.65	0.60	0.55
6"		0.92	0.80	0.72	0.66	0.62	0.56
6 1/4"		0.95	0.82	0.73	0.67	0.63	0.57
6 1/2"		0.97	0.84	0.75	0.69	0.64	0.58
6 3/4"		1.00	0.86	0.77	0.70	0.65	0.59
7"			0.88	0.78	0.72	0.67	0.60
7 1/4"			0.90	0.80	0.73	0.68	0.61
7 1/2"			0.92	0.82	0.75	0.69	0.62
7 3/4"			0.94	0.84	0.76	0.70	0.63
8"			0.96	0.85	0.78	0.72	0.64
8 1/4"			0.98	0.87	0.79	0.73	0.65
8 1/2"			1.00	0.89	0.80	0.74	0.66
8 3/4"				0.90	0.82	0.76	0.67
9"				0.92	0.83	0.77	0.68
9 1/4"				0.94	0.85	0.78	0.69
9 1/2"				0.95	0.86	0.79	0.70
9 3/4"				0.97	0.88	0.81	0.71
10"				1.00	0.89	0.82	0.72
10 1/2"					0.92	0.84	0.74
11"					0.95	0.87	0.76
11 1/2"					0.98	0.90	0.78
12"					1.00	0.92	0.80
12 1/2"						0.95	0.82
13"						0.97	0.84
13 1/2"						1.00	0.86
14"							0.88
14 1/2"							0.90
15"							0.92
15 1/2"							0.94
16"							0.96
16 1/2"							0.98
17"							1.00

REDUCTION FACTORS SHEAR EDGE DISTANCE - 9D EMBEDMENTS							
Anchor Diameter	3/8"	1/2"	5/8"	3/4"	7/8"	1"	1 1/4"
Ultimate Load	9,248	22,328	29,948	39,276	53,860	62,696	88,592
Edge Distance	Multiplier Table						
1 3/4"	0.25						
2"	0.31						
2 1/4"	0.37	0.25					
2 1/2"	0.42	0.29					
2 3/4"	0.48	0.33					
3"	0.54	0.38	0.25				
3 1/4"	0.60	0.42	0.28				
3 1/2"	0.65	0.46	0.32	0.25			
3 3/4"	0.71	0.50	0.35	0.28			
4"	0.77	0.54	0.39	0.31	0.25		
4 1/4"	0.83	0.58	0.42	0.34	0.28		
4 1/2"	0.88	0.63	0.45	0.37	0.30	0.25	
4 3/4"	0.94	0.67	0.49	0.39	0.33	0.58	
5"	1.00	0.71	0.52	0.42	0.36	0.30	
5 1/4"		0.75	0.56	0.45	0.38	0.33	
5 1/2"		0.79	0.59	0.48	0.41	0.35	
5 3/4"		0.83	0.63	0.51	0.44	0.38	0.25
6"		0.88	0.66	0.54	0.46	0.41	0.27
6 1/4"		0.92	0.69	0.57	0.49	0.43	0.30
6 1/2"		0.96	0.73	0.60	0.52	0.46	0.32
6 3/4"		1.00	0.76	0.63	0.54	0.48	0.35
7"			0.80	0.65	0.57	0.51	0.37
7 1/4"			0.83	0.68	0.60	0.53	0.40
7 1/2"			0.86	0.71	0.63	0.56	0.42
7 3/4"			0.90	0.74	0.65	0.59	0.44
8"			0.93	0.77	0.68	0.61	0.47
8 1/4"			0.97	0.80	0.71	0.64	0.49
8 1/2"			1.00	0.83	0.73	0.66	0.52
8 3/4"				0.86	0.76	0.69	0.54
9"				0.88	0.79	0.72	0.56
9 1/4"				0.91	0.81	0.74	0.59
9 1/2"				0.94	0.84	0.77	0.61
9 3/4"				0.97	0.87	0.79	0.64
10"				1.00	0.89	0.82	0.66
10 1/2"					0.92	0.84	0.69
11"					0.95	0.87	0.71
11 1/2"					0.97	0.90	0.73
12"					1.00	0.92	0.76
12 1/2"						0.95	0.78
13"						0.97	0.81
13 1/2"						1.00	0.83
14"							0.85
14 1/2"							0.88
15"							0.90
15 1/2"							0.93
16"							0.95
16 1/2"							0.98
17"							1.00

*9D is the embedment depth of the anchor (9 x 1/2"); in this instance 1/2" threaded rod embedded 4-1/2"

Temperature	Load* Time	Final Cure* Time
115°F	1.5 Hrs.	3 Hrs.
95°F	3 Hrs.	20 Hrs.
80°F	4 Hrs.	24 Hrs.
65°F	8 Hrs.	42 Hrs.
50°F	16 Hrs.	56 Hrs.
35°F	24 Hrs.	72 Hrs.

The chart to the left indicates the temperature vs Load times for Rezi-Weld Gel Paste State

*Load time is the amount of time required before applying allowable load (bolt-up time). Load-time and final cure time is based on the lowest temperature experienced during the cure schedule. Therefore, if the lowest temperature experienced by the anchor is 50°F, it will take 56 hours to achieve full cure and 16 hours to until anchor can be bolted up.