

Tension and shear design strengths for Sure-Wedge® in cracked concrete

Nominal anchor diameter (in.)	Nominal embed. h_{nom} (in.)	Minimum concrete compressive strength									
		2,500 psi		3,000 psi		4,000 psi		6,000 psi		8,000 psi	
		ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)
3/8	2.33	1,406	1,683	1,540	1,844	1,778	1,859	2,178	1,859	2,515	1,859
1/2	2.33	1,563	1,683	1,712	1,844	1,977	2,129	2,421	2,607	2,795	3,010
	3.59	2,764	3,133	3,006	3,133	3,431	3,133	4,134	3,133	4,719	3,133
5/8	3.23	3,112	5,876	3,410	5,876	3,937	5,876	4,822	5,876	5,568	5,876
	4.49	4,420	5,876	4,842	5,876	5,591	5,876	6,847	5,876	7,907	5,876
3/4	3.74	3,999	7,995	4,380	7,995	5,058	7,995	6,195	7,995	7,153	7,995
	5.26	7,066	9,282	7,740	9,282	8,937	9,282	10,946	9,282	12,639	9,282

Tension and shear design strengths for Sure-Wedge® in uncracked concrete

Nominal anchor diameter (in.)	Nominal embed. h_{nom} (in.)	Minimum concrete compressive strength									
		2,500 psi		3,000 psi		4,000 psi		6,000 psi		8,000 psi	
		ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)	ΦN_n Tension (lbs.)	ΦV_n Shear (lbs.)
3/8	2.33	2,161	1,859	2,316	1,859	2,584	1,859	3,014	1,859	3,362	1,859
1/2	2.33	2,206	2,376	2,369	2,603	2,650	3,005	3,104	3,133	3,472	3,133
	3.59	3,720	3,133	4,075	3,133	4,705	3,133	5,763	3,133	6,654	3,133
5/8	3.23	3,557	5,876	3,897	5,876	4,499	5,876	5,511	5,876	6,363	5,876
	4.49	6,240	5,876	6,836	5,876	7,893	5,876	9,667	5,876	11,162	5,876
3/4	3.74	5,141	7,995	5,632	7,995	6,503	7,995	7,965	7,995	9,197	7,995
	5.26	8,075	9,282	8,846	9,282	10,214	9,282	12,510	9,282	14,444	9,282

Converted allowable loads for Sure-Wedge® in cracked concrete

Nominal anchor diameter (in.)	Nominal embed. h_{nom} (in.)	Minimum concrete compressive strength									
		$f'_c = 2,500$ psi		$f'_c = 3,000$ psi		$f'_c = 4,000$ psi		$f'_c = 6,000$ psi		$f'_c = 8,000$ psi	
		$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)
3/8	2.33	950	1,137	1,041	1,246	1,336	1,256	1,472	1,256	1,699	1,256
1/2	2.33	1,056	1,137	1,157	1,246	1,336	1,438	1,636	1,762	1,889	2,034
	3.59	1,867	2,118	2,031	2,118	2,318	2,118	2,793	2,118	3,189	2,118
5/8	3.23	2,103	3,971	2,304	3,971	2,660	3,971	3,258	3,971	3,762	3,971
	4.49	2,986	3,971	3,272	3,971	3,778	3,971	4,627	3,971	5,342	3,971
3/4	3.74	2,702	5,402	2,960	5,402	3,418	5,402	4,186	5,402	4,883	5,402
	5.26	4,774	6,270	5,230	6,270	6,039	6,270	7,396	6,270	8,540	6,270

- Allowable load values are calculated using a conversion factor, α , from factored design strengths.
- Tabulated allowable load values assume 30% dead load and 70% live load, with controlling load combination 1,2D + 1,6L. Calculated weighted average for the conversion factor, $\alpha = 1,2*(0,3) + 1,6*(0,7) = 1,48$.

Converted allowable loads for Sure-wedge® in uncracked concrete

Nominal anchor diameter (in.)	Nominal embed. h_{nom} (in.)	Minimum concrete compressive strength									
		2,500 psi		3,000 psi		4,000 psi		6,000 psi		8,000 psi	
		$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)	$T_{allowable ASD}$ Tension (lb)	$V_{allowable ASD}$ Shear (lb)
3/8	2.33	1,460	1,256	1,565	1,256	1,746	1,256	2,037	1,256	2,272	1,256
1/2	2.33	1,491	1,605	1,600	1,759	1,790	2,031	2,097	2,117	2,346	2,117
	3.59	2,513	2,117	2,753	2,117	3,179	2,117	3,894	2,117	4,496	2,117
5/8	3.23	2,403	3,970	2,633	3,970	3,040	3,970	3,723	3,970	4,299	3,970
	4.49	4,216	3,970	4,619	3,970	5,333	3,970	6,532	3,970	7,542	3,970
3/4	3.74	3,474	5,402	3,805	5,402	4,394	5,402	5,382	5,402	6,214	5,402
	5.26	5,456	6,272	5,977	6,272	6,901	6,272	8,452	6,272	9,760	6,272

- Allowable load values are calculated using a conversion factor, α , from factored design strengths.
- Tabulated allowable load values assume 30% dead load and 70% live load, with controlling load combination 1,2D + 1,6L. Calculated weighted average for the conversion factor, $\alpha = 1,2*(0,3) + 1,6*(0,7) = 1,48$.

Tension and shear design strengths for Sure-Wedge® in masonry

Nominal anchor diameter (in.)	Nominal embed. h_{nom} (in.)	Uncracked masonry				Cracked masonry	
		Field of wall		Top of wall		ΦN_n	ΦV_n
		ΦN_n	ΦV_n	ΦN_n	ΦV_n		
		Tension (lb.)	Shear (lb.)	Tension (lb.)	Shear (lb.)	Tension (lb.)	Shear (lb.)
1/4	1 5/8	177	516	177	94	--	--
3/8	2.33	730	1,075	585	385	333	1,075
1/2	2.33	807	1,515	624	961	574	1,515
	3,59	1,165	1,515	986	961	829	1,515
5/8	3,23	1,733	2,248	1,665	940	1,194	2,248
	4,49	1,963	2,248	1,633	940	1,353	2,248
3/4	3,74	1,302	3,569	1,053	1,777	1,302	3,569
	5,26	2,522	3,569	2,522	1,777	2,522	3,569

Testing was conducted by a third-party accredited testing facility. Results have not yet been evaluated by ICC and are currently not included in our ICC-ES report, ESR-4413

Converted allowable loads for Sure-Wedge® in masonry

Nominal anchor diameter (in.)	Nominal embed. h_{nom} (in.)	Uncracked masonry				Cracked masonry	
		Field of wall		Top of wall		ΦN_n	ΦV_n
		ΦN_n	ΦV_n	ΦN_n	ΦV_n		
		Tension (lb.)	Shear (lb.)	Tension (lb.)	Shear (lb.)	Tension (lb.)	Shear (lb.)
1/4	1 5/8	120	349	120	64	--	--
3/8	2.33	493	726	396	260	225	396
1/2	2.33	545	1,024	422	650	388	422
	3,59	787	1,024	787	650	560	787
5/8	3,23	1,171	1,519	1,103	635	807	1,103
	4,49	1,327	1,519	1,126	635	914	1,126
3/4	3,74	880	2,412	712	1,201	880	712
	5,26	1,704	2,412	1,704	1,201	1,704	1,704

1. Allowable load values are calculated using a conversion factor, α , from factored design strengths.
2. Tabulated allowable load values assume 30% dead load and 70% live load, with controlling load combination $1,2D + 1,6L$. Calculated weighted average for the conversion factor, $\alpha = 1,2*(0,3) + 1,6*(0,7) = 1,48$.

Testing was conducted by a third-party accredited testing facility. Results have not yet been evaluated by ICC and are currently not included in our ICC-ES report, ESR-4413