

AVAILABLE MATERIALS

- 304/316 Stainless Steel

FEATURES/ADVANTAGES

- ACI 318 category 1 anchor for cracked or uncracked concrete
- Suitable for resisting seismic design loads
- Required hole diameter equals anchor diameter
- Can be loaded immediately
- Nut and washer assembled to anchor
- Simple to install
- For medium to heavy loads

CONCERNS











- Hole diameter is critical
- Concrete only

APPROVALS/LISTINGS

- ACI 318 Category 1 for cracked concrete
- ICC ESR - 2461
- Contact customer service for approvals / listings for state DOT's



ORDER DETAIL

Anchor Dimensions	Order Code 304 / 316SS	Th [in]	d _o [in]	h _o [in]	h _{nom} [in]	h _{ef} [in]	L [in]	t _{max} [in]	T _{mat} [ft-lbs]	d _c [in]	WS [in]
											
1/2" x 3-3/4"	2312334 / 231233S	1/2	1/2	3-1/4	2-7/8	2-1/2	3-3/4	1/4	60	9/16	3/4
1/2" x 4-1/2"	2312412 / 231241S	1/2	1/2	3-1/4	2-7/8	2-1/2	4-1/2	1	60	9/16	3/4
1/2" x 5-1/2"	2312512 / 231251S	1/2	1/2	3-1/4	2-7/8	2-1/2	5-1/2	2	60	9/16	3/4
1/2" x 7"	2312700 / 231270S	1/2	1/2	3-1/4	2-7/8	2-1/2	7	3-1/2	60	9/16	3/4
304/316SS											
5/8" x 4-3/4"	2358434 / 235843S	5/8	5/8	4-1/8	3-3/4	3-1/4	4-3/4	1/4	110 / 96	11/16	15/16
5/8" x 6"	2358600 / 235860S	5/8	5/8	4-1/8	3-3/4	3-1/4	6	1-1/2	110 / 96	11/16	15/16
5/8" x 8-1/2"	2358812 / 235881S	5/8	5/8	4-1/8	3-3/4	3-1/4	8-1/2	4	110 / 96	11/16	15/16
5/8" x 10"	2358100 / 235810S	5/8	5/8	4-1/8	3-3/4	3-1/4	10	5-1/2	110 / 96	11/16	15/16

304 Stainless Steel / 316 Stainless steel / Approved for cracked or uncracked concrete / ACI 318, Category 1



Load & Performance Data	Conc. (psi)	Symbol	Units	1/2"	5/8"
Cracked Concrete					
Avg.ultimate load,tension	4,000	N_{pn}	lbs	4,447	9,603
Avg. ultimate load, shear	4,000	V_n	lbs	9,615	15,345
Allowable loads, tension ¹	2,500	N_{allow}	lbs	1,234	2,187
	4,000	N_{allow}	lbs	1,561	2,767
	6,000	N_{allow}	lbs	1,912	3,388
	8,500	N_{allow}	lbs	2,276	4,033
Uncracked Concrete					
Allowable loads, tension ¹	2,500	N_{allow}	lbs	1,974	3,088
	4,000	N_{allow}	lbs	2,497	3,906
	6,000	N_{allow}	lbs	3,058	4,784
	8,500	N_{allow}	lbs	3,640	5,694
Cracked and Uncracked Concrete					
Allowable loads, shear ¹	2,500	N_{allow}	lbs	2,824	4,711
	>4,000	N_{allow}	lbs	2,824	5,617

Spacing & Edge Distance

Effective anchorage depth	h_{ef}	in	2 1/2	3 1/4	
Critical spacing	S_{ac}	in	16	19 1/2	
Critical Edge Distance	C_{ac}	in	8	9 3/4	
Cracked and Uncracked Concrete					
Minimum Spacing for Edge Distance C	$S_{a,min}/C$	in	2 1/2 / 5	3 / 6	
Minimum Edge Distance for Spacing S	$C_{a,min}/S$	in	3 / 6	3 1/2 / 9 1/2	
Minimum thickness of concrete slab	h_{min}	in	5	6 1/2	

Installation Parameters

Drilled hole diameter	d_o	in	1/2	5/8
Diameter of clearance hole	d_c	in	9/16	11/16
Depth of drilled hole	h_o	in	3 1/4	4 1/8
Installation torque	T_{inst}	ft-lbs	60	110 / 96
Wrench size	WS	in	3/4	15/16

1) A safety factor of 1.48 was used to calculate the allowable loads. This is based on a load combination of 30% dead loads and 70% live loads.

