



# MASON INDUSTRIES, Inc.

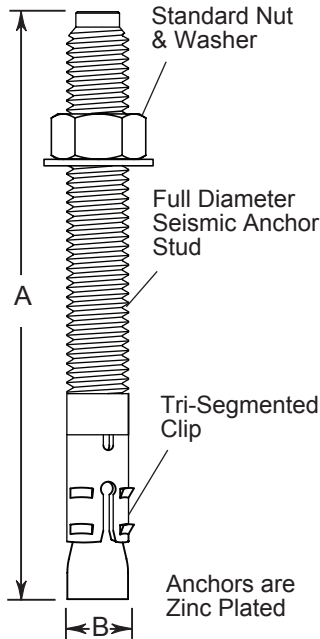
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 CUSTOMER \_\_\_\_\_  
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 MASON M.I. \_\_\_\_\_  
 DWG. NO. \_\_\_\_\_

# SAS & SASE

Seismic Anchor Stud with Nut & Washer (Standard & Extended Length)



### TYPE SAS STANDARD LENGTH ANCHOR STUD RATINGS BASED ON ALLOWABLE STRESS

DESIGN (ASD)\* installed into 2500 psi (17.2 Mpa) Normal Weight or Sand-Lightweight Concrete

Type and Size	Embedment Depth (in) (mm)	Normal Weight Concrete		Lightweight Concrete	
		Tension† (lbs) (kg)	Shear (lbs) (kg)	Tension† (lbs) (kg)	Shear (lbs) (kg)
SAS-3/8	2 51	445 200	650 295	360 165	390 175
SAS-1/2	2 3/4 70	980 445	1055 480	590 270	635 290
SAS-5/8	3 3/8 86	1325 600	2845 1290	795 360	1710 775
SAS-3/4	4 1/8 105	1520 690	3870 1755	915 415	2325 1055
SAS-1	5 1/4 133	2220 1005	5960 2705	1335 605	3575 1620

### TYPE SASE EXTENDED LENGTH ANCHOR STUD RATINGS BASED ON ALLOWABLE STRESS

DESIGN (ASD)\* installed into 2500 psi (17.2 Mpa) Normal Weight or Sand-Lightweight Concrete

Type and Size	Embedment Depth (in) (mm)	Normal Weight Concrete		Lightweight Concrete	
		Tension† (lbs) (kg)	Shear (lbs) (kg)	Tension† (lbs) (kg)	Shear (lbs) (kg)
SASE-3/8	2 7/8 73	950 430	820 370	690 315	820 370
SASE-1/2	3 7/8 98	1275 580	2960 1340	1080 490	2325 1055
SASE-5/8	5 1/8 130	2355 1070	4520 2050	1660 755	3580 1625
SASE-3/4	5 3/4 146	2745 1245	6980 3165	1645 745	4190 1900

### TYPE SAS & SASE ANCHOR STUD RATINGS BASED ON ALLOWABLE STRESS DESIGN (ASD)\*

installed in the Soffit of 3000 psi (20.7 Mpa) Normal Weight or Sand-Lightweight Concrete-filled Profile Steel Deck Assemblies (minimum 20 gauge 3" 76mm profile). Anchors must be installed in either the lower or upper flutes of the profile deck no more than 1" 25mm from flute centerline.

Type and Size	Embedment Depth (in) (mm)	Tension (lbs) (kg)		Shear (lbs) (kg)	
		SAS-3/8	2 51	430 195	725 330
SASE-3/8	3 3/8 86	760 345	1590 720		
SAS-1/2	2 3/4 70	695 315	970 440		
SASE-1/2	4 1/2 114	930 420	2085 945		
SAS-5/8	3 3/8 86	890 405	1200 545		
SASE-5/8	5 5/8 143	1700 770	3185 1445		

For combined allowable stress design tension and shear forces on anchors, use the following equation:

$$\frac{T_{Applied}}{T_{Allowable ASD}} + \frac{V_{Applied}}{V_{Allowable ASD}} \leq 1.2$$

### TYPE SAS & SASE ANCHOR STUD DIMENSIONS

Type and Size	A		B		Installation Torque	
	(in)	(mm)	(in)	(mm)	(ft-lbf)	(N-m)
SAS-3/8	3 1/2	89	3/8	10	30	41
SAS-1/2	4 1/4	108	1/2	13	50	68
SAS-5/8	5	127	5/8	16	85	115
SAS-3/4	6 1/4	159	3/4	19	180	244
SAS-1	7	178	1	25	230	312
SASE-3/8	5	127	3/8	10	30	41
SASE-1/2	5 1/2	140	1/2	13	50	68
SASE-5/8	7	178	5/8	16	85	115
SASE-3/4	8 1/2	216	3/4	19	180	244

\* These values are applicable when the anchors are installed with periodic special inspection as set forth in Section 1701.5.2 of the UBC, Section 1704.13 of the 2006/2003 IBC, or Section 1704.15 of the 2009 IBC.

† The Tension values may be increased for greater compressive strength, up to 8500 psi (58.6 MPa), by multiplying the value by  $(F'_c/2500)^{0.5}$ , where  $F'_c$  is the specified strength of concrete in psi.  
 For example: SAS-1/2 in 4000 psi normal weight concrete

$$T = \left(\frac{4000}{2500}\right)^{0.5} \times 980 \text{ lbs} = 1240 \text{ lbs}$$

#### NOTES:

- All values are for single anchors with no edge distance or spacing reduction and assume supplementary reinforcement condition B. Shear values exclude consideration of the concrete breakout failure mode.
- Anchorage must be designed in accordance with ACI 318-08 Appendix D.
- Allowable loads are for the attachment of non-structural components.
- Allowable loads are based on 100% seismic loading in seismic design categories C-F.

Anchors have the following Code Reports:

- ICC-ES ESR-1771/3037 and City of Los Angeles RR25705/25891 for cracked & uncracked concrete
- Florida Statewide Product Approval FL11506.6

Mason Industries designs are in accordance with ACI 318-08 Appendix D.

SIZE	QTY.	TAG

Form S-106 06/2011

FORM BY: SJ

DWN:

CHKD:

DATE:

DWG. No.