

ALLOWABLE DESIGN LOADS 316 SS

Modern design and high performance

ALLOWABLE BENDING YIELD STRENGTH AND FASTENER ALLOWABLE STEEL STRENGTH

FASTENER DESIGNATION	FASTENER SIZE	Minor Thread (ROOT) Diameter, D1(in.)	Unthreaded Shank Diameter (in)	Major Thread (OUTSIDE) Diameter d (in.)	Bending Yield (Fyb) (psi)	Tensile (lbf)	Shear (lbf)
Fine Screw 316 Stainless	# 8	0.104	0.116	0.159	150,150	327	255
	# 9	0.113	0.131	0.176	163,781	425	322
Universal Screw 316 Stainless Steel	# 9	0.113	0.131	0.176	168,639	475	318
	# 10	0.130	0.146	0.197	187,793	535	423
Construction Screw 316 Stainless Steel	# 5/16	0.170	0.197	0.274	200,710	1,067	776

1. Bending yield strength determined per methods specified in ASTM F1575 and based on the minor thread (root) diameter.

2. Tension and shear design load applied FOS=3 to average tested results per AC233 3.2.1



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ALLOWABLE DESIGN LOADS FOR SINGLE SCREW SUBJECT TO TENSION

FASTENER DESIGNATION	FASTENER SIZE	D1761 WITHDRAWAL (lbf/in) SG=0.55	D1761 PULL THROUGH (lbf) SG=0.55
Fine Screw 316 Stainless	# 8	121	69
	# 9	127	92
Universal Screw 316 Stainless Steel	# 9	133	-
	# 10	144	184
Construction Screw 316 Stainless Steel	# 5/16	235	517

3. FOS=5
4. Edge Distance = 0.75" (withdrawal), 2.75" (pull through)
5. Installation details must be sufficient to prevent splitting of wood
6. Test location = side grain (withdrawal), face grain (pull-through)

Allowable Design Load Determination Methods

Property	Procedure
Withdrawal Design Load	Apply FOS=5 to average test results per AC233 4.2.3 and compare to Calculated value per NDS 12.2.2 (use lesser of tested or calculated)
Pull through Strength	Apply FOS=5 to average test results per AC233 4.2.5

NDS 12.2.2 Withdrawal Calculation for Wood Screws - ($W=2850 \times G^2 \times D$)
 W =Withdrawal load (lbs/in)
 G = Average tested Specific Gravity (per AC233 3.3)
 D =outside diameter screw (per AC233 3.3) (d min from U2 drawings -inches)
 Embedment Length= threaded length (Lt avg from U2 drawings - inches)

