



COX INDUSTRIES

STUD WELDING

Standard Threaded Stud Load Strengths

Standard Mild Steel Arc Welding Studs - Mechanical Properties

Stud Thread Diameter	Max Shear in-lbs*	Yield Load in-lbs	Ultimate Load in-lbs	Yield Torque**	Ultimate Torque**	Recommended Tightening Torque***
10-24	746	830	1030	2.8 ft-lbs	3 ft-lbs	2 ft-lbs
1/4-20	1390	1550	1900	6 ft-lbs	7 ft-lbs	5 ft-lbs
5/16-18	2300	2560	3190	13 ft-lbs	15 ft-lbs	12 ft-lbs
3/8-16	3400	3800	4700	24 ft-lbs	27 ft-lbs	21 ft-lbs
7/16-14	4650	5200	6400	38 ft-lbs	42 ft-lbs	33 ft-lbs
1/2-13	6200	6900	8650	59 ft-lbs	65 ft-lbs	51 ft-lbs
5/8-11	9900	11000	13780	118 ft-lbs	130 ft-lbs	101 ft-lbs
3/4-10	14600	16300	20300	209 ft-lbs	230 ft-lbs	189 ft-lbs
7/8-9	20200	22600	28100	337 ft-lbs	370 ft-lbs	288 ft-lbs
1-8	26600	29600	36900	505 ft-lbs	555 ft-lbs	432 ft-lbs

Steel Properties Min. Tensile Strength 61,000 psi. Min. Yield Strength 49,000 psi

*Shear strength here represents results when stud is subjected to pure shear without any bending moment present.

**Note Many variables affect the torque results such as steel strength, thread finish, lubrication, washers, and hardness

***Recommended tightening torque data represents 75% of the yield torque figures

Standard Stainless Steel Arc Welding Studs - Mechanical Properties

Stud Thread Diameter	Max Shear in-lbs*	Yield Load in-lbs	Ultimate Load in-lbs	Yield Torque**	Ultimate Torque**	Recommended Tightening Torque***
10-24	850	590	1180	2 ft-lbs	2.9 ft-lbs	1.42 ft-lbs
1/4-20	1600	1100	2220	4.3 ft-lbs	7 ft-lbs	3.5 ft-lbs
5/16-18	2640	1830	3660	9 ft-lbs	14 ft-lbs	7 ft-lbs
3/8-16	3900	2700	5400	17 ft-lbs	27 ft-lbs	13 ft-lbs
7/16-14	5350	3700	7440	27 ft-lbs	44 ft-lbs	20 ft-lbs
1/2-13	7150	4950	9900	42 ft-lbs	66 ft-lbs	32 ft-lbs
5/8-11	11300	7900	15800	84 ft-lbs	135 ft-lbs	64 ft-lbs
3/4-10	16800	11600	23300	148 ft-lbs	230 ft-lbs	111 ft-lbs
7/8-9	23200	16199	32300	241 ft-lbs	387 ft-lbs	181 ft-lbs
1-8	30500	21200	42400	361 ft-lbs	580 ft-lbs	271 ft-lbs

Stainless steel properties Tensile Strength 70,000 psi min. Yield Strength 35,000 psi. min. (annealed)

*Shear strength here represents results when stud is subjected to pure shear without any bending moment present

**Note Many variables affect the torque results such as steel strength, thread finish, lubrication, washers, and hardness and the high elongation typical in annealed stainless steel

***Recommended tightening torque data represents 75% of the yield torque figures