Bi-Flex™ 300 Series Stainless Steel Bi-Metal Self-Drilling Screws

Technical Information

Performance Data

Pull-Out Values

Screw Size	Pt.	Drill Capacity (in.)	Pull-Out (Lbs)								
			Steel RB60-75 50 – 66KSI							Aluminum 6063-T5 22KSI	
			18 ga.	16 ga.	14 ga.	12 ga.	1/8"	3/16"	1/4"	1/8"	1/4"
8-18	#2	0.100	499	558	875	1425					
10-16	#2	0.110	595	633	943	1433	–	–	–	994	–
10-16	#3	0.187	–	616	684	1242	1605	1527	–	961	–
12-14	#2	0.110	528	750	892	1536	–	–	–	1132	–
12-14	#3	0.230	417	679	802	1371	2028	2499	–	974	–
12-24	#5	0.500	–	–	–	–	–	2110	2781	538	1995
1/4-14	#2	0.110	619	885	1082	1830	2943	–	–	1310	–
1/4-20	#3	0.230	–	680	780	1442	2623	3684	4069	1037	–
1/4-20	#5	0.500	–	–	–	–	–	–	2622	–	1724

Ultimate Strengths**

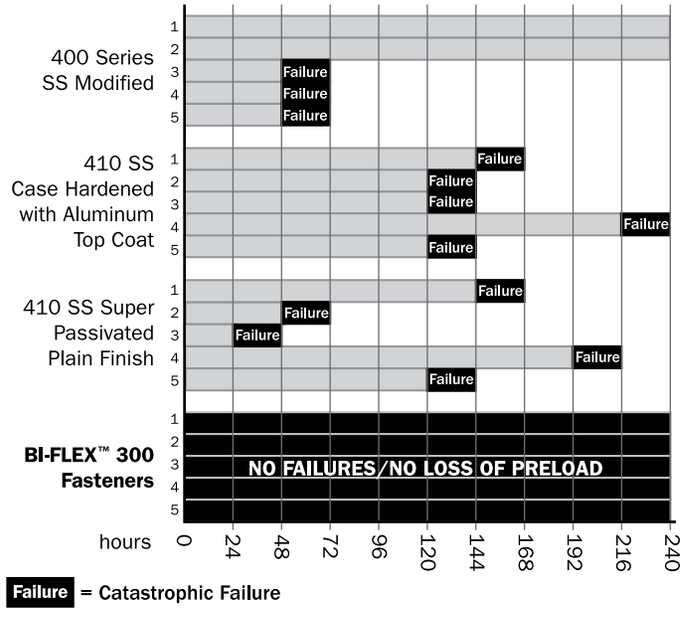
Size	Tensile (Lbs)	Shear Average Lbs Ultimate
10-16	1847	1282
12-14	2628	1950
12-24	2734	2284
1/4-14	3459	2676
1/4-20	4124	2860

** Values are for 300 series stainless fastener threaded shank

Susceptibility To Embrittlement Failures

In head to head testing, Bi-Flex™ 300 fasteners and three different types of 400 series martensitic stainless, self-drilling screws were installed in identical test coupons of unplated steel and aluminum. They were then subjected to a mildly corrosive environment of 5% neutral salt spray testing per ASTM B117. At the start of the test all samples were torqued (pre-loaded) to 75 in lbs. Every 24 hours the samples were inspected for torque value and retorqued to 75 in lbs.

The parts were evaluated by scanning electron microscope (S.E.M.) to determine the type of fracture that had occurred. The three 400 series fasteners showed an intergranular type failure, indicative of fracturing that occurs from hydrogen assisted stress corrosion cracking. **No failures or loss of preload occurred with the Bi-Flex fasteners.**



All fasteners were placed through a clear hole in 6061 T6 aluminum with a thickness of 0.125" and drilled into an unplated steel strip measuring a thickness of 0.125". A strip of 0.060" aluminum was placed in between the 0.125" aluminum and steel strip on one side, to simulate a fastener placed under load.

NOTE: All performance data shown is based on tests performed under laboratory conditions at independent construction testing facilities. The appropriate safety factor should be applied and code requirements factored into specification and use of these fasteners. A safety factor of 4:1 or 25% of the ultimate average values shown is generally accepted as an appropriate working load. Final determination of the appropriate safety factor and use of these fasteners is the sole responsibility of the user, specifying Engineer, Architect or other responsible person designing the connection. Due to a wide variety of application conditions or intervening factors not under our control, we assume no liability for the use of the information provided in this document.