



Overview

Stainless steels are referred to as “stainless” because they develop a thin, hard film of chromium oxide in the presence of oxygen (air) that protects the metal from corrosion. This is called passivation. This protective film regenerates itself if the surface is scratched and offers better corrosion protection than standard steel fasteners. Stainless steels are characterized primarily by their corrosion resistance, high strength and ductility.

Features/Benefits

- Low electrical conductivity
- Minimal magnetism
- Exceptional corrosion resistance
- Elevated temperature limits

Maximum Operating Temperature

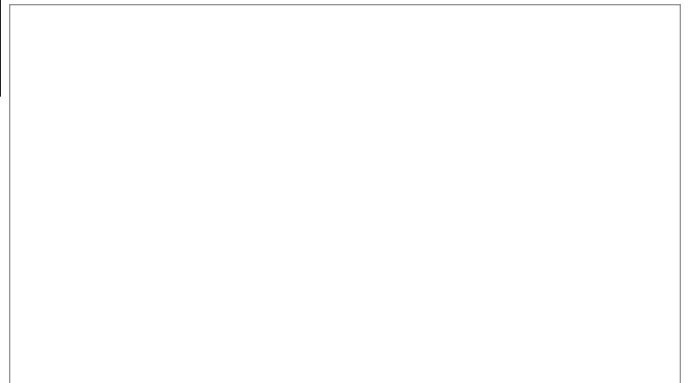
Grade	Continuous °F (°C)	Intermittent °F (°C)
302	1,500 (815)	1,600 (870)
303	1,500 (815)	1,600 (870)
304 (A2)	1,500 (815)	1,600 (870)
316 (A4)	1,500 (815)	1,600 (870)
410	1,300 (705)	1,500 (815)
420	1,150 (620)	1,360 (735)
SAE Grade 8	450 (232)	500 (260)
Tru-Torq®	450 (232)	500 (260)

Applications



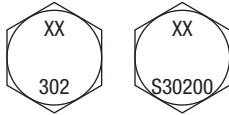
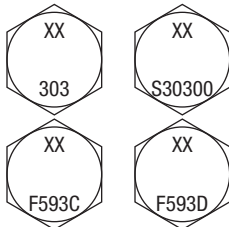
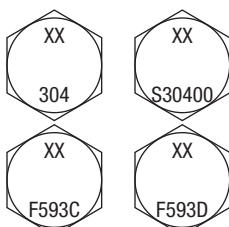
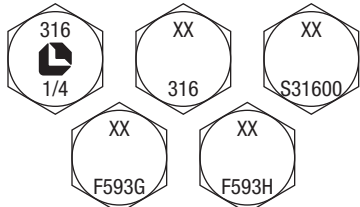




Stainless steel products can be used in any application where corrosion, temperature and sanitary conditions must be considered. These areas include, but are not limited to:

- Liquid transport containers
- Food processing
- Chemical industry
- Petroleum industries
- Kitchen equipment
- Surgical equipment
- Furnace and heat-exchanger parts
- Welded construction
- Fittings
- Boats
- Waterfronts



Types of Stainless Steel and Associated Fastener Markings

Stainless steel cap screws are required to have the type of stainless steel and the manufacturer identification symbol marked on the head. Listed below are the most common markings and characteristics of common grades of stainless steel fasteners, however there may be others.

18-8*		302 – Non-magnetic** in annealed condition Slightly magnetic in cold worked condition Nominal Tensile Strength: 100,000 PSI	300 Series
		303 – High corrosion resistance Nominal Tensile Strength: 100,000 PSI	
		304 – Most widely used Good corrosion resistance Good formability Nominal Tensile Strength: 100,000 PSI	
		316 – Higher strength at elevated temperatures Most popular of stainless steels Nominal Tensile Strength: 100,000 PSI	
		410 – Heat-treatable stainless Used where corrosion is not severe Nominal Tensile Strength: 110,000 PSI min.	400 Series
		420 – Magnetic Nominal Tensile Strength: 125,000 PSI	
		A2 – Comparable to 18-8 Good corrosion resistance Nominal Tensile Strength: 100,000 PSI	Metric
		A4 – Comparable to 316 Higher strength at elevated temperatures Nom. Tensile Strength: 100,000 PSI	

*The term 18-8 refers to the stainless steel composition with 18% chromium and 8% nickel.
 302, 303 and 304 are all 18-8 stainless steel.

**All stainless steels are slightly magnetic, especially smaller sizes.