

Reli-A-Pak® Bolt, Nut, & Gasket Sets by Reliable Fasteners, Inc.

18-8 Stainless Steel (AISI 304-SS)

18-8 stainless steel is the most popular type of stainless used in the production of fasteners. This stainless steel is composed of approximately 18% chromium and 8% nickel, thus the name 18-8. The term 18-8 is used interchangeably when referring to 300 series stainless steel. It characterizes fasteners made from 302, 303, 304, and 305 stainless steel, among others. All of these grades have good strength and corrosion resistance. There is little overall difference in corrosion resistance among these grades, but slight differences in chemical composition can make certain grades more resistant than others against particular chemicals or atmospheres. The most common grade of 18-8 stainless steel is 304.

AISI 316 Stainless Steel

The next level of stainless steel commonly used in fastener production is grade 316, which contains an addition of 2% to 4% molybdenum that gives it an improved resistance to corrosion in a wide range of environments. Compared to grade 304, grade 316 stainless steel has a higher resistance to pitting and crevice corrosion in chloride environments. 316 stainless steel also maintains its strength at higher temperatures than 18-8.

	Dimensional Properties	Mechanical Properties		
		Cold Formed	Hot Formed	
18-8 & 316 SS Bolts	Head & Body Dimensions to ANSI / ASME B18.2.1	100-125	Tensile, ksi	70 min
		55-75	Yield, ksi	30 min
	Thread Dimensions to ANSI / ASME B1.1 Class 2A fit	B100	Rockwell Hardness	B70 min
		30	Elongation %	30 min
		40	Reduction of Area %	40 min
	Thread Length to ANSI / ASME B18.2.1 minimum – actual thread length may be longer	2.0 max	Magnetic Permeability	2.0 max
18-8 & 316 SS Nuts	Thickness & Width Across Flats to ANSI / ASME B18.2.2	100-125	Tensile, ksi	
		55-75	Yield, ksi	
	Thread Dimensions to ANSI / ASME B1.1 Class 2B fit	B100	Rockwell Hardness	
		30	Elongation %	
		40	Reduction of Area %	
		2.0 max	Magnetic Permeability	

This is only a partial description of these specifications, and should not be used as the only source of data.
For complete and up to date information, consult the current version of the specification.

RELI-A-PAK® is a registered trademark of Reliable Fasteners, Inc.