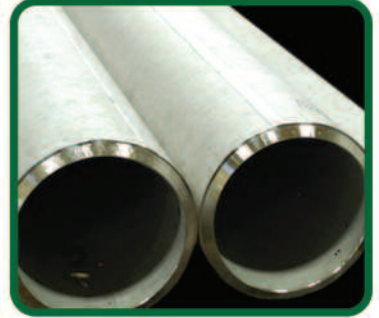
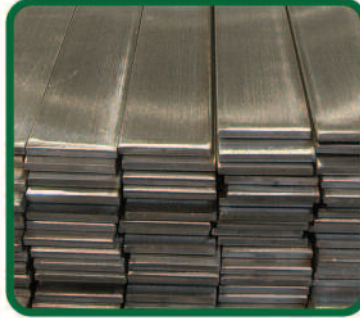
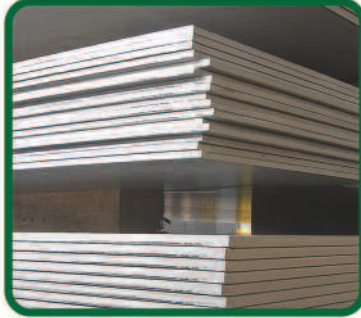
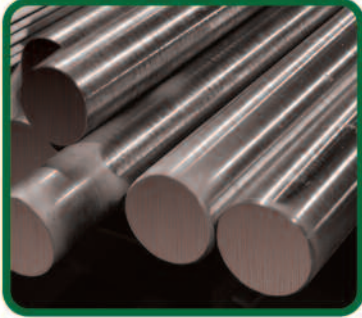




ALLOY 302 SPECIFICATIONS: UNS S30200



ALLOY 302 (UNS S30200)

Penn Stainless inventory now includes Alloy 302 (UNS S30200) in sheet, sheet coil, plate, round bar, processed flat bar and tubular products.

GENERAL PROPERTIES

Stainless steel grades 302, 304, 304L, and 305 are all variations of the 18% chromium / 8% nickel austenitic alloy, which is the most familiar and the most frequently used in the stainless steel family. Alloy 302 is a slightly higher carbon version of 304, often found in strip and wire forms. It is a tough, ductile grade that demonstrates comparable corrosion resistance, is non-magnetic, and is not hardenable by heat treatment. Alloy 302 is usually used in its annealed condition and has a high ease of fabrication and formability.

APPLICATIONS

Although many applications have shifted to 304 and 304L due to advances in melting technology, availability, and cost, Alloy 302 is still used in a variety of industries. Some examples include:

- Stamping
- Wire forming
- Pressure containing applications
- Formed into all types of washers, springs, screens, and cables
- Spinning
- Food and beverage industry
- Sanitary or cryogenic applications

Some examples of products that are partially or completely constructed of 302 include:

- Blenders
- Dish racks
- Refrigerators
- Counters
- Dishwashers
- Washing machines

STANDARDS ALLOY 302

ASTM/ASMEUNS S30200
 EURONORMFeMi35Cr20Cu4Mo2
 DIN2.4660

ALLOY 302 (UNS S30200) CAN BE PROCESSED BY PENN STAINLESS UTILIZING THE FOLLOWING METHODS:

- SHEAR CUTTING
- PLASMA CUTTING
- HQ PLASMA CUTTING
- DYNAMIC WATER JET CUTTING
- LASER CUTTING
- SAW CUTTING
- GAUER PROCESSING
- MACHINE CUTTING



PRODUCT OFFERING:

- SHEET
- PLATE
- PERFORATED
- FLATE & EXPANDED
- ROUND BAR
- SQUARE BAR
- HEX BAR
- ROLLED FLAT BAR
- S/E PROCESSED BAR

MACHINABILITY

- Slow speeds and high feeds will overcome this alloy's tendency to work-harden
- Due to gummy chips, it is recommended that chip breakers are used on all tooling

WELDABILITY

- Can best be welded by resistance or shielded fusion methods
- Post weld annealing dissolves the chromium carbide and is recommended for maximum resistance to intergranular attack

HOT WORKING

- Uniform heating to 2100°F will allow this alloy to be forged, upset and headed successfully
- Do not work below 1700°F

COLD WORKING

- Will dramatically increase the hardness of this material; however, it is quite ductile and may readily be drawn, spun and upset
- Causes alloy 302 to become magnetic
- Post-fabrication annealing is necessary to retain maximum corrosion resistance and a non-magnetic condition

CHEMICAL PROPERTIES

Type	C	Cr	Fe	Mn	P	Si	S
302	0.15 max	min: 17.0 max: 19.0	balance	2 max	0.045 max	1 max	0.03 max

MECHANICAL PROPERTIES

Grade	Tensile Strength ksi (MPa) min	Yield Strength 0.2% offset ksi (MPa) min	Elongation (% in 50mm) min	Hardness (Brinell) MAX	Hardness (Rockwell B) MAX
302	75 (515)	30 (205)	40	201	92

PHYSICAL PROPERTIES

	Typical Values	
Density	lb _m /in ³	g/cm ³
at 68°F (20°C)	0.289	8.0
Coefficient of Thermal Expansion	(in/in)•°F	μm/m °C
at 70 - 212°F (20 - 100°C)	9.8 x 10 ⁻⁶	17.6
Melting Point	°C	°F
	1420 °C	2590 °F
Specific Heat	Btu/lb _m •°F	
at 32 - 212°F (0 - 100°C)	0.12	
Modulus of Elasticity (annealed)2	ksi	kN/mm ²
in tension (E)	27195	187.5