

Material Data Sheet

TENSILE, AF	85 ksi max	YIELD, CW1	65 ksi min
TENSILE, CW	80 ksi min	ALLOYS	304 group and 316
TENSILE, CW1	102 ksi min	FINISH	Passivated

Midpoints of the specification ranges, for orientation only. Limits are in the table.

Element	304	316	—
Carbon, max	0.08	0.08	
Manganese, max	2.00	2.00	
Phosphorus, max	0.045	0.045	
Sulfur, max	0.030	0.030	
Silicon, max	1.00	1.00	
Chromium	18.0–20.0	16.0–18.0	
Nickel	8.0–10.5	10.0–14.0	
Molybdenum	—	2.00–3.0	

DENSITY	0.289 lb/in ³ (8.00 g/cm ³)
MODULUS OF ELASTICITY	28.0 × 10 ⁶ psi (193 GPa)
THERMAL EXPANSION (68–212 °F)	9.6 μin/in·°F
MAGNETIC	No in the annealed condition; slightly magnetic after cold work

AF: annealed after manufacture. CW and CW1: cold worked from annealed stock. Not hardenable by heat treatment; passivated after machining.

Condition	Tensile strength, full size (ksi)	Yield strength, machined specimen (ksi)	Elongation, min (%)	Core hardness	—
AF (annealed)	85 max	55 max	40	95 HRB max	
CW (cold worked)	80 min	40 min	25	50 HRA min	
CW1 (cold worked)	102 min	65 min	20	59 HRA min	

ASTM F879	Stainless steel socket button and flat countersunk head cap screws
ASME B18.3	Socket screw dimensions
ASTM F835	Alloy steel equivalent
ASTM A967	Passivation

- Hex and heavy hex bolts and cap screws
- Studs and threaded rod
- Nuts and washers to match
- Machined specials to drawing

- Flush and low-profile fastening in food and marine equipment
- Architectural and enclosure hardware
- Guards and covers in washdown areas