

SS 316 / 316L Stainless Steel – Technical Data Sheet

SS 316 / 316L Stainless Steel are premium austenitic stainless steels known for their excellent corrosion resistance, particularly in chloride environments. These grades are widely used in chemical processing, marine, pharmaceutical, food processing, and medical applications where superior performance is required.

What is SS 316 Stainless Steel?

SS 316 Stainless Steel is an austenitic chromium-nickel stainless steel containing molybdenum. The addition of molybdenum significantly increases its corrosion resistance compared to 304 grades, especially against chlorides and acids.

What is SS 316L Stainless Steel?

SS 316L is the low-carbon version of SS 316. The lower carbon content (maximum 0.03%) minimizes carbide precipitation during welding, making it ideal for welded structures while maintaining excellent corrosion resistance.

Key Features

- Excellent corrosion resistance, especially in chloride environments
- Superior resistance to pitting and crevice corrosion
- Good mechanical strength and ductility
- Excellent weldability (especially 316L)
- High resistance to acids and chemicals
- Outstanding performance in marine and harsh environments
- Good formability and fabrication properties
- Long service life with low maintenance

Technical Data Sheet – SS 316 Stainless Steel

Property	Value
UNS Designation	S31600
Density	8.0 g/cm ³
Tensile Strength	515 MPa (Min)
Yield Strength	205 MPa (Min)
Elongation	40% (Min)
Hardness	217 HB (Max)
Melting Range	1390°C – 1440°C
Common Standards	ASTM A240, ASTM A276, ASTM A312, ASTM A182

Technical Data Sheet – SS 316L Stainless Steel

Property	Value
UNS Designation	S31603
Density	8.0 g/cm ³
Tensile Strength	485 MPa (Min)
Yield Strength	170 MPa (Min)
Elongation	40% (Min)
Hardness	217 HB (Max)
Melting Range	1390°C – 1440°C
Common Standards	ASTM A240, ASTM A276, ASTM A312, ASTM A182

Typical Applications

Chemical processing equipment, pharmaceutical manufacturing, food and beverage processing, marine environments, medical devices, heat exchangers, pressure vessels, pulp and paper industry, textile equipment, and architectural applications in coastal areas.

Available Product Forms

Sheets, plates, coils, pipes, tubes, round bars, flat bars, fittings, flanges, fasteners, forgings, and custom components.

Why Choose SS 316 / 316L Stainless Steel?

These grades provide superior corrosion resistance compared to 304 series, especially in chloride-rich environments. SS 316L is particularly preferred for welded fabrications due to its low carbon content, ensuring long-term durability and reliability.

Conclusion

SS 316 and 316L Stainless Steel are trusted materials for demanding applications requiring excellent corrosion resistance and mechanical performance. Their proven track record makes them a preferred choice across multiple industries.