# STAINLESS STEEL

## 316 - 1.4401 / 316L - 1.4404

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Stainless Steel 316 is one of the most widely used and versatile stainless steels, prized for its corrosion resistance and suitability for a broad range of applications. The 316L low carbon content helps reduce the susceptibility to sensitisation during welding, making 316L suitable for applications where post-welding annealing is not practical.

## KEY FEATURES

- Excellent corrosion resistance
- Strength and mechanical properties
- Heat resistance
- General weldability

## CHEMICAL PROPERTIES

| | Chromium (Cr) | Nickel (Ni) | Manganese (Mn) | Molybdenum (Mo) | Silicone (Si) | Nitrogen (N) | Carbon (C) | Phosphorus (P) | Sulphur (S) |
|---|---|---|---|---|---|---|---|---|---|
| 316 | 16-18% | 10-12% | 2% | 2-3% | 0.75% | 0.1% | 0.08% | 0.045% | 0.03% |
| 316L | 16-18% | 10-12% | 2% | 2% | 0.75% | 0.1% | 0.03% | 0.045% | 0.03% |

## MECHANICAL PROPERTIES

| | 316 | 316L |
|---|---|---|
| Tensile strength (N/mm²) | 500-700 | 500-700 |
| Yield strength (N/mm²) | 170-220 | 170-220 |
| Elongation (% in 4D) | 40 | 40 |
| Hardness - Rockwell (HRB) max | 92 | 92 |
| Hardness - Brinell (HB) max | 217 | 217 |

## PHYSICAL PROPERTIES

| | | |
|---|---|---|
| Density (kg/m³) | | 8000 |
| Modulus of elasticity (Gpa) | | 193 |
| Mean coefficient of thermal expansion | 0-100ºC (µm/m/ºC) | 15.9 |
| | 0-350ºC (µm/m/ºC) | 16.2 |
| | 0-538ºC (µm/m/ºC) | 17.5 |
| Thermal conductivity | at 100ºC (W/m.K) | 16.3 |
| | at 500ºC (W/m.K) | 21.5 |
| Specific Heat 0-100ºC (J/kg.K) | | 500 |
| Electrical resistivity (nΩ.m) | | 740 |
| Melting point (ºC) | | 1450 |

## MARKET SECTORS

**Food & Beverage Industry**
Conveyors, mixers, brewing and distillation equipment

**Chemical Processing**
Reactors, storage tanks, piping systems, heat exchangers

**Marine Equipment**
Boat fittings, hardware, coastal structures

**Medical Devices**
Surgical instruments, implants, dental instruments

**Pharmaceutical Industry**
Vessels, reactors, piping systems, processing equipment

**Aerospace Industry**
Aircraft structural components, engine parts, hardware

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