

Nanowear™ is Woodworth's proprietary thermal-chemical diffusion process for stainless steels, in this article, austenitic 316 stainless steel. The process is base material dependent, low temperature and alters the material on a molecular level, creating an 'Upper Austenite' layer (10–50 microns) with an empirical hardness of 1100–1600 HK. This enhances durability and wear resistance without sacrificing corrosion resistance.

Common Grades

- 201 & 202:** High toughness, used in kitchenware and architecture.
- 303:** Machinable but slightly less corrosion-resistant. Ideal for fasteners and high-speed machining.
- 304:** Most widely used; excellent corrosion resistance and formability.
- 308:** Good weldability; common in construction and chemical processing.
- 310:** High-temperature oxidation resistance (up to 1150°C). Used in furnaces and power generation.
- 316:** Superior pitting resistance due to molybdenum; used in marine, chemical, and medical applications.

Mechanical properties

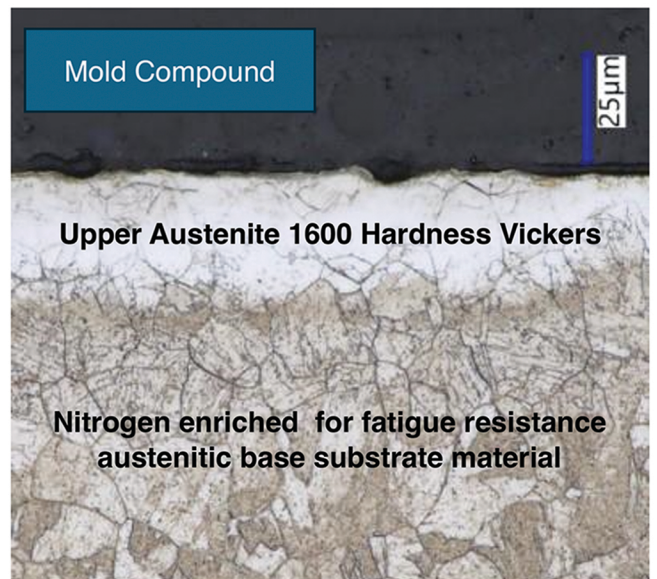
Gall Testing per ASTM G98 Comparative Analysis

Condition	Load Force (lbs.)	Contact Stress (psi)	Results
316 Green Cold Worked	2,000	10,200	Galled Surface
316 Ultrawear Treated	10,000	50,900	Burnished only



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316 Austenitic Stainless Steel – 500 X