

ASTM A312 TP316Ti Pipe Specification

A312 TP316TI pipe Specification: ASTM A312 specification covers seamless pipe and welded pipe for austenitic stainless steel. These high performance austenitic stainless steels have a fully austenitic microstructure in the quench annealed condition.

We supply high quality ASTM A312 TP316TI Seamless Pipe and ASTM A312 TP316TI Stainless Steel Welded Pipe that is sized, cut, and finished according to your exact specifications,

Standard Overview

- **Standard:** ASTM A312 / ASME SA312
- **Type:** Seamless and welded stainless steel pipe
- **Grade:** TP316Ti (Titanium stabilized austenitic stainless steel)
- **Usage:** High-temperature and corrosion-resistant piping applications in chemical, petrochemical, power plants, and food processing industries.
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ASTM A312 TP316Ti Chemical Composition (Typical for TP316Ti)

Element	Max / Range (%)
Carbon (C)	0.08 max
Manganese (Mn)	2.00 max
Phosphorus (P)	0.040 max
Sulfur (S)	0.030 max
Silicon (Si)	0.75 max
Chromium (Cr)	16.00 - 18.00
Nickel (Ni)	10.00 - 14.00
Molybdenum (Mo)	2.00 - 3.00
Titanium (Ti)	Min 0.5 (Stabilizer)
Nitrogen (N)	0.10 max

ASTM A312 TP316Ti Mechanical Properties

Property	Minimum Value
Tensile Strength (MPa)	515 (75,000 psi)
Yield Strength (MPa)	205 (30,000 psi)
Elongation (%)	30 (in 50 mm)
Hardness	Max 95 HRB

ASTM A312 TP316Ti Pipe Dimensions & Types

- **Pipe Types:** Seamless, ERW (Electric Resistance Welded), and Welded
- **Sizes:** NPS 1/8" to NPS 48" (nominal pipe size)
- **Schedules:** Standard pipe wall thickness per ASTM A312 (e. g., Sch 5S, Sch 10S, Sch 40S, Sch 80S)
- **Length:** Random or cut-to-length as per order

ASTM A312 TP316Ti Applications

- High-temperature environments where stabilization against carbide precipitation is required
- Chemical processing plants with corrosive media
- Heat exchangers, boiler tubing
- Food and pharmaceutical industries requiring corrosion resistance and non-reactive surfaces
- **Referenced Documents:**
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 - ASTM Referenced Standards
 - A262 Practices for Detecting Susceptibility to Intergranular Attack in Austenitic Stainless Steels
 - A370 Test Methods and Definitions for Mechanical Testing of Steel Products
 - A941 Terminology Relating to Steel, Stainless Steel, Related Alloys, and Ferroalloys
 - A999 A999M Specification for General Requirements for Alloy and Stainless-Steel Pipe
 - A1016/A1016M Specification for General Requirements for Ferritic Alloy Steel, Austenitic Alloy Steel, and Stainless-Steel Tubes

- E112 Test Methods for Determining Average Grain Size
- E381 Method of Macroetch Testing Steel Bars, Billets, Blooms, and Forgings
- E527 Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

