Specification of F347/347H specification
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ASTM A182 F347: Stainless steel alloy stabilized with columbium (niobium) to enhance resistance to intergranular corrosion.

ASTM A182 F347H: High-carbon version of F347 with improved creep resistance and higher strength at elevated temperatures.

# 347/347H

**(UNS S34700)**

### *AVAILABILITY*

Seamless Pipe 1/2″- 12″
Weld Pipe 8″- 24″
Butt-Weld Flanges 1/2″- 24″
Bar 1″- 12″
Plate 1/8" - 3"
Flanges 1/2" - 24"
Tubing 1/4" - 1"
Pressure Fitting 1/2" - 2"

### *SPECIFICATIONS*

ASTM A312, A403, A182, A479, A276
ASME SA312, SA403, SA182, SA479, SA276

### *CHEMICAL COMPOSITION %*

| C | Co | Cr | Mn | Ni | P | S | Si | Ta |
|---|---|---|---|---|---|---|---|---|
| Max | | | Max | | Max | Max | Max | |
| 0.08 | Trace* | 17.0-20.0 | 2.0 | 9.0-13.0 | 0.04 | 0.30 | 0.75 | Trace* |

The columbium plus tantalum content shall not be less than 10 times the carbon content and not more than 1.0%
Note: 347H requires the columbium plus tantalum content to be not < 8 times the carbon content and not > 1.0%

## *DESCRIPTION*

These types of stainless are austenitic chromium steels containing columbium. They are recommended for parts fabricated by welding which cannot be subsequently annealed. These types also are used for parts which are intermittently heated and cooled to temperatures between 800˚ and 1600˚ F. The addition of columbium produces a stabilized type of stainless that eliminates carbide precipitation, and consequently, intergranular corrosion.

## *DESIGN FEATURES*

- Superior general corrosion resistance over Type 321 due to stabilization with columbium.
- Reduced tendencies to form continuous networks of chromium carbides at the grain boundaries.
- Better high temperature properties than 304 or 304L. Generally used for parts which are intermittently heated up to 1500˚ F. For continuous service the maximum temperature is 1650˚ F.
- Type 347H has high carbon (.04-.10) for better high temperature creep properties.
- Improved intergranular corrosion resistance.

## *TYPICAL APPLICATIONS*

High temperature chemical process heat exchanger tubes
Refineries
High temperature steam service

## *TENSILE REQUIREMENTS*

| Tensile Strength (KSI) | Yield Strength (KSI) |
|---|---|
| 75 | 30 |