

# ASTM A193 Grade B6 — Specification

ASTM A193 Grade B6 covers martensitic stainless steel fasteners (primarily stud bolts, threaded rods, hex bolts, etc.) for high-temperature or high-pressure service. It is commonly used in pressure vessels, flanged piping systems, and valve assemblies.

We are a professional manufacturer of ASTM A193 B6 Stud bolt, SS 410 Stud bolt.

## 1. Material Composition

ASTM A193 B6 is made from AISI Type 410 stainless steel — a martensitic stainless steel with good mechanical strength and moderate corrosion resistance.

Element	Content (%)
Carbon (C)	$\leq 0.15$
Manganese (Mn)	$\leq 1.00$
Phosphorus (P)	$\leq 0.040$
Sulfur (S)	$\leq 0.030$
Silicon (Si)	$\leq 1.00$
Chromium (Cr)	11.5 - 13.5
Nickel (Ni)	$\leq 0.75$

## 2. Mechanical Properties (Minimum Requirements)

Property	Value
Tensile Strength	$\geq 515$ MPa (75 ksi)
Yield Strength (0.2%)	$\geq 205$ MPa (30 ksi)
Elongation in 4D	$\geq 15\%$
Reduction of Area	$\geq 35\%$
Hardness (Brinell)	$\leq 241$ HB
Hardness (Rockwell C)	$\leq 22$ HRC

Note: B6 fasteners are not typically heat-treated after machining. They are supplied in the “as-machined” or strain-hardened condition from Type 410 bar.

### 3. Applications

- Steam lines and high-temperature services
- Petrochemical plants
- Power generation (turbines, boilers)
- Valve bodies, flanges, and fittings

### 4. Size Range

Size	Thread Type	Length
¼" - 4"	UNC / UNF / Metric	Custom as required

### 5. Applicable Standards

- ASTM A193 / A193M - Specification for Alloy-Steel and Stainless Steel Bolting
- ASME B18.2.1 - Dimensional standard for hex bolts
- ASME B1.1 - Unified Inch Screw Threads
- EN 10204 3.1 - Mill Test Certificate (optional)

### 6. Marking

Fasteners are marked with:

- Grade marking: "B6"
- Manufacturer's ID

