BS S144

Smiths Advanced Metals

High Strength Aerospace Grade

Precipitation hardening stainless steel bar.

BS S144 is a precipitation hardening stainless steel bar and a British Standard aerospace grade, offering high strength with moderate to good corrosion resistance.

It has the same chemical composition as BS S143 and BS S145, but a different heat treatment. S144 gives higher tensile strength than S143, and S145 is heat treated to higher strength again. S143 gives 930–1080 MPa tensile strength and S145 gives 1270–1470 MPa, and we stock all three.

The alloy is widely used for mechanical components in aerospace and defence, and in other high technology applications.

We stock BS S144 stainless steel as round, square, flat and hexagon bar.



Grades / Specifications

- BS S144
- BS S100
- W.Nr 1.4594
- X5CrNiMoCuNb14-5
- FV520B

Benefits

- High strength
- Moderate to good corrosion resistance
- Same chemistry as S143 & S145

Chemical Composition (weight %)

	C	Mn	Si	S	P	Cr	Ni	Mo	Cu	Nb
min.						13.20	5.00	1.20	1.20	0.10
max.	0.07	1.00	0.60	0.025	0.035	14.70	5.80	2.00	2.00	0.40

Mechanical Properties

Condition	Tensile Strength (MPa)	0.2% Proof Stress (MPa)	Elongation (%)	Hardness (HB)
S144D (primary hardened)	–	–	–	341 max
S144H (precipitation hardened)	1130–1330	1030 min	12 min	352–401

Key Applications

- Aerospace components
- Defence components
- Industrial bearings
- Precision parts
- High technology applications

Heat Treatment

Solution treat at 1000–1050 °C and air cool. Primary harden (S144D) at 750–850 °C for 2 hours, then precipitation harden (S144H) at 440–460 °C for 2 hours, air cooling after each stage.

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bsi ISO 9001 Quality Management Systems CERTIFIED
AS/EN 9100 Aviation Space and Defence CERTIFIED
EN 9120 Aviation Space and Defence CERTIFIED
UKAS TESTING 1930

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