TECHNICAL DATASHEET

13-8PH Stainless

Smiths Advanced Metals

Rev: SAM/datasheets/stainless-steel-bar/13-8ph/feb-2022

Very High Strength Stainless Steel Bar

Precipitation hardening stainless steel

13-8PH is a precipitation hardening steel alloy that provides very high strength and toughness combined with good corrosion resistance.

Even in larger sections, the alloy consistently offers superior ductility and transverse toughness. The chemical composition of the alloy combined with a controlled melting practice ensures that the material's microstructure is typically ferrite-free. In production, the alloy is double melted in a vacuum induction furnace (VIM) followed by consumable electrode vacuum melt (CEVM / VAR). A single precipitation hardening heat treatment creates the performance characteristics of the alloy. 13-8PH offers suitability in applications where good ductility, corrosion resistance, stress-corrosion resistance, and high strength are predetermined requirements. Typical examples include aerospace structural parts, nuclear reactor components and high-performance shafts.

We stock 13-8PH stainless steel bars in a wide range of sizes, shapes and tempers (including annealed, H950, H1025, H1050, H1100 and H1150 tempers).

AMS5934

LAT 1-9048

Grades / Specifications

- 1.4534
- UNS S13800
- AMS5629



Benefits

- **Excellent strength**
- Good fracture toughness
- Good resistance to corrosion
- Superior ductility and transverse toughness

C Mn P Si Cr Ni Mo Al N min.	* Chemical Composition (weight %)										
min. 12.25 7.50 2.00 0.90		С	Mn	Р	S	Si	Cr	Ni	Мо	Al	Ν
	min.						12.25	7.50	2.00	0.90	
max. 0.05 0.10 0.010 0.008 0.10 13.25 8.50 2.50 1.35 0.01	max.	0.05	0.10	0.010	0.008	0.10	13.25	8.50	2.50	1.35	0.01

* As per AMS5629

" Mechanical Properties (minimum)												
Condition	Tensile Strength (MPa)	0.2% Proof Stress (MPa)	Elongation (%)	Reduction of Area (%)								
H950	1,517	1,413	10	45								
H1000	1,413	1,310	10	50								
H1025	1,276	1,207	11	50								
H1050	1,207	1,138	12	50								
H1100	1,034	931	14	50								
H1150	931	621	14	50								

* Properties as per AMS 5629, longitudinal

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