TECHNICAL DATASHEET

S80 Smiths Advanced Metals

Rev: SAM/datasheets/stainless-steel-bar/s80/feb-2022

Martensitic Stainless Steel Bar

With chromium and nickel additions.

S80 utilises conventional heat-treating methods to create an alloy with high mechanical properties and good corrosion resistance.

Typically, the alloy finds use in applications where improved mechanical properties are required compared to 410 stainless steel. Compared to other chromiumnickel grades, S80 offers improved machinability. Weldability is good in most conditions, although larger sections will need pre-heating. Corrosion resistance is also superior in comparison with 410 & 416 stainless steel, performing well in mild acids and alkalis, neutral and basic salts and food acids. S80 is excellent for general engineering applications, aircraft structural parts, valves, and fasteners.

We stock S80 stainless steel bars in various sizes and conditions (including hardened and tempered conditions).

Grades / Specifications

1.4044	BS S100
431S29	BS 580

- 431S29
- AISI 431
- UNS S43100

280D S80D 7BDL 1092 0085

Benefits

- Good resistance to corrosion
- Good mechanical properties
- Non-magnetic
- Good weldability

* Chemical Composition (weight %)															
	С	Si	Mn	Р	S	Cr	Ni	Мо	Co	Cu	Nb	Sn	Ti	V	W
min.	0.12					15.00	2.00								
max.	0.20	1.00	1.00	0.030	0.025	18.00	3.00	0.30	0.05	0.30	0.05	0.02	0.05	0.20	0.05

* As per BS 7S80, S80D

* Mechanical Properties

Tensile Strength	880 - 1080 MPa					
0.2% Proof Stress	690 MPa min					
Elongation on 5.65√S⁰	12% min					
Hardness	255 / 321 HBW					
Izod Impact (ft.lbf)	≤ 63mm 25					
	> 63mm 15					

Metallurgical Support

We offer our customers extensive metallurgical support courtesy of our UKAS Accredited Testing Laboratory.

This unrivalled service in the stockholding sector adds considerable value to our business. It includes a range of in-house testing services, including chemical analysis, tensile testing and Charpy impact testing.



All information in our data sheet is based on approximate testing and is stated to the best of our knowledge and belief. It is presented apart from contractual obligations and does not constitute any guarantee of properties or of processing or application possibilities in individual cases. Our warranties and liabilities are stated exclusively in our terms of trading.

© Smiths Advanced Metals 2023



Page: 1 of 1