

Broder Aerospace

AMS5628

COMMON NAMES:

431 Stainless

UNS S43100

FORM & USE:

AMS5628 is a heat treatable, corrosion resistant steel. We hold this grade in round bar form. The material is typically used for parts requiring corrosion resistance and high strength at room temperature.

SIZES STOCKED:

6.35 mm diameter – 304.8 mm diameter

GENERAL:

Material is aircraft-quality conforming to AMS2303.

Tolerances are in accordance with AMS2241.

CONDITION:

Annealed

CHEMISTRY:

C	Mn	Si	P	S	Cr	Ni	Mo	Cu	N
0.12	0.30	0.20			15.50	2.00			
-	-	-	<0.040	<0.030	-	-	<0.25	<0.50	<0.010
0.17	0.80	0.60			16.50	3.00			

FINISH:

Up to 12.7 mm diameter – cold drawn or ground

12.7 mm diameter – 38 mm diameter – ground or smooth turned

Above 38 mm diameter – ground or turned

HEAT TREATMENT:

Base material annealed.

For capability of material as tempered: specimen is soaked at 1010°C to 1038°C for minimum 30 minutes, quenched in agitated oil at 38°C to 66°C, cooled to room temperature in water, then soaked in a liquid at -62°C to -84°C for not less than 2 hours, then temper in air at 274°C to 302°C for 2 hours and retemper in air at 274°C to 302°C for 2 hours.

MATERIAL PROPERTIES:

Tensile Properties:

	Minimum Tensile Strength Ksi	Minimum Yield strength at 0.2% Offset Ksi	Minimum Elongation in 2" or 4d %	Minimum Reduction of Area %	Hardness
Annealed	-	-	-	-	<302 HB, determined at 1/4T
As Tempered:	200	150	10	40	-

A "-" indicates no requirement for the property.

Microstructure: capability specimens soaked at 1010°C to 1038°C for minimum 30 minutes, quenched in agitated oil at 38°C to 66°C, cooled to room temperature in water, then temper in air at 621°C to 647°C for at least 3 hours.

The test is carried out on a longitudinal specimen (minimum length & width of 6.35 mm), polished, etched and examined at 250x magnification. Acceptance criteria:

1. Banded ferrite – no banded free ferrite in excess of that shown in figure 3 of AMS5628.
2. Blocky ferrite – to contain no more than 4% blocky ferrite.
3. Banded Austenite - no banded retained austenite in excess of that shown in figure 5 of AMS5628.
4. Blocky Austenite – allowed. Not a cause for rejection.
5. Average Grain size – ASTM No 3 or finer determined by comparison with a heat treated, polished and etched specimen with the chart in ASTM E112.

Full material traceability, with anti-counterfeit measures, is maintained at all times, and full certification is provided, including producer's name and country where the material was melted.

For a quotation please telephone ++44 (0)114 232 9243, email sales@broder-aerospace.com or use the quotation page on our website: <http://www.broder-aerospace.com>