DATASHEET

AMS 5659 (UNS S15500)

PRECIPITATION HARDENING STAINLESS STEEL BAR

PRODUCT DESCRIPTION

AMS 5659 (UNS S15500) is a martensitic precipitation hardening stainless steel which contains 4% copper. All the same advantages of AMS 5643 are present as well as single low temperature treatment. AMS 5659 offers very good uniformity of properties with excellent traverse notch toughness and ductility. When compared with AMS 5643, the alloy displays superior forgeability and mechanical properties in large sections. Produced by the consumable electrode, vacuum arc re-melted route enhances the alloy's toughness and ductility.

KEY FEATURES

- Good forming characteristics
- Excellent traverse notch toughness
- Excellent weldability
- Heat treatment increases resistance to stress corrosion cracking

APPLICATIONS

- Aircraft and missle construction, landing gear
- Valve parts, fastners, shafts and gears
- Nuclear reactor components

WELDABILITY

Excellent and readily weldable by all commercial welding processes

SPECIFICATIONS

AMS 5659 | ASTM SA-564 Type XM - 12
UNS S15500

MACHINABILITY

Forming characteristics are good

CHEMICAL COMPOSITION (weight %)

	C	Mn	P	S	Si	Cr	Ni	Mo	Cu
Min						14.00	3.50		2.50
Max	0.07	1.00	0.030	0.015	1.00	15.50	5.50	0.50	4.50

MECHANICAL PROPERTIES (typical)

Condition	Tensile Strength (MPa)	0.2% Proof Stress(MPa)	Elongation on 4D G.L. (%)	Hardness (HB)
H900	1,310	1,172	10	388 / 444
H925	1,172	1,069	10	375 / 429
H1025	1,069	1,000	12	331 / 401
H1075	1,000	862	13	311 / 375
H1100	965	793	14	302 / 363
H1150	931	724	16	277 / 352

Thames Stockholders
Unit 5W. Woodall Road, Redburn Industrial Estate
Ponders End, Enfield, Middlesex EN3 4LQ

t +44 (0)20 8805 3282
f +44 (0)20 8804 8164
w www.thamesstock.com
e sales@thamesstock.com

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