4140

Smiths Advanced Metals

Tough, Fatigue Resistant Bars

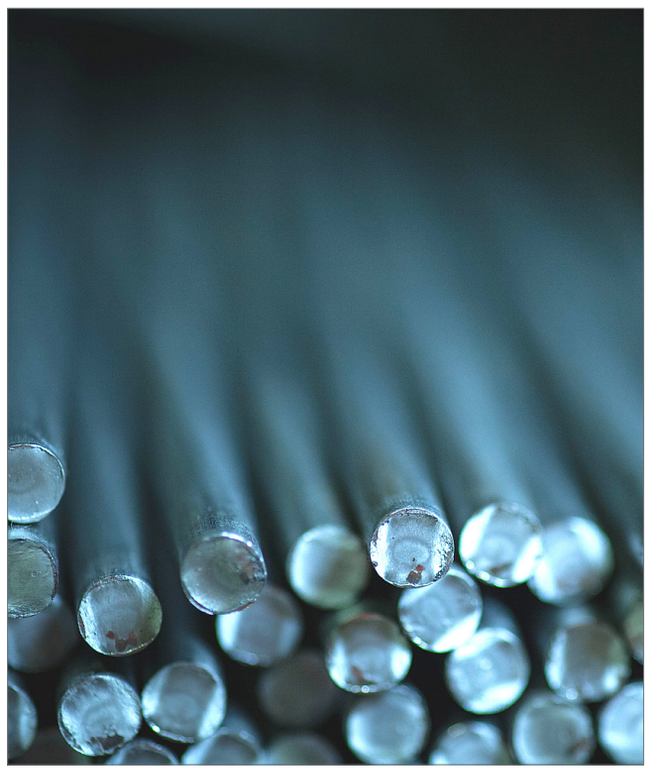
Chromium-Molybdenum Deep Hardening Steel.

4140 alloy finds use in components requiring high hardness, toughness, and fatigue resistance.

As a high-tensile steel product, the material finds use in applications for industries including aerospace, oil & gas and automotive. Nitriding of the alloy is possible, resulting in improved fatigue and wear-resistant characteristics.

Alloy 4140 provides high fatigue strength making the product suitable for critically stressed components at normal and elevated temperatures. Good overall strength and impact toughness are also performance benefits. Overall machinability of the alloy is good in the annealed condition. Uniform hardness and high strength are achieved due to the introduction of molybdenum, while chromium provides good hardness characteristics. Alloy 4140 also offers good ductility.

We stock 4140 steel bars in a wide range of sizes and conditions (including annealed, normalised, hardened and tempered conditions).



Grades / Specifications

- 1.7225
- 42CrMo4
- 709M40
- UNS G41400
- AMS6349
- AMS6529
- MIL-S-5626
- ASTM A108
- ASTM A29

Benefits

- Good impact toughness
- Good machinability
- Fair weldability
- Good ductility
- Good fatigue resistance

*Chemical Composition (weight %)

	C	Mn	Si	P	S	Cr	Mo	Ni	Cu
min.	0.38	0.75	0.15			0.80	0.15		
max.	0.43	1.00	0.35	0.025	0.025	1.10	0.25	0.25	0.35

* As per AMS 6349

* Mechanical Properties

Under 0.5" dia Tensile Strength	125 ksi max

* Properties as per AMS 6349

Hardness: Relates to normalised and cold finished bars 12.70mm and under. Bars over 12.70mm hot finished and normalised or normalised and cold finished hardness 229HB. Product ordered normalised and cold finished shall have hardness not higher than 241 HB.

Hardenability: Shall be J6/16inch (9.5mm) = 50HRC min. and J9/16inch (14mm) = 44HRC min. determined on the standard end-quench test specimen in accordance with ASTM A 255 except that the steel shall be normalised at 1700° F+/-10 (927° C+/-6) and the test specimen austenised at 1550° F+/-10 (843° C+/-6).

Stratton Business Park,
London Road, Biggleswade,
Bedfordshire SG18 8QB
Tel: +44 (0) 1767 604710