

AISI 4130

4130 - A prehardened steel 220HB

4130 is a premium alloy steel for medium and very large size mechanical components with good machinability and reliable repair welding. 4130 is delivered in prehardened conditions at 220 HB.

This grade is typically used for:

- > Fittings
- > Hydraulic tools
- > Support plates
- > Oil and gas exploration components

PROPERTIES

ACCORDING TO STANDARD

- > Astm A29 AISI : 4130
- > Din ≈ 1.7218 (25CrMo4)

CHEMICAL ANALYSIS

Analysis in %		C	Si	Mn	Ni	Cr	Mo	S	P
4130	Min	0.28	0.15	0.400	-	0.80	0.15	-	-
	Typ	0.31	0.25	0.525	<0.23	1.00	0.17	<0.050	<0.015
	Max	0.33	0.35	0.600	<0.28	1.10	0.25	<0.770	<0.035

MECHANICAL PROPERTIES

Typical values for plates air quenched and tempered (thickness 45 mm - 1.8").
Density 7.85 g/cm³

	Hardness	YS 0.2		UTS		Elongation	Reduction of area	Elastic modulus	
	HB	MPa	KSI	MPa	KSI	%	Z%	GPa	KSI
4130	220	560	81	460	67	12	59.6	190-210	27-30

PHYSICAL PROPERTIES

Thermal conductivity W m ⁻¹ K ⁻¹	Thermal expansion coefficient 10 ⁻⁶ °C ⁻¹ /10 ⁻⁶ °K ⁻¹		
20°C	20-100°C	20-200°C	20-300°C
68°F	68-212°F	68-392°F	68-572°F
42.7	11.1	12.1	12.7

METALLURGICAL PROPERTIES

4130 has an excellent hardenability resulting in good uniformity of hardness and microstructure.

Internal soundness:

All plates are ultrasonically tested according to NFA 04305 Class C.- ASTM A 578-S9 2mm flat bottom hole

Flatness:

3 mm/m

HEAT TREATMENT

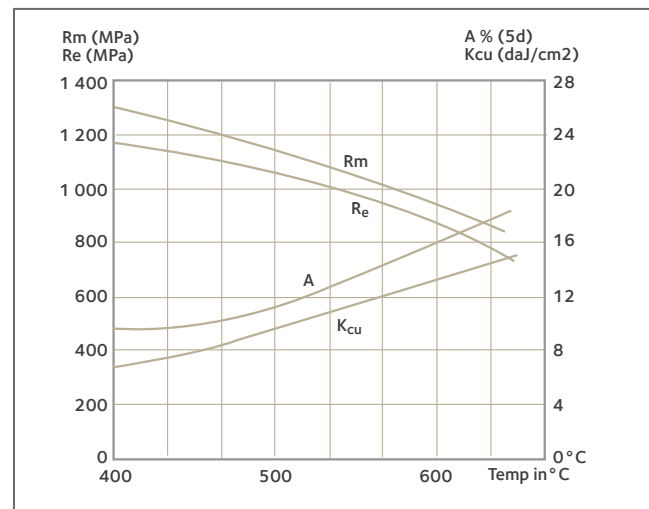
- > heating (about 400°C - 570°C) with a sufficient holding time (2 hours/25 mm)
- > Then slow air cooling

Avoid tempering at 250° C-375°C because this will affect a lot impact values

HARDENING

4130 can be locally hardened by heating up to 870°C-890°C and then oil quenching

Tempering curve 4130



POLISHING

4140 -1.7225 can be roughly polished in the quenched and tempered condition. After grinding, polishing will be made with aluminium oxide or diamond paste.

MICRO CLEANLINESS

Typical A (Sulfide) : 2,5 ; B (Aluminatess) : 1, 5 ; C (Silicates) : 1.5 ; D (Globular oxydes) :1,5

TYPICAL DELIVERY STAGES

Specification	Stage	Hardness in HB	Analysis	Decarb.	Grain	Magneto	Bending	Traction	Structure
Annealed	Annealed	253 max	y	y	y	y	y		
AMS 635P161/06	HT and T	200-250	y	y	y	y	y	y	
ASTM A829: M ed 2017	Normalized	180-260							
AMS 6350 M	Normalized	260 max	y	y	y	y	y		
AMS 6345	Normalized	260 max	y	y	y	y	y		y

DIMENSIONAL PROGRAM

Thickness	Width
20 - 120 mm (. 79" - 4.7")	1500 - 2500 mm (59 - 98.4")
120 - 600 mm (4.7" - 23.6")	1500- 2100 mm (49"-82.7")

YOUR CONTACTS

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