ALLOY STRUCTURAL STEEL — CHROMIUM-MOLYBDENUM

AISI 4140 42CrMo4 / 1.7225

Alloy structural steel — chromium-molybdenum

0.38–0.43 C	Ø1200 mm	28–32 HRC	EN 10204 3.1
Base chemistry	Max forged bar	Typical Q+T	Every lot

GRADE AND STANDARDS

Item	Detail
Designations	AISI 4140 / UNS G41400 / 42CrMo4 / 1.7225 / SCM440
Standards	ASTM A29, A322, A193 B7; EN 10083-3
Delivery condition	Annealed max 250 HB, or quenched and tempered to your window
Melt route	EAF + ladle refining + vacuum degassing; ESR on request
Typical use	Shafts, gears, connecting rods, A193 B7 bolts, mould bases, hydraulic rods
Certificate	EN 10204 3.1 with chemistry, hardenability and mechanical results

CHEMICAL COMPOSITION (% BY MASS)

C	Si	Mn	P	S	Cr	Mo
0.38–0.43	≤0.35	0.75–1.00	≤0.035	≤0.040	0.80–1.10	0.15–0.25

MECHANICAL PROPERTIES

Condition	Tensile MPa	0.2 % proof MPa	Elongation %	Hardness
Annealed	655	415	25.7	197 HB
Q+T, 28–32 HRC	950–1100	750–900	14–18	300 HB
Q+T, 35 HRC	1150–1250	950–1050	10–13	340 HB
A193 B7 minimum	860	725	16	≤35 HRC

SUPPLY RANGE

Form	Size range	Condition
Rolled round bar	Ø10–200 mm	As rolled / annealed / Q+T
Forged round bar	Ø80–1200 mm	Annealed / Q+T
Forged flat bar	Thickness 100–600 mm × width 300–2000 mm	Annealed
Rolled wire rod	Ø5.5–20 mm	As rolled / annealed

INSPECTION AND CERTIFICATION

- EN 10204 3.1 mill certificate - chemistry, mechanical properties and the heat number
- Ultrasonic inspection to SEP 1921 / ASTM A388 on request
- Hardness survey across the section on request
- Grain size to ASTM E112 on request
- ESR or remelt route where the application needs it

ORDERING INFORMATION

- Grade and standard
- Form and size - thickness x width x length, or diameter and cut length
- Quantity in pieces or kilograms
- Delivery condition and hardness window
- Certificate and inspection requirements

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EN 10204 3.1 mill certificate with every shipment
Chemistry · mechanical properties · test results · heat number

Hardness map and ultrasonic inspection on request.
Values are typical for the grade; the certificate of the actual heat governs.