

H10 Chromium hot-work steel has excellent resistance to softening at high temperatures. This particular grade is resistant to thermal fatigue cracking and can be cooled in water for servicing. Typical applications included hot punches, die castings dies, forging dies and extrusion tooling.

STANDARDS •

- » USA: AISI H10
- » Japan: JIS SKD7
- » UNS T20810

CHEMICAL COMPOSITION •

	C	Cr	Si	Mn	Mo	V	P	S
Min	0.35	3.00	0.80	0.20	2.00	0.20	--	--
Typical	0.40	3.30	1.00	0.45	2.50	0.35		
Max	0.46	3.75	1.25	0.70	3.00	0.50	0.035	0.035

APPLICATIONS •

- » Hot Punches
- » Die casting dies
- » Forging dies
- » Extrusion Tools

FORM SUPPLIED •

- » Flat
- » Square
- » Round

Available surface conditions : drawn, ground, hot rolled, cold rolled, peeled, turned.

HEAT TREATMENT •

- **Annealing:** Heat the steel to 750–800°C (1382–1472°F) for 6–8 hours, then cool it slowly in the furnace to 600°C (1112°F). Finally, cool the steel further in air.
- **Stress relieving:** Heat the steel to 600–650°C (1112–1202°F) after rough machining.
- **Hardening:** Heat the steel to 1000–1030°C (1832–1886°F) for 15–30 minutes

- **Quenching:** Cool the steel uniformly and at a sufficient rate to avoid distortion and quench cracking.

- **Tempering:** Temper the steel at 450–570°C (842–1058°F) for at least 2 hours for smaller pieces and 1 hour per 20 mm of thickness for larger pieces

Tool	Hardening	Tempering
single edge cutting tools	1220 °C	550-570°C
multi edge cutting tools	1180-1220 °C	550-570 °C
cold work tools	1050-1150 °C	550-570 °C

DELIVERY HARDNESS . _____

- » Typical soft annealed hardness is 205 HB
- » Cold drawn and cold rolled material is typically 10-40 HB harder

PROCESSING . _____

H10 can be worked as follows :

- » Machining(grinding,turning,milling)
- » Polishing
- » Hot forming
- » Electrical discharge machining
- » Welding(special procedure incl. pre-heating & filler materials of base material composition)

GRINDING . _____

During Grinding, local heating of the surface, which can alter the temper, must be avoided. Grinding wheel manufacturers can provide advise on the choice of grinding wheels.

SURFACE TREATMENT . _____

The Steel Grade is a perfect substrate material for PVD coating. If nitriding is requested, a small diffusion zone is recommended but avoid compound and oxidized layers.

SIZES AVAILABLE . _____



ROUND	Starting From	Upto
DIAMETER	8 mm	500 mm
LENGTH	2000 mm	6000 mm



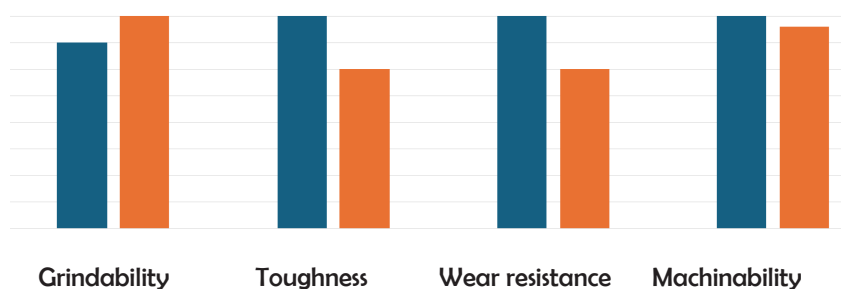
SQUARE BAR	Starting From	Upto
SIZE	8x8 mm	250x250 mm



FLAT	Starting From	Upto
THICKNESS	4 mm	205 mm
WIDTH	20 mm	400 mm

COMPARATIVE PROPERTIES . _____

■ H11
■ H10



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