Taylor
Special Steels Ltd

ASP2030

ASP 2030 HIGH SPEED STEEL

COMPOSITION %		C	Cr	Mo	W	V	Co
		1.28	4.20	5.0	6.40	3.10	8.50
STANDARDS		SS 2726					
CONDITION AS SUPPLIED		Soft annealed			max 300 HB		
		Drawn			max 320 HB		

ASP 2030 is a high-alloy high-speed steels that contains cobalt (Co). It is manufactured powder-metallurgically using the ASP process. The steel is atomized, compacted and processed to the dimensions required. The result is an extremely homogeneous steel with a unique combination of properties. ASP 2030's homogeneous structure enhances such properties as dimensional stability and shape stability during heat treatment, as well as improving grindability and toughness. Toughness is good even for large dimensions. ASP 2030's method of manufacture and composition mean that it can provide high hot hardness and good wear resistance.

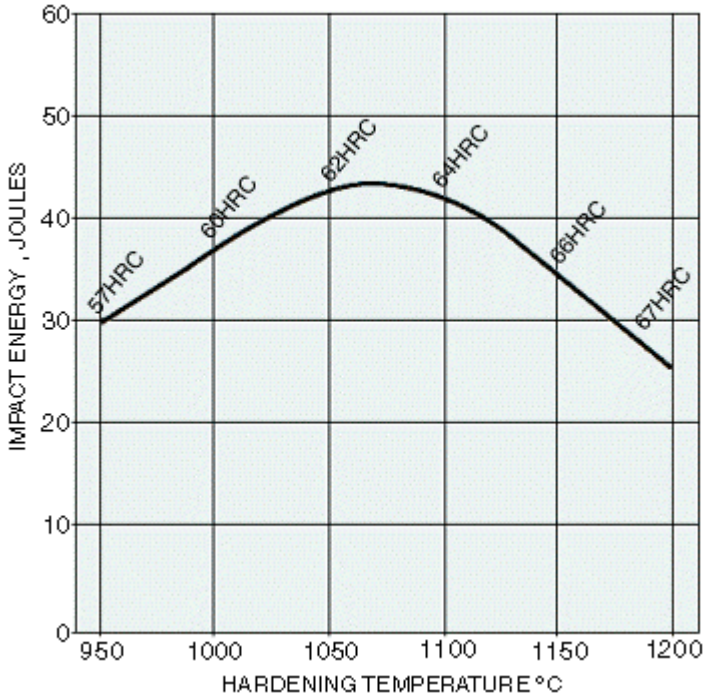
PHYSICAL PROPERTIES

			Temperature °C		
			20	400	600
DENSITY	Kg/m³	1	8050	7935	7880
MODULUS OF ELASTICITY	kN/mm²	2	240	214	192
COEFFICIENT OF THERMAL EXPANSION FROM	20°C, per °C	2	-	$11.8x10^{-6}$	$12.3x10^{-6}$
THERMAL CONDUCTIVITY	W/m °C	2	24	28	27
SPECIFIC HEAT	J/kg °C	2	420	510	600

1 = Soft annealed
2 = Hardened 1180°C and tempered 560°C, 3x1 hour

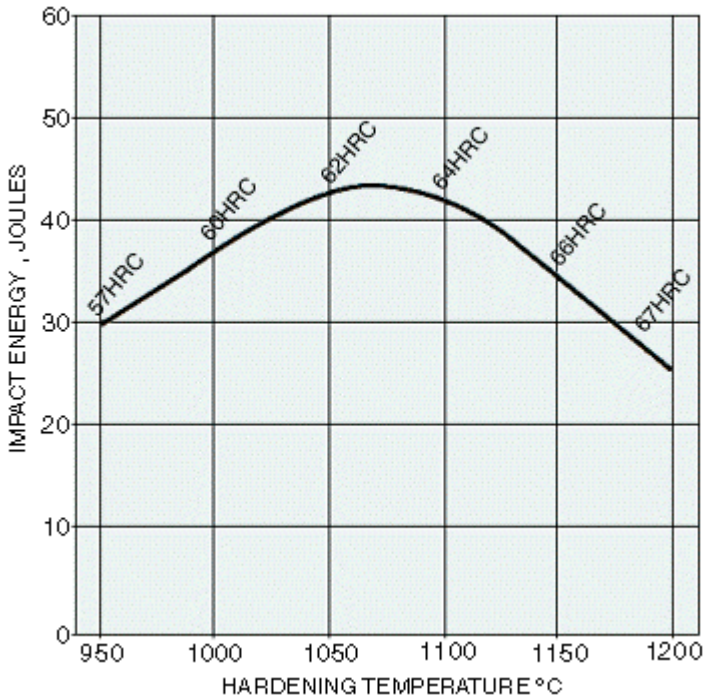
IMPACT STRENGTH

Original dimensions 9 x 12 mm
Tempering 3 x 1 hour at 560°C
Unnotched test piece 7 x 10 x 55 mm



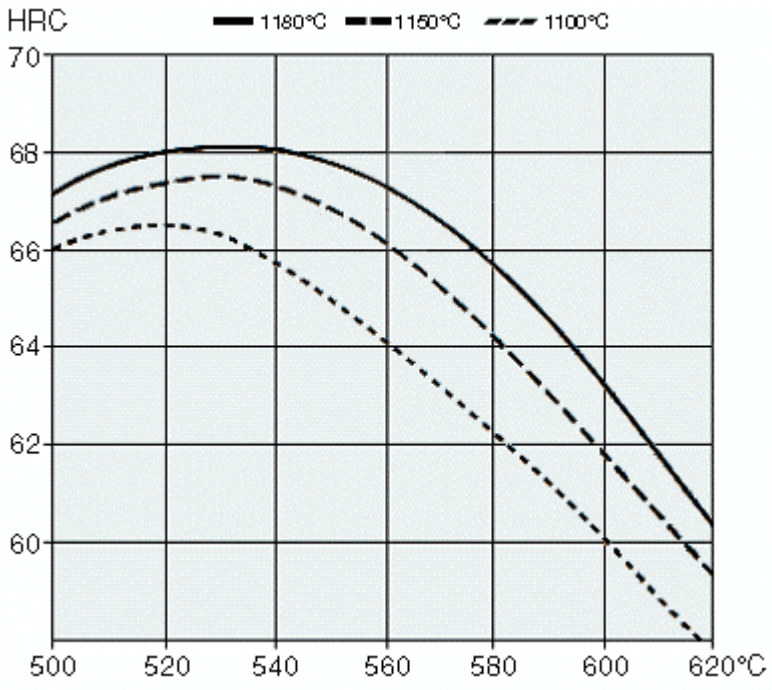
4 – POINT BENDING TEST

Original dimensions 6 mm Ø
Tempering 560°C, 3 x 1 hour
Dimensions of test piece 4.7 mm Ø



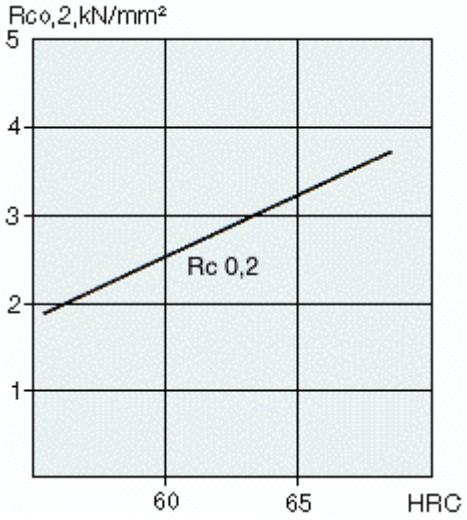
HEAT TREATMENT

- Soft-annealing 850°C – 900°C, slow cooling 10°C/h to 700°C, hardness max 300 HB.
- Stress-relieving annealing 600°C – 700°C, approx. 2 hours at temperature, slow cooling to 500°C.
- Hardening according to table.
  Cooling to 40°C / 50°C.
- Tempering at 560°C or higher 3 times for at least 1 hour each time. Cooling to room temperature (25°C) between temperings.

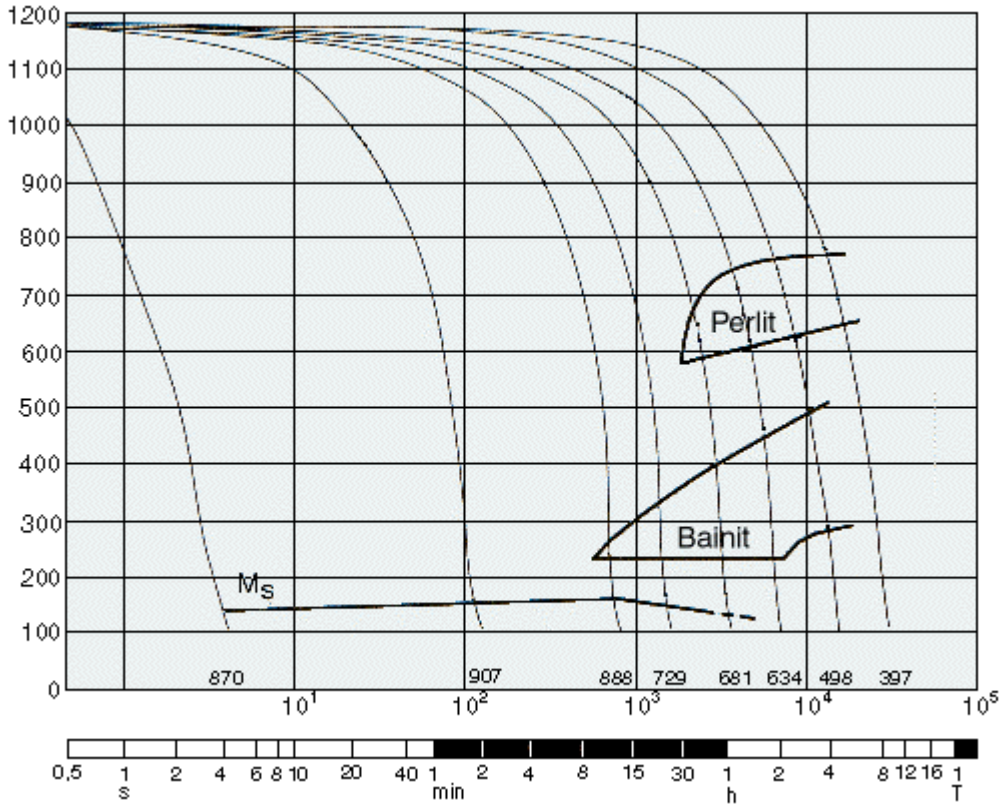


COMPRESSION YIELD STRESS

Test piece: hour glass with 10 mm Ø waist



CONTINUOUS COOLING TRANSFORMATION CURVE



GUIDELINES FOR HARDENING

* Tempering time 3x1 hour at 560 °C

Hardness HRC *	Hardening Temp °C
57	950
58	960
59	980
60	1000
61	1020
62	1050
63	1075
64	1100
65	1125
66	1150
67	1180

MANUFACTURING PROGRAMME

Form Supplied	Dimensional range mm
Coils	1 - 22 Ø
Round bars	1 - 385 Ø
Forged blanks	max 580 Ø
Flat bars	2,5 x 7-50 x 380
Square bars	4,5 - 345
Tool-bit sections	
Sections	

Products are available drawn, hot-worked, peeled, rough-machined, centerless-ground depending on dimensions and requirements.

SURFACE TREATMENT

ASP 2030 can be nitrided (a small diffusion zone of 2–20 µm, recommended) or steam - tempered if so desired. ASP 2030 is excellent as substrate material for PVD and CVD surface coating.