

## CHEMICAL COMPOSITION

C	Cr	Mo	W	V
1.30	3.75	10.50	6.25	2.0

SAFETY DATA SHEET SDS: B

## STANDARDS

- Europe: HS 6-10-2
- USA: AISI M62

## DELIVERY HARDNESS

- Typical soft annealed hardness is 290 HB

## DESCRIPTION

ASP<sup>®</sup>2062 is a cobalt-free high-speed steel with high red-hardness and good abrasion wear resistance.

## APPLICATIONS

- High temperature bearings
- Bearings & other components

## FORM SUPPLIED

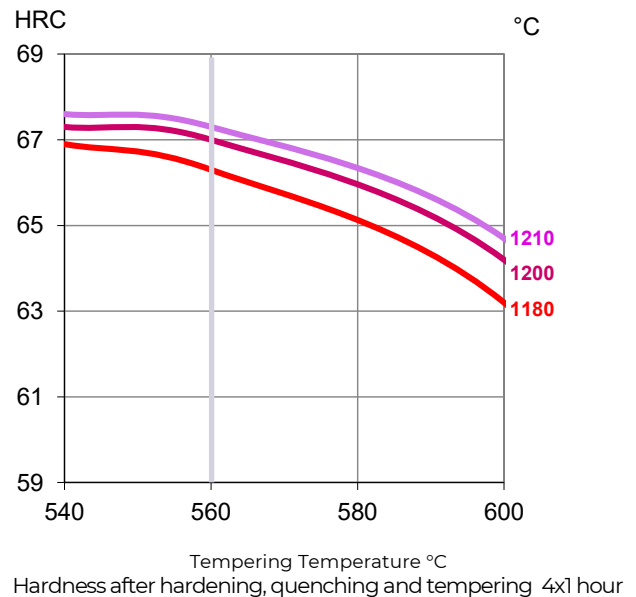
- Round bars

Available surface conditions: peeled and rough machined.

## HEAT TREATMENT

- Soft annealing in a protective atmosphere at 850-900°C for 3 hours, followed by slow cooling at 10°C/h down to 700°C, then air cooling.
- Stress-relieving at 600-700°C for approximately 2 hours, slow cooling down to 500°C.
- Hardening in a protective atmosphere with pre-heating in 2 steps at 450-500°C and 850-900°C and austenitising at a temperature suitable for chosen working hardness. Cooling down to 40-50°C.
- Tempering at 560°C four times\* for at least 1 hour each time. Cooling to room temperature (25°C) between tempers. *\*Four temperings are recommended in order to remove all retained austenite and ensure a fully tempered martensitic matrix.*

## GUIDELINES FOR HARDENING



## PROCESSING

ASP<sup>®</sup>2062 can be worked as follows:

- machining (grinding, turning, milling)
- polishing
- Hot forming
- electrical discharge machining
- welding (special procedure including preheating and filler materials of base material composition).

## GRINDING

During grinding, local heating of the surface, which may alter the temper, must be avoided. Grinding wheel manufacturers can provide advice 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.

**PROPERTIES**

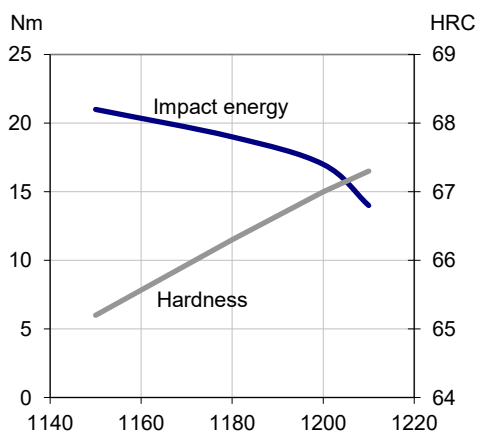
**PHYSICAL PROPERTIES**

Temperature	20°C	400°C	600°C
Density g /cm <sup>3</sup> (1)	8.2	8.1	8.0
Modulus of elasticity kN/mm <sup>2</sup> (2)	240	214	192
Thermal expansion ratio per °C (2)	-	11.2x10 <sup>-6</sup>	11.7x10 <sup>-6</sup>

(1)=Soft annealed

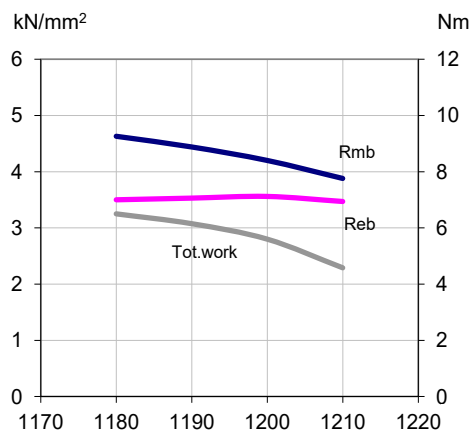
(2)=Hardened 1210°C and tempered 560°C, 4x1 hour to 67 HRC

**IMPACT TOUGHNESS**



Hardening temperature in °C  
Original dimension Ø42 mm  
Tempering 4 x 1 hour at 560° C  
Unnotched test piece 7 x 10 x 55 mm

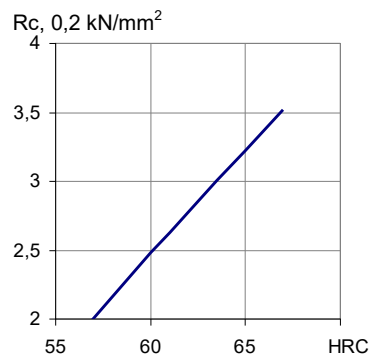
**4-POINT BEND STRENGTH**



Hardening Temperature in °C  
Original dimension Ø 5.6 mm  
Tempering 4 x 1 hour at 560°C  
Dimension of test piece Ø 4.7 mm

Rmb = Ultimate bend strength in kN/mm<sup>2</sup>  
Reb = Bend yield strength in kN/mm<sup>2</sup>  
Tot. work = Total work in Nm

**COMPRESSION YIELD STRESS**



**COMPARATIVE PROPERTIES**

