

## CHEMICAL COMPOSITION

C	Cr	Mo	W	Co	V
0.99	4.1	2.7	2.8	-	2.4

SAFETY DATA SHEET SDS: A

## STANDARDS

- Europe: HS 3-3-2
- Germany: 1.3333

## DELIVERY HARDNESS

- Typical soft annealed hardness is 220 HB
- Cold drawn and cold rolled material is typically 10-40 HB harder

## DESCRIPTION

ABC III is a medium alloyed high speed steel with good wear resistance.

## APPLICATIONS

- Power hacksaws
- Hand hacksaws
- Wear parts
- Vane pumps

## FORM SUPPLIED

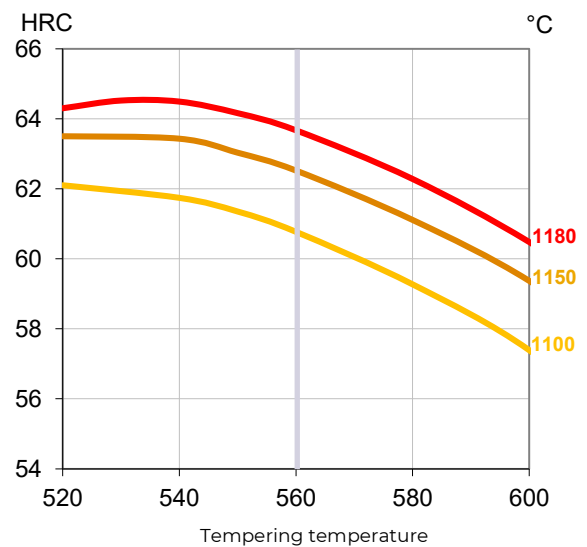
- Strips
- Sheets\*
- Discs\*

\* on request

## HEAT TREATMENT

- Soft annealing in a protective atmosphere at 850-900°C for 3 hours, followed by slow cooling 10°C per hour down to 700°C, then air cooling.
- Stress-relieving at 600°C to 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.
- 2 tempers at 560°C are recommended with at least 1 hour holding time each time.

## GUIDELINES FOR HARDENING



Hardness after hardening, quenching and tempering 2x1 hour

Tool	Hardening	Tempering
Saws, wear parts, vane pumps, etc.	1100-1180°C	550-570°C

## PROCESSING

ABCIII can be worked as follows:

- machining (grinding, turning, milling)
- polishing
- plastic 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 can alter the temper, must be avoided. Grinding wheel manufacturers can provide advice on the choice of grinding wheels.

## SURFACE TREATMENT

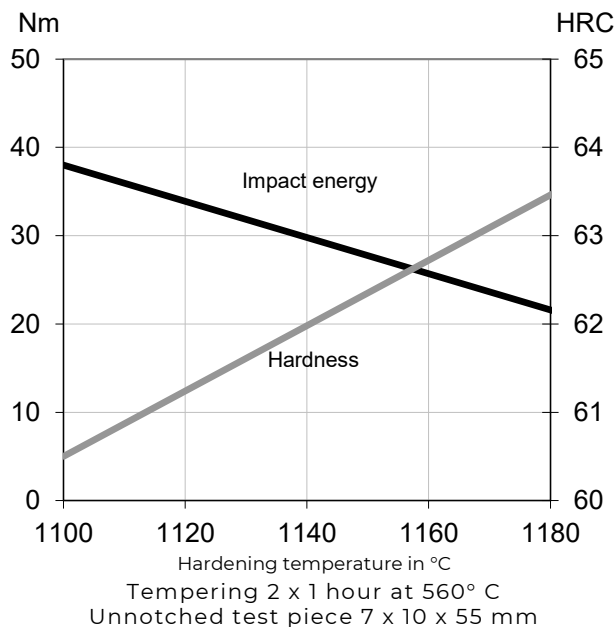
The steel grade is a perfect substrate material for PVD coating. If nitriding is requested, a small diffusion zone is recommended but avoid compound and oxidized layers.

**PROPERTIES**

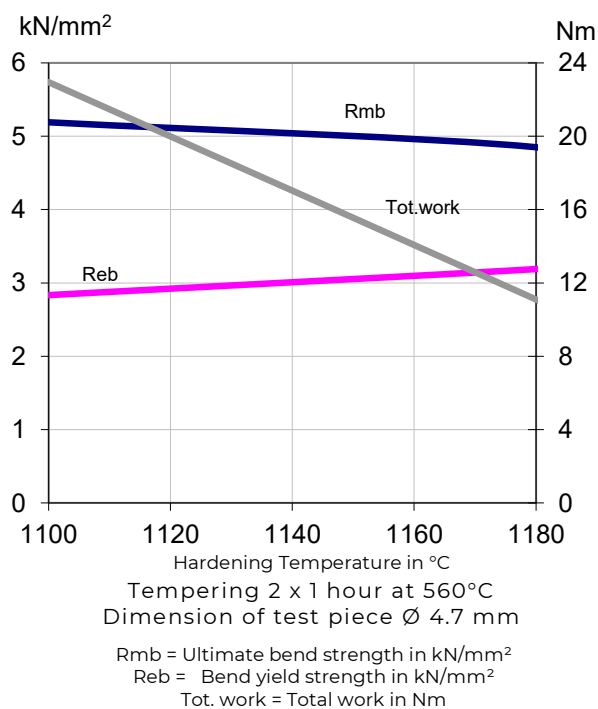
**PHYSICAL PROPERTIES**

Temperature	20°C
Density g /cm <sup>3</sup>	8.0

**IMPACT TOUGHNESS**



**4-POINT BEND STRENGTH**



**COMPARATIVE PROPERTIES**

