

BlueTap® Co is specifically designed to address the needs of tap manufacturers. Thanks to its fine and homogeneous microstructure, it offers an excellent grindability, and a superior combination of hardness and toughness.

## STANDARDS

- > EN 10027-1: PMHS 6-5-2-5
- > EN 10027-2: 1.3243
- > ASTM: AISI M35

## DELIVERY HARDNESS

- > Typical soft annealed hardness is 260 HB
- > Cold-drawn and cold-rolled material is typically 10-40 HB harder

## CHEMICAL COMPOSITION

Safety datasheet available

C	Cr	Mo	W	Co	V
0.93	4.2	5.0	6.3	4.8	1.8

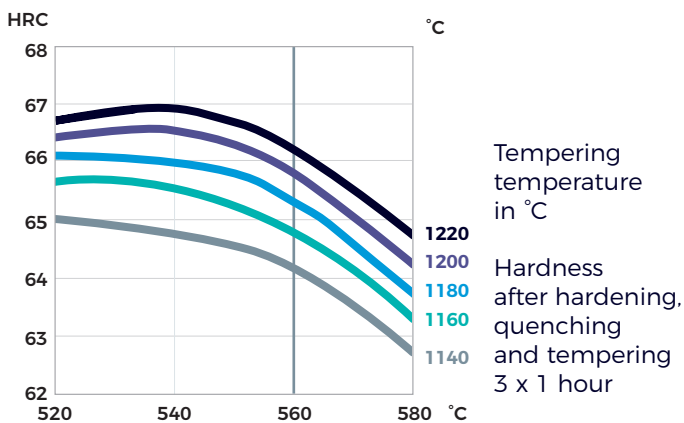
## APPLICATIONS

- > Taps

## 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 austenitizing at a temperature suitable for chosen working hardness.
- > Tempering at 560°C three times for at least 1 hour each time. Cooling to room temperature < 25°C between temperings.

## GUIDELINES FOR HARDENING



Tool	Hardening	Tempering
Multi-edge cutting tools	1180-1220°C	560°C

## FORM SUPPLIED

- > Drawn bars
- > Peeled bars up to Ø 40 mm

## PROCESSING

BlueTap® Co 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 can alter the temper, must be avoided. In general, grinding must be carried out more aggressively than with traditional tap materials such as Evloop® M35, in order to avoid blunting of the wheel.

Erasteel's technical support team can provide specific recommendations, and grinding wheel manufacturers can help choosing the most appropriate grinding wheels.

## SURFACE TREATMENT

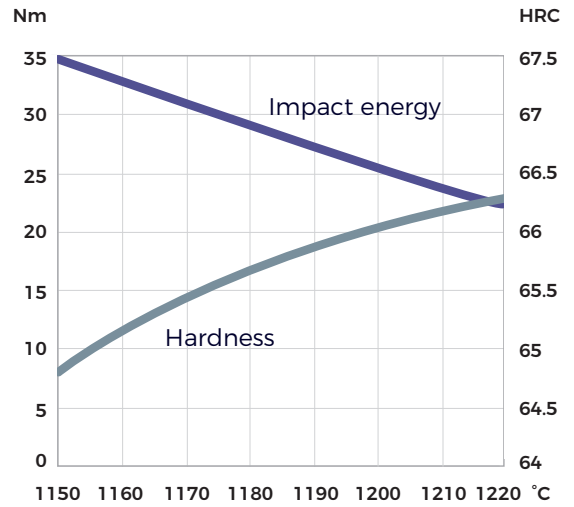
The steel grade is a perfect substrate material for PVD coating. If nitriding is requested, a small diffusion zone is recommended but avoid compound and oxidized layers.

**PROPERTIES**

**PHYSICAL PROPERTIES**

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

**IMPACT TOUGHNESS**



Hardening temperature in °C

Original dimension Ø 16 mm  
 Tempering 3 x 1 hour at 560 °C  
 Unnotched test piece 7 x 10 x 55 mm

**COMPARATIVE PROPERTIES**

