OCELE PRE PRÁCU ZA STUDENA

Dostupné výrobné profily

Tyčové polotovary* | Plechy

*) Presented data refer exclusivly to long products. Please observe the detailed explanations at the end of the data sheet (pdf).

Popis produktu

Strižné nástroje (matrice, razníky), nástroje pre lisovaciu techniku, nástroje na valcovanie závitov, nože nožníc.

Spôsob výroby

Konvenčná výroba

Vlastnosti

- Odolnosť proti opotrebovaniu : veľmi vysoká
- Pevnosť v tlaku : veľmi vysoká
- Rozmerová stabilita : dobré

Aplikácia

- Strojové nože (pre výrobcov)
- Strihanie / Dierovanie / Lisovanie / Presné strihanie
- Valcovanie
- Lisovanie práškov
- Tvárnenie za studena

Technické údaje

Označenie materiálu	
1.2363	SEL
~T30102	UNS
X100CrMoV5	EN
~X100CrMoV5-1	EN
A2	AISI
SKD12	JIS

Normy	
4957	EN ISO

Chemické zloženie

C	Si	Mn	Cr	Mo	V
1,00	0,30	0,55	5,20	1,10	0,25

Porovnanie vlastnosti materiálu

	Odolnosť proti tlakovému zaťaženiu	Rozmerová stabilita počas tepelného spracovania	Húževnatosť	Odolnosť proti abrazívnemu opotrebovaniu
BÖHLER K305	★★★★★	★★★	★★	★★★★★
BÖHLER K306	★★★★	★★★	★★★★	★★★
BÖHLER K313	★★★★	★★★	★★★	★★★
BÖHLER K320	★★★	★★★	★★★	★★★
BÖHLER K329	★★★	★★★	★★★★	★★★★
BÖHLER K600	★	★★★	★★★★★	★
BÖHLER K601	★	★★★	★★★★	★★
BÖHLER K605	★★	★★★	★★★★	★

Stav pri dodaní

Žíhaný

Tvrdosť (HB)	max. 240

Tepelné spracovanie

Žíhanie

Teplota	800 až 850 °C	Slow controlled cooling in furnace at a rate of 50 to 68°F/hr (10 to 20°C/hr) down to approx. 1112°F (600°C), further cooling in air.

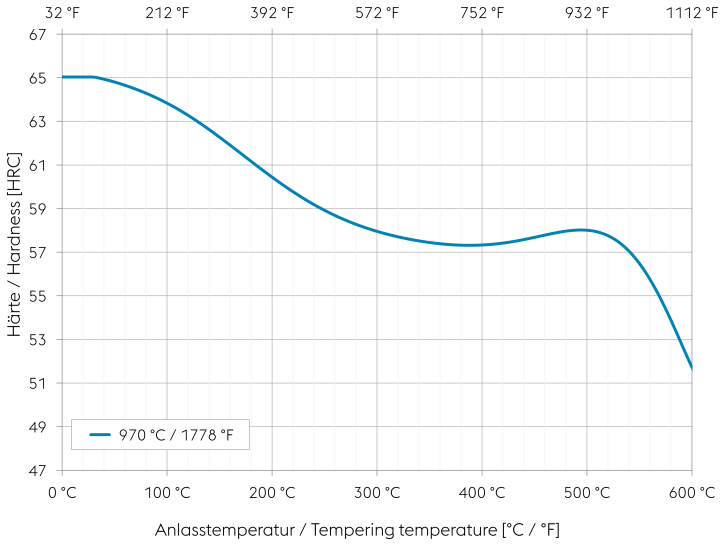
Žíhanie na odstránenie pnutí

Teplota	650 °C	Slow cooling in furnace. Intended to relieve stresses set up by extensive machining, or in complex shapes. After through heating, hold in neutral atmosphere for 1 - 2 hours..

Kalenie a popúšťanie

Teplota	950 až 980 °C	Oil, salt bath 428 to 482°F or 932 to 1022°F (220 to 250°C or 500 to 550°C), air, gas Holding time after temperature equalization: 15 to 30 minutes. After hardening, tempering to the desired working hardness, see tempering chart.

Tempering chart



Tempering:

Specimen size: square 0,787 inch (20 mm)

Slow heating to tempering temperature immediately after hardening.

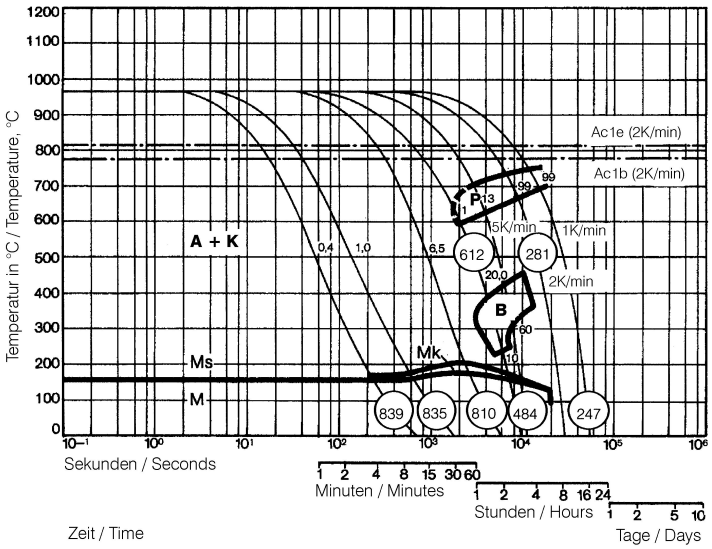
Time in furnace 1 hour for each 0,787 inch (20 mm) of workpiece thickness but at least 2 hours.

Slow cooling to room temperature after each tempering step is recommended.

Please refer to the tempering chart for guide values for the hardness achievable after tempering.

Tempering for stress relieving 86 to 122 °F (30 to 50 °C) below the highest tempering temperature.

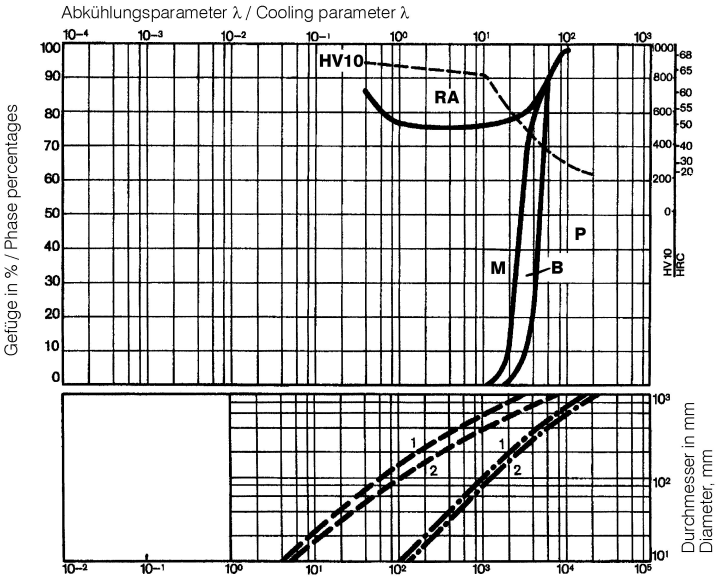
Continuous cooling CCT curves



Austenitising temperature: 960°C
Holding time: 15 minutes

O Vickers hardness
1...99 phase percentages
0.4...20.0 cooling parameter, i.e. duration of cooling from 800°C to 500°C in s x 10^{-2}
5K/min...1K/min cooling rate in K/min in the 800°C to 500°C range

Quantitative phase diagram

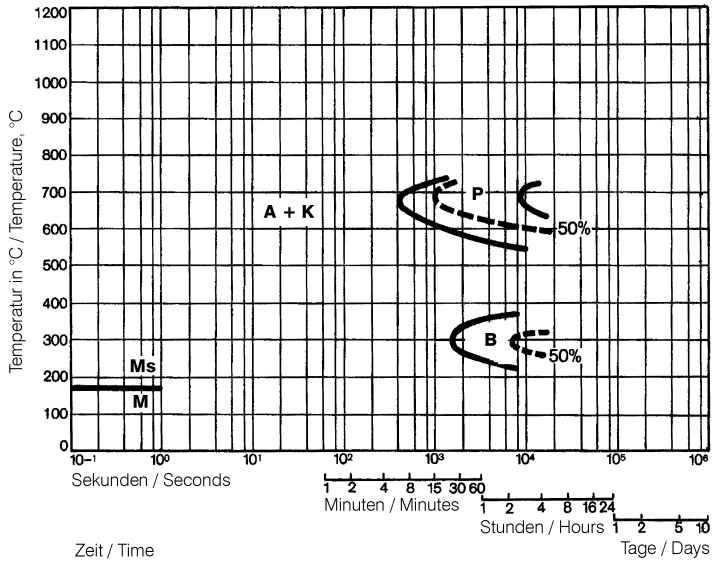


Mk... Grain boundary martensite
RA... Residual austenite
A... Austenite
B... Bainite
P... Perlite
K... Carbide
M... Martensite

- - - - - - Oil cooling
- • - Air cooling

1... Edge or face
2... Core

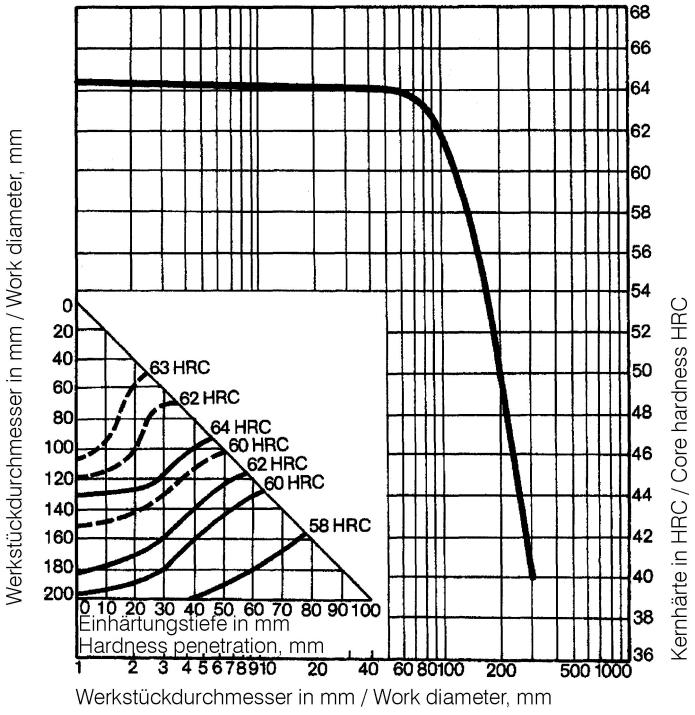
Isothermal TTT curves



Austenitising temperature: 960°C
Holding time: 15 minutes

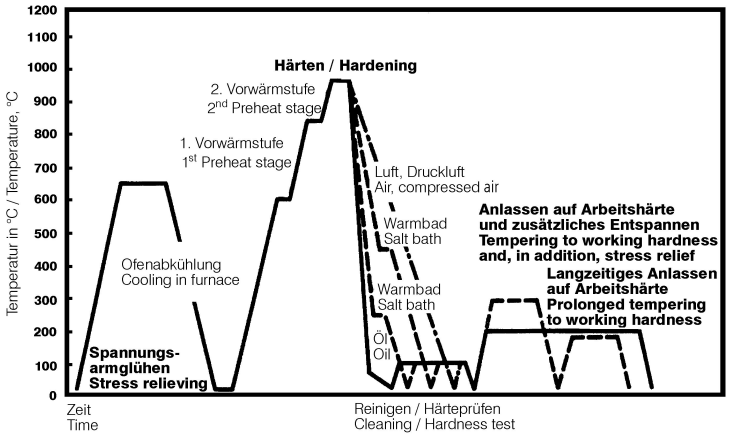
A... Austenite
B... Bainite
P... Perlite
K... Carbide
M... Martensite

Influence of work diameter on core hardness and hardness penetration



Quenched from: 960°C
Agent:
——— Oil
- - - - - - Air

Heat treatment sequence



Fyzikálne vlastnosti

Teplota (°C)	20
Hustota (kg/dm^3)	7,7
Tepelná vodivosť (W/(m.K))	26
Merná tepelná kapacita (kJ/kg K)	0,46
Merný elektrický odpor (Ohm.mm^2/m)	0,52
Modul pružnosti (10^{3}N/mm^2)	190

Tepelná rozťažnosť

Teplota (°C)	100	200	300	400	500
Tepelná rozťažnosť (10^{-6} m/(m.K))	12	12,1	11,9	11,6	11,7

Long Products: For additional specifications and technical requirements, please contact our regional voestalpine BÖHLER sales companies.

Sheet & Plates: Product Variant may differ in terms of melting process, technical data, delivery, and surface condition as well as available product dimensions. Please contact voestalpine BÖHLER Bleche GmbH & Co KG.

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voestalpine
ONE STEP AHEAD.