ACCIAI DA UTENSILI PER LAVORAZIONE A FREDDO

Granulometria disponibile

Prodotti lunghi* | Lamiere

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

Descrizione del prodotto

Acciaio per lavorazione a freddo temprabile in aria con buona stabilità dimensionale, elevata resistenza ad usura e buona lavorabilità.

Percorso di fusione

Airmelted

Proprietà

- Resistenza all'usura : molto alto
- Resistenza alla compressione : molto alto
- Stabilità dimensionale : buono

Applicazioni

- Lame automatiche (per produttori)
- Tranciatura / Tranciatura fine / Stampaggio
- Laminazione a freddo
- Pressatura delle polveri
- Stampaggio a freddo

Dati tecnici

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

Standard	
4957	EN ISO

Analisi chimica

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

Proprietà del materiale

	Resistenza alla compressione	Stabilità dimensionale durante il trattamento termico	Tenacità	Abrasivo resistente all'usura
BÖHLER K305	★★★★★	★★★	★★	★★★★★
BÖHLER K306	★★★★	★★★	★★★★	★★★
BÖHLER K313	★★★★	★★★	★★★	★★★
BÖHLER K320	★★★	★★★	★★★	★★★
BÖHLER K329	★★★	★★★	★★★★	★★★★
BÖHLER K600	★	★★★	★★★★★	★
BÖHLER K601	★	★★★	★★★★	★★
BÖHLER K605	★★	★★★	★★★★	★

Condizioni di consegna

Ricotto

Durezza (HB)	max. 240

Trattamento termico

Annealing

Temperatura	800 a 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.

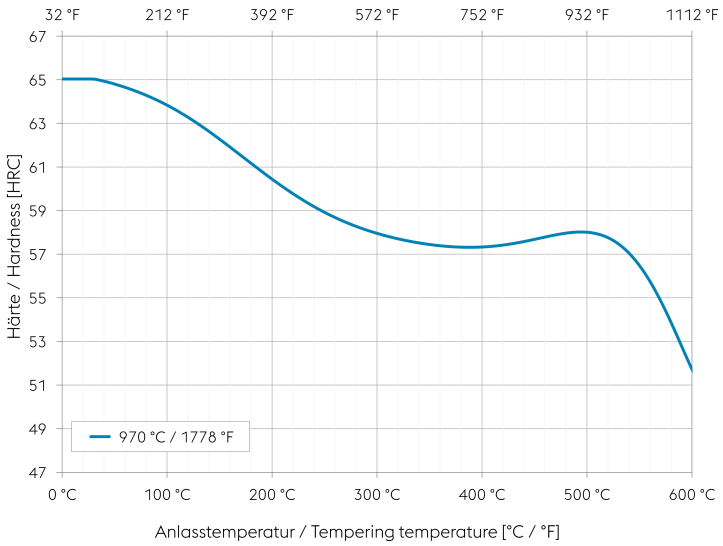
Alleviare lo stress

Temperatura	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..

Tempra e rinvenimento

Temperatura	950 a 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.

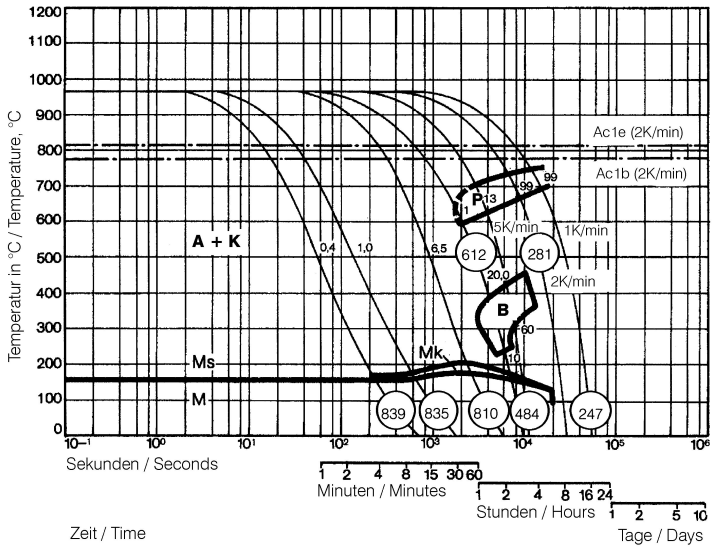
Time in furnace 1 hour for each 0,787 inch (20 mm) of workpiece thickness but at least 2 hours.

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.

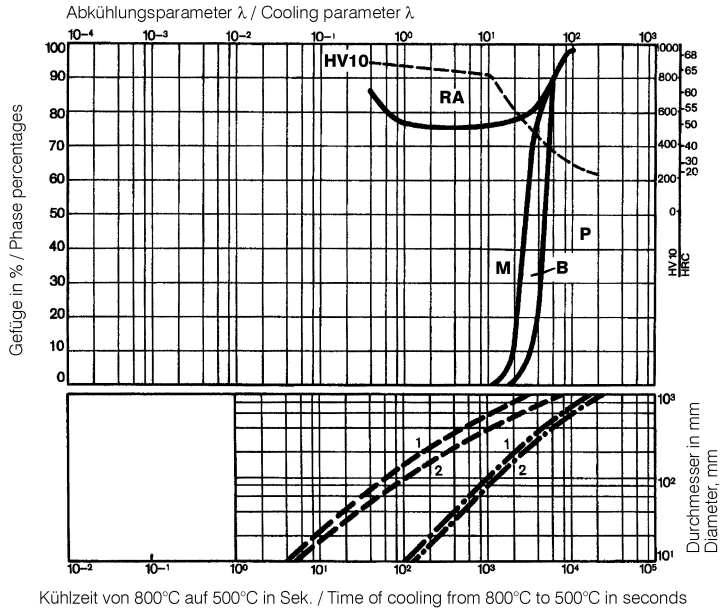
Continuous cooling CCT curves



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

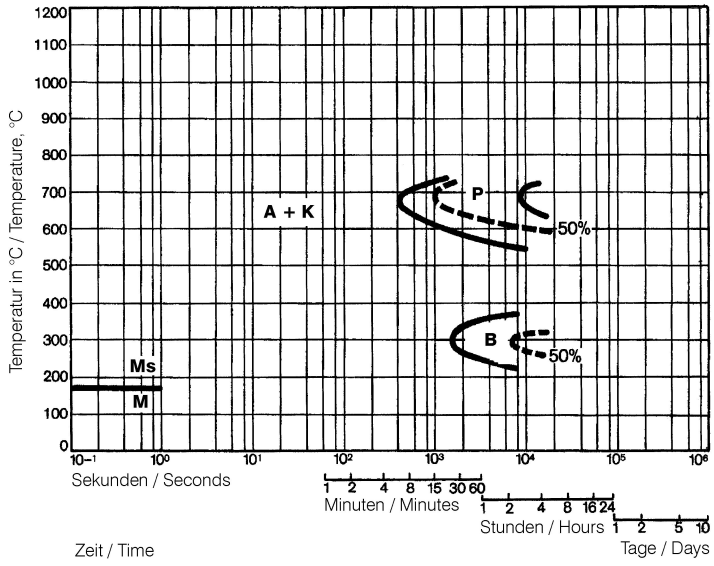


Mk... Grain boundary martensite
RA... Residual austenite
A... Austenite
B... Bainite
P... Perlite
K... Carbide
M... Martensite

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

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

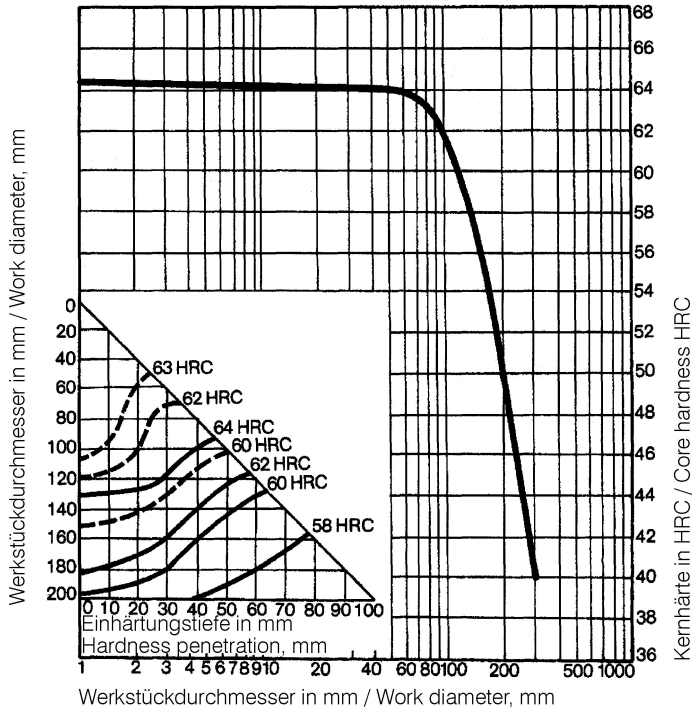
Isothermal TTT curves



Austenitising temperature: 960°C
Holding time: 15 minutes

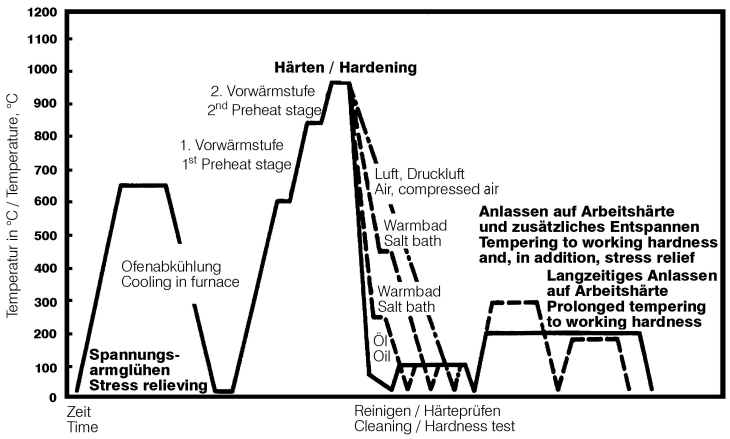
A... Austenite
B... Bainite
P... Perlite
K... Carbide
M... Martensite

Influence of work diameter on core hardness and hardness penetration



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

Heat treatment sequence



Proprietà fisiche

Temperatura (°C)	20
Densità (kg/dm^3)	7,7
Conducibilità termica (W/(m.K))	26
Capacità termica specifica (kJ/kg K)	0,46
Resistenza elettrica specifica (Ohm.mm^2/m)	0,52
Modulo di elasticità (10^{3}N/mm^2)	190

Espansioni termiche

Temperatura (°C)	100	200	300	400	500
Espansione termica (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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