

BRZOREZNI ČELICI

Dostupne varijante proizvoda

 Šipkasti proizvodi*

 Ploče

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

Opis proizvoda

BÖHLER S500 – vatrootporni čelik

U obitelji konvencionalnih brzoreznih čelika, ova slitina pruža ubjedljivo najbolju kombinaciju izvrsnih reznih svojstava i vrlo dobre tvrdoće u toplom stanju.

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Put taljenja

 Airmelted

Karakteristike

- > Žilavost i duktilnost : dobar
- > Otpornost na habanje : visok
- > Tlačna čvrstoća : vrlo visoka
- > Stabilnost rubova : visok
- > Mogućnost brušenja : dobar
- > Tvrdoća pri visokim temperaturama : vrlo visoka

Korištenje

- > Listovi za šivaće strojeve
- > Glodala
- > Svrkla i konusi
- > Strugači i razvrtači
- > Izrezivanje zupčanika, alati za brijanje i oblikovanje
- > Thread rolling (HR)
- > Hladno oblikovanje / utiskivanje
- > Posebni rezni alati

Tehnički podaci

Oznaka materijala		Standardi	
1.3247	SEL	4957	EN ISO
HS2-9-1-8	EN		

Kemijski sastav

C	Si	Mn	Cr	Mo	V	W	Co
1,1	0,5	0,2	3,9	9,2	1,1	1,5	7,8

Materijal

	Kapacitet tlaka	Brušenje	Vruća tvrdoća	Žilavost	Otpornost na habanje	Točnost rezanja
BÖHLER S500	★★★★	★★★	★★★★★	★★	★★★	★★★
BÖHLER S200	★★★	★★	★★★	★★	★★★	★★
BÖHLER S400	★★★	★★★	★★★	★★★	★★	★★
BÖHLER S401	★★	★★★	★★	★★★	★★	★★★
BÖHLER S404	★★	★★★	★★	★★★	★★	★★
BÖHLER S405	★★★	★★★	★★	★★★	★★	★★
BÖHLER S430	★★	★★★	★★	★★★	★★	★★
BÖHLER S600	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S601	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S607	★★★	★★★	★★★	★★	★★★	★★★
BÖHLER S630	★★★	★★★	★★★	★★	★★	★★★
BÖHLER S705	★★★	★★★	★★★★★	★★	★★	★★★★★
BÖHLER S730	★★★	★★★	★★★★★	★★	★★	★★★★★

Isporuka

Annealed

Tvrdoća (HB)	max. 280 Drawn max 300 HB
Vlačna čvrstoća (N/mm ²)	max. 6.964
Točka prinosa (MPa)	min. 3

Toplinska obrada

Annealing

Temperatura	770 do 840 °C	Controlled slow cooling in furnace (10 to 20°C / h) to approx. 600°C (1110°F), air cooling.
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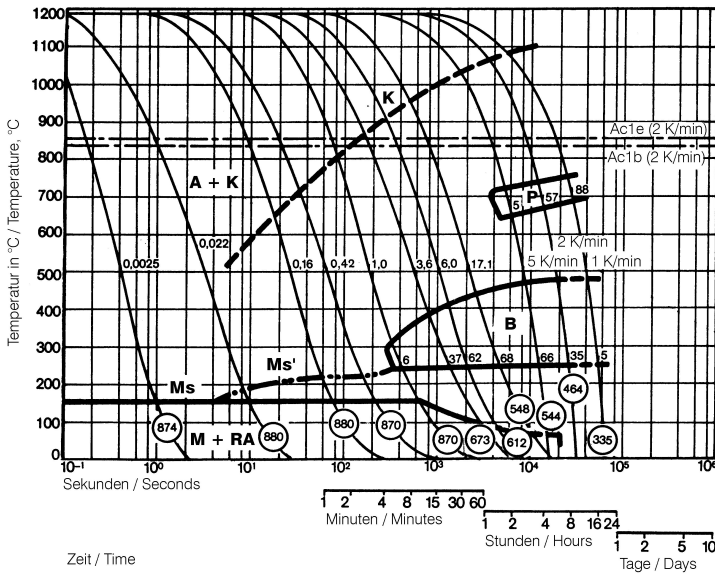
Stress relieving

Temperatura	600 do 650 °C	Slow cooling furnace. To relieve stresses set up by extensive machining or in tools of intricate shape. After through heating, hold in neutral atmosphere for 1 to 2 hours.
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Hardening and Tempering

Temperatura	1.130 do 1.180 °C	Salt bath, vacuum Preheating: 1st stage ~ 500 °C, 2nd stage ~ 850 °C, 3rd stage ~1050 °C Austenitising: 1130 - 1180 °C, holding time after complete heating 80 seconds, maximum 150 seconds, to avoid material damage due to overheating. Quenching: oil, warm bath (500 - 550 °C), gas
Temperatura	550 do 570 °C	Slow heating to tempering temperature immediately after austenitising. Dwell time in the furnace 1 hour per 20 mm material thickness (at least 1 hour) Slow cooling to room temperature 3 tempering cycles recommended Hardness see tempering chart

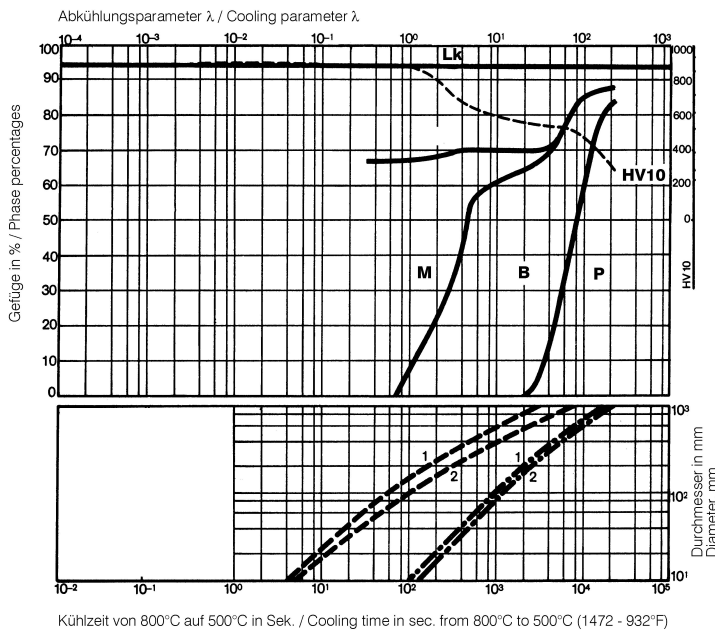
Continuous cooling CCT curves



Austenitising temperature: 1180°C (2156°F)
Holding time: 180 seconds

- A....Austenite
- B....Bainite
- K....Carbide
- P....Pearlite
- M....Martensite
- RA...Retained Austenite

Quantitative phase diagram

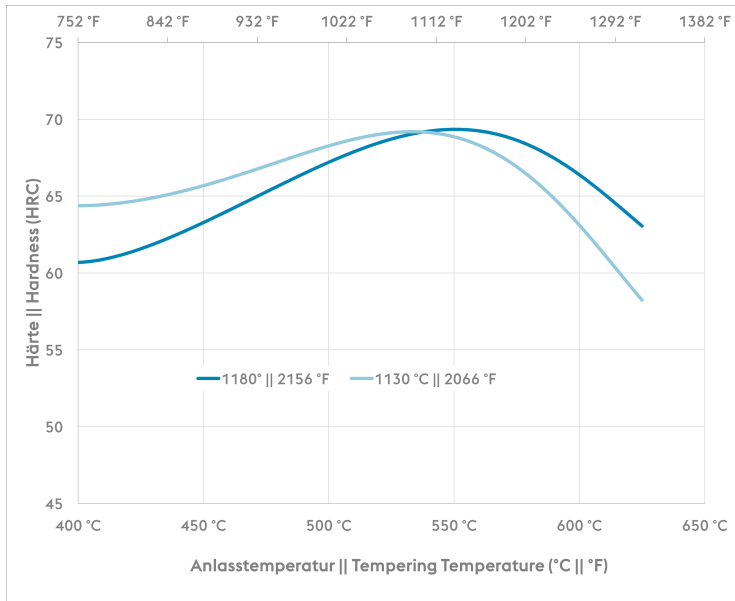


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- 1....Edge or Face
- 2....Core
- 3....Jominy test: distance from quenched end

- - oilcooling
- . - aircooling

Tempering Chart



Holding time 3 x 2 hours
Specimen size: square 25 mm

Fizička svojstva

Temperatura (°C)	20
Gustoća (kg/dm ³)	8,1
Toplinska vodljivost (W/(m.K))	20
Specifični toplinski kapacitet (kJ/kg K)	0,429
Spec. Otpornik (Ohm.mm ² /m)	0,52
Modul elastičnosti (10 ³ N/mm ²)	220

Toplinska ekspanzija

Temperatura (°C)	100	200	300	400	500	600	700
Toplinska ekspanzija (10 ⁻⁶ m/(m.K))	11	11,5	11,9	12,3	12,4	12,5	12,5

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.

The data contained in this brochure is merely for general information and therefore shall not be binding on the company. We may be bound only through a contract explicitly stipulating such data as binding. Measurement data are laboratory values and can deviate from practical analyses. The manufacture of our products does not involve the use of substances detrimental to health or to the ozone layer.

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ONE STEP AHEAD.