

TOOL STEELS

HARDENABLE CORROSION RESISTANT STEEL

Application Segments

Plastic Mould

Cold Work

Formatos disponibles

Productos largos

Descripción

Martensitic chromium steel with high carbon, molybdenum and vanadium addition.

Método de obtención

Convencional

Propiedades

- > Dureza y Ductilidad : buena
- > Resistencia al desgaste : muy alta
- > Maquinabilidad : buena
- > Estabilidad dimensional : buena
- > Pulibilidad : buena
- > Resistencia a la corrosión : alto

Aplicaciones

- > Canales calientes
- > Moulds for plastic injection (PIM)
- > Foodindustry like extrusion screws, can closing rolls
- > Pharmaceutical industry like pill punches and -dies
- > Extrusion screws for plastic processing

Datos técnicos

Designación	
1.4112	SEL
~1.2361	
X90CrMoV18	EN
~X91CrMoV18	
~440B	AISI

Composición Química

C	Si	Mn	Cr	Mo	V
0,9	0,45	0,4	17,5	1,1	0,1

Estado de suministro

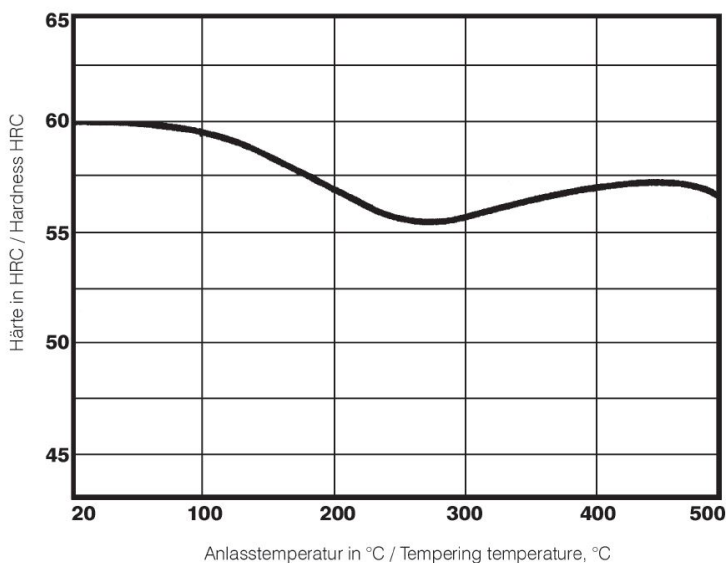
recocido	
Dureza (Unit)	máx. 265

Tratamiento térmico

Alivio de tensiones		
Temperatura	650 °C	After through heating, keep at temperature for 1 to 2 hours in a neutral atmosphere. Slow furnace cooling

Temple y revenido		
Temperatura	1.000 a 1.050 °C	Holding time after complete soaking, max. 30 minutes / 25 mm cross section
Temperatura	150 a 350 °C	Tempering treatment required after hardening to the desired working hardness - see tempering chart. Tempering of min. 2h after complete soaking. Tempering shall be made immediately after hardening. After each tempering a cooling RT shall be done.

Tempering chart



Hardening temperature: 1030°C / 1886°F
Specimen size: square 20 mm

Hardness up to 57 - 59 HRC

Propiedades físicas

Temperatura (°C)	20
Densidad (kg/dm ³)	7,7
Conductividad térmica (W/(m.K))	15
Calor específico (kJ/kg K)	0,43
Resistencia eléctrica específica (Ohm.mm ² /m)	0,8
Módulo de elasticidad (10 ³ N/mm ²)	215

Expansión térmica

Temperatura (°C)	100	200	300	400	500
Expansión térmica (10 ⁻⁶ m/(m.K))	10,4	10,8	11,2	11,6	11,9

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

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