HOT WORK TOOL STEEL WITH HIGH HARDNESS AND GOOD TOUGHNESS

BÖHLER W360 ISOBLOC®

BÖHLER EDELSTAHL

BÖHLER W360 ISOBLOC® was developed as a tool steel for dies and punches in warm and hot forging. With a hardness range in use from 52 to a maximum of 57 HRc and good toughness throughout this hardness range, the steel can be used for a variety of applications where hardness and toughness are required.

Properties

- **High hardness (recommended in use: 52 – 57 HRc)**
- **Exceptional toughness**
- **High temper resistance**
- **Good thermal conductivity**

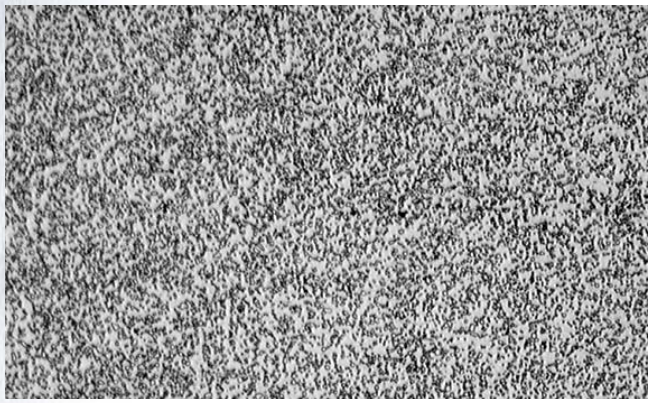
Applications

- **Dies and punches in warm forging**
- **Dies and punches in hot forging**
- **Tooling for high speed presses (e.g. Hatebur)**
- **Toughness-critical cold work applications**
- **Extrusion dies**
- **Core pins and inserts in die casting dies**

Chemical analysis (approx.):

C	Si	Mn	Cr	Mo	V
0.5	0.20	0.25	4.50	3.00	0.55

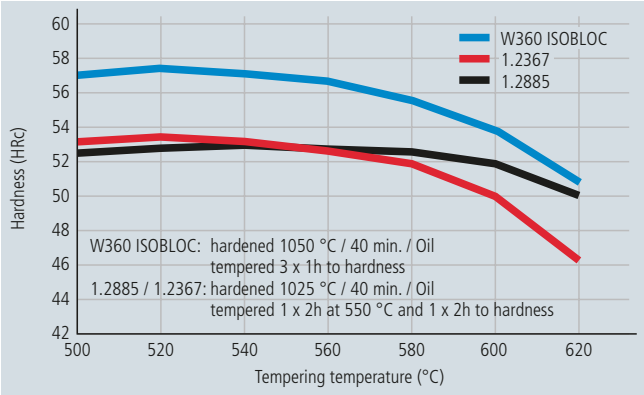
DIN / AISI-Standard:
Patented



Tempering behaviour

W360 ISOBLOC is capable of achieving a higher hardness than the standard hot work tool steels DIN 1.2367 and 1.2885, and is also more temper-resistant than these steels.

Tempering chart



Heat treatment parameter

Austenitising: 1050 °C oil, salt-bath (500 – 550 °C), air or vacuum with gas quench.

Time at hardening temperature following temperature equalisation: 15 – 30 min.

Achievable hardness: see tempering curve.

Tempering: At least twice. Heat slowly to tempering temperature immediately after hardening. Holding time at tempering temperature at least 1 hour per temper. A third temper is advantageous.

Toughness

The toughness of hot work tool steels is one of the most important properties for safety against fracture and increased resistance to heat-checking and thermal shock. High hardness is associated with low toughness. Generally this is not the case for W360 ISOBLOC, which has a toughness, measured at 57 HRc, of approx. 27J at 500 °C (Charpy-U specimens). This is almost exactly the same as the toughness of the standard hot work tool steel DIN 1.2367 at 51 HRc (approx. 28J) and around 23% higher than the toughness of the standard hot work tool steel DIN 1.2885 at 51 HRc (approx. 22J).