

HOT WORKING TOOL STEEL BGH TOUGH ONE

CHEMISTRY

Grade	C	Si	Mn	Cr	Mo	V
BGH TOUGH ONE	0,35	0,15	0,35	5,00	1,90	0,55
H11	0,37	1,00	0,40	5,20	1,30	0,40

content in mass-%

In many cases H11 according to common international standards cannot fulfil the requirements of high sophisticated modern tools. The toughness needed is far above the potential of the standard H11 and makes the use of ESR material necessary. With an optimized chemistry combined with innovative production processes **BGH TOUGH ONE** is the perfect fit for these applications and can usually replace ESR material.

BGH Tough One can be heat treated with standard parameters used for H11.

DELIVERY CONDITION:

- > annealed max. 229 HB
- > EFS-annealed
- > surface turned/peeled

APPLICATIONS:

- > extrusion dies
- > forging dies
- > die casting
- > plastic moulds

HEAT TREATMENT:

- > annealing: 820–880 °C
- > austenitization: 1010–1050 °C
- > quenching: nitrogen, oil, polymer
- > tempering: acc. to tempering diagram

THERMAL EXPANSION COEFFICIENT:

$10^{-6} \text{ m}/(\text{m} \times \text{K})$

- > 20–100 °C = 10,1
- > 20–400 °C = 12,3
- > 20–600 °C = 13,0

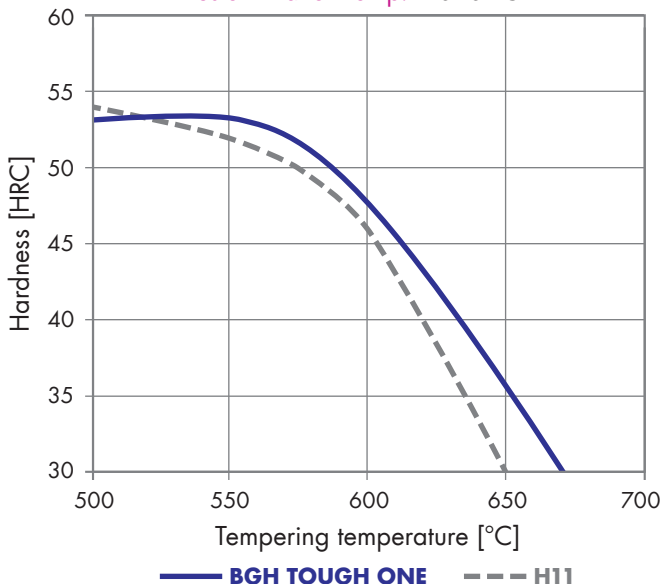
THERMAL CONDUCTIVITY:

$\text{W}/(\text{m} \times \text{K})$

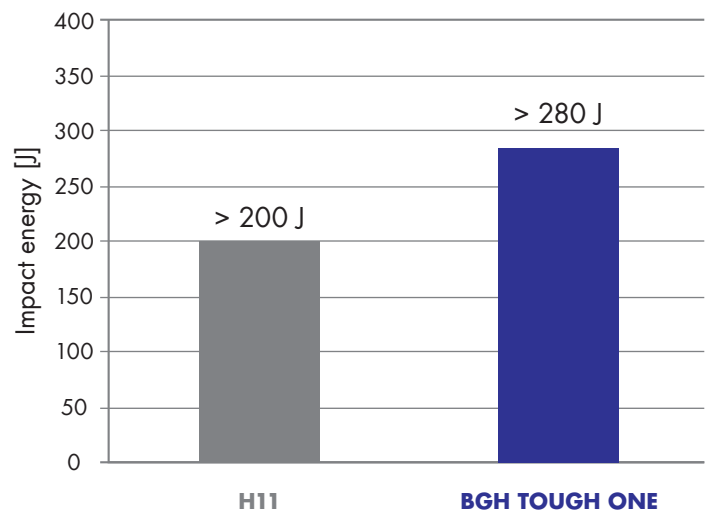
- > 20 °C = 29,7
- > 200 °C = 30,6
- > 400 °C = 31,2

Tempering Diagram BGH TOUGH ONE vs. H11

Austenitization temp. 1020 °C



Impact toughness at 45 HRC, unnotched



All data above is for information only and does not create any binding contractual obligations.