BÖHLER

BÖHLER W751

HOT WORK TOOL STEELS

Available Product Variants

Open Die Forgings

Product Description

BÖHLER W751 ISOBLOC is not a classic hot work tool steel, but a hardenable steel with an austenitic structure. Compared to quenched and tempered steels, the material does not generate its strength through a hardening structure with high carbon content and secondary hardening carbides, but through the precipitation of intermetallic phases from a tough austenitic matrix. BÖHLER W751 ISOBLOC is a chemically modified version of material number 1.2779 (X6NiCrTi26-15) and has proved to be ideally suited for many tool steel applications in cold and hot work (e.g., for extrusion liners) up to 750 °C and is therefore an economic alternative to superior nickel base alloys.

Process Melting

Airmelted + Remelted

Properties

Highly creep and corrosion resisting, precipitation hardening austenitic steel. Modified A286 for extrusion tools.

Applications

- Extrusion

Technical data

Material designation	
~1.2779	SEL
~X6NiCrTi26-15	EN

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	Ni	V	Ti	Al
0.02	≤ 0,20	1.4	15	1.25	25	0.3	2.8	0.25

Delivery condition

Solution annealed + precipitation hardened	
Hardness (HB)	310 to 370
Tensile Strength (MPa | ksi)	min. 1,050 | 153 | min.

Physical Properties

Temperature (°C | °F)	20 | 68
Density (kg/dm^3 | lb/in^3)	7.95 | 0.29
Thermal conductivity (W/(m.K) | BTU/ft h °F)	14 | 8.09
Specific heat (kJ/kg K | BTU/lb °F)	0.465 | 0.1111
Spec. electrical resistance (Ohm.mm^2/m | 10^{-4} Ohm.inch^2/ft)	0.85 | 4.02
Modulus of elasticity (10^{3}N/mm^2 | 10^{3}ksi)	206 | 29.88

Thermal Expansions between 20°C | 68°F and ...

Temperature (°C | °F)	100 | 212	200 | 392	300 | 572	400 | 752	500 | 932	600 | 1,112	700 | 1,292
Thermal expansion (10^{-6} m/(m.K) | 10^{-6} inch/inch.°F)	16.5 | 9.2	16.8 | 9.3	17.1 | 9.5	17.3 | 9.6	17.5 | 9.7	17.7 | 9.8	18 | 10

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ONE STEP AHEAD.