

CREEP RESISTANT STEELS

Product Description

Thermal power plant and heat engine components, e.g. turbine shafts and discs, various shapes, flanges and screws for service temperatures up to 550°C.

Properties

Chromium-molybdenum-vanadium high temperature constructional steel.

Applications

- > Fasteners, Bolts, Nuts
- > Other Power Generation Components

Technical data

Material designation		Standards	
1.7709	SEL	10269	EN ISO
21CrMoV5-7	EN		

Chemical composition (wt. %)

C	Si	Mn	Cr	Mo	V
0.23	0.3	0.5	1.3	0.75	0.3

Heat treatment

Annealing

Temperature	680 to 720 °C 1256 to 1328 °F	Controlled, slow cooling in furnace.
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Stress relieving

Temperature	600 to 650 °C 1112 to 1202 °F	In the quenched and tempered condition, approx. 30 to 50°C below tempering temperature. In the annealed condition 600 to 650°C. Holding time: 1 hour min.
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Physical Properties

Density	7.85 0.28	[kg/dm ³ lb/in ³]
Thermal conductivity	33 19.07	[W/(m.K) BTU (IT) ft/hr/ft ² /F]
Specific heat	460 109.87	[J/(kg.K) BTU (IT) lb/F]
Spec. electrical resistance	0.86 4.06	[Ohm.mm ² /m 10 ⁻⁴ Ohm.inch ² /ft]
Modulus of elasticity	211 30.6	[10 ³ N/mm ² 10 ³ ksi]

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

Temperature (°C °F)	100 212	200 392	300 572	400 752	500 932	600 1112
Thermal expansion (10 ⁻⁶ m/(m.K) 10 ⁻⁶ inch/(inch.F))	11.1 6.2	12.1 6.7	12.9 7.2	13.5 7.5	13.9 7.7	14.1 7.8

For more information see <https://www.voestalpine.com/boehler-edelstahl/de/>

For additional specifications and other sizes please contact BÖHLER Edelstahl - Special Materials Aerospace & Land Based Turbine

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