1.4913 (X19CrMoNbVN11-1)

Excellence in Specialty Steel

Material Designation

1.4913 DIN

Standards

DIN EN 10269
DIN EN 10302
DIN EN 17240

Chemical Composition Mass-%

	C	Si	Mn	P	S	Cr	Ni	Mo	V
min.	0,17	0,10	0,40	-	-	10,00	0,30	0,50	0,10
max.	0,22	0,50	0,80	0,025	0,015	11,50	0,60	0,80	0,30

	Al	B	Nb	N
min.			0,25	0,05
max.	0,020	0,0015	0,55	0,10

Customer specific restrictions upon request

Properties

1.4913 is a high-temperature heat-treatable steel. Due to the alloying with boron and nitrogen, very good creep rupture and strength properties as well as good corrosion resistance in the temperature range up to 600 °C are achieved.

Delivery Condition

- quenched and tempered (+QT)
- quench., tempered, stress relieved (+QT +SR)

Application Area

Components with high requirements for creep strength in environments with elevated temperatures, e.g. in the area of thermal power generation.

Typical Applications

- Fasteners
- High temperature bolts and shafts
- Turbine blades
- Steam valves

Mechanical Properties acc. to DIN EN 10269

Condition	Diameter [mm]	Yield strength [N/mm²]	Tensile strength [N/mm²]	Reduction of area [%]	Elongation [%]	Impact toughness [J] Charpy-V
+QT	≤ 160	≥ 750	900 - 1050	≥ 40	≥ 12	≥ 20

Minimum values of the 0.2 % proof stress at elevated temperatures

Condition	Diameter [mm]	Temperature [°C]	Yield strength [N/mm²]
+QT	≤ 160	350	≥ 610
		600	≥ 305

Heat Treatment Guideline values acc. to DIN EN 10269

	Temperature [°C] / Duration	Cooling medium
Quenching and tempering +QT	1100 - 1130 (Hardening)	Oil, polymer, air
	670 - 720 (Tempering), min 2h	Air
Stress relieving +SR	630 - 710	Air

The information contained in this data sheet is unbinding and serves as a first orientation. Liability is excluded, errors and printing mistakes are reserved.

Quality

- ISO 9001
- ISO 14001
- ISO 50001
- Approvals acc. to standards like ABS, BV, DNV ...
- Customer specific approval certificates

Innovation

- Fully automated ultrasonic testing up to dia. 1000 mm
- CO_2-reduction by innovative heat treatment solutions

Flexibility

- Product range from fine wire to forging
- Directly from stock close at hand

Individuality

- Dimensions
- Tolerances
- Surface qualities
- Delivery conditions

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