

X10CrMoVNb9-1 (P91)

High-temperature steel · Material no. 1.4903

X10CrMoVNb9-1 – short P91 – is a high-temperature 9 % chromium steel for modern power plants with the highest steam parameters (up to ~620 °C).

1.4903 MATERIAL NO.	≥ 450 MPa YIELD STRENGTH RP0.2	630–830 MPa TENSILE STRENGTH RM	~ 620 °C SERVICE TEMP.
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Application

- Main-steam and live-steam lines
- Superheaters and headers in high-performance boilers
- Power plant new-build and retrofit

Chemical composition (typical, wt.-%, per EN)

Element	Content (%)
C	0.08–0.12
Si	0.20–0.50
Mn	0.30–0.60
Cr	8.00–9.50
Mo	0.85–1.05
V	0.18–0.25
Nb	0.06–0.10
N	0.03–0.07

Mechanical properties (typical at RT, per EN)

Property	Value
Yield strength Rp0.2	≥ 450 MPa
Tensile strength Rm	630–830 MPa
Elongation A	≥ 19 %
Impact energy KV	≥ 40 J

Standards & supply

Topic	Detail
Standards	EN 10216-2
ASME/ASTM equivalent	= ASTM A335 P91 · A182 F91
Short name / aka	P91 · A335 P91
Product forms	Pipes, flanges, fittings – seamless/welded, EN 10204 3.1/3.2 mill certificate

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All data are typical values per the relevant EN standards for first orientation – without warranty. The applicable standard and the mill certificate of the delivery are decisive.