20MnV6

TECHNICAL DATA SHEET

Steel Grade: 20MnV6
(EN 10297-1 / EN 10294-1 – Seamless mechanical tubes)

General Description

20MnV6 is a **micro-alloyed, non-alloy steel** typically supplied as **hollow bars or seamless tubes** for mechanical applications. Thanks to the presence of **vanadium**, it offers improved toughness and good weldability. It is usually delivered in the **normalized (N)** or **as-rolled (AR)** condition, and can be subsequently quenched and tempered if higher strength is needed. The internal surface is generally smooth and free from scale, making it suitable for machining and hydraulic applications.

CHEMICAL COMPOSITION (*% by weight*)

C%	Si% max	Mn%	P% max	S%	Cr% max	Mo% max	Ni% max	Al%	V%
0.16-0.22	0.10-0.45	1.30-1.70	0.025	0.020-0.040	0.50	0.15	0.30	0.020-0.050	0.10-0.20
± 0.02	± 0.02	± 0.02	± 0.02	± 0.02					

MECHANICAL PROPERTIES (*in normalized condition – +N*)

Size (mm) from - to	R * N/mm2 min	Rp 0.2 N/mm2 min	A% min	C% min	Kv+20°C Jmin	Kv+0°C Jmin	Kv-20°C Jmin	HB min
to 25	580	450	16					172
25 - 80	550	420	16					159
from 80	530	380	16					156

(*) Testing at room temperature (longitudinal)

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Hot-rolled quenched and tempered +QT

Size (mm) from - to	R * N/mm2 min	Rp 0.2 N/mm2 min	A% min	C% min	Kv+20°C Jmin	Kv+0°C Jmin	Kv-20°C Jmin	HB min
to 25	700	620	16		40	35	27	213
25 - 80	650	570	16		40	35	27	200
from 80	600	520	16		40	35	27	178

(*) Testing at room temperature (longitudinal)

REFERENCE STANDARDS IN THE WORLD

ITALY UNI	CHINA	GERMANY DIN	FRANCE AFNOR	UK BS	USA AISI/SAE
20MnVS6	20MV	appr. 1.5217 (1 .8915 StE 460)	20MnV6	GR55C	A381

hysical Properties

- **Density**: 7.85 g/cm³
- **Modulus of Elasticity**: ~210 GPa
- **Thermal Conductivity**: ~45–50 W/m·K
- **Specific Heat Capacity**: ~460 J/kg·K

Standards and Equivalents

- **EN**: 20MnV6 (1.5217)
- **DIN**: StE 460
- **AFNOR**: E460FP
- **ISO**: 20MnV6
- **Approx. AISI/SAE**: Closest is 1524 with V alloying (non-direct equivalent)

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