

MIM-Material Specification and Applications

Composition

Material: Case-hardened steel

Standards: 1.7131, 16MnCr5

Typical composition::	<i>Element</i>	<i>Content (%)</i>
	C	0.14 – 0.19
	Ni	1.00 – 1.30
	Cr	0.80 – 1.10
	Si	≤ 0.40
	Fe	Balance
	Other	-

Properties

	As sintered	Case-hardened
Density	≥ 7.30 g/cm ³	≥ 7.30 g/cm ³
Hardness	≥ 110 HV10	≥ 700 HV10
Yield strength R _{p0.2}	≥ 200 MPa	≥ 600 MPa
Tensile strength R _m	≥ 350 MPa	≥ 800 MPa
Elongation A	≥ 40 %	-
Surface quality R _a	≤ 1.6 μm	≤ 1.6 μm

Application / remarks

Case-hardening steels have a carbon content of 0.10-0.30%. They are particularly suitable for case hardening, which consists of carburising, hardening and tempering. This creates a hard, wear-resistant surface layer and a tough core, which gives them impact resistance and wear resistance. The material is used in shafts, coupling parts and gear wheels as well as in defence technology.

The data given are based on our experience to date. However, no liability can be assumed.