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Parmaco
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MIM-Material Specification and Applications

Composition

Material: **Silicon-Iron, silicon alloyed steel, soft magnetic**

Standards: **3%SiFe, FeSi3, 1.0844**

Typical composition::

Element	*Content (%)*
C	≤ 0.10
Ni	-
Mo	≤ 0.50
Si	2.50 – 3.00
Fe	Balance
Other	-

Properties

	As sintered
Density	≥ 7.60 g/cm^3
Hardness	≥ 100 HV1
Yield strength $R_{p0.2}$	≥ 300 MPa
Tensile strength R_m	≥ 500 MPa
Elongation A	≥ 20 %
Surface quality R_a	≤ 1.6 µm
Max. Induction B_m	1.4 – 1.5 T
Residual induction B_r	0.8 – 0.95 T
Coercive force H_c	0.5 – 0.62 Oe
Max. Permeability µmax	7200 – 7500 G/Oe
Specific electric resistivity	0.4 Ωmm^2/m

Application / remarks

3%SiFe has relatively high permeability. Max induction is only slightly less than that of pure iron, while the coercive field is markedly below that of pure Iron. This soft magnetic material is uses for poles and relay parts where response time on flux change is important.