

Cold Rolled Strips

PERMIMPHY

PERMIMPHY is nickel-iron soft magnetic alloy with properties suitable for high quality shieldings, pole pieces, current sensing cores, watch motors components, rotor/stator laminations for synchro resolvers, profiled laminations for transformers, flux concentrators for automotive torque sensors

International standards

ASTM A 753, DIN 17405, IEC 404, JIS C 2531

Chemical composition

Elements (% weight)	Ni	Mo	Fe
Typical value	80	5	Bal

Physical properties

Density (g/cm ³)	Melting T° (°C - °F)	Curie T° (°C - °F)	Thermal expansion (10 ⁻⁶ .°K ⁻¹)	Resistivity (μΩ.cm)	Thermal conduction (W/°Km)	Specific heat (J.Kg ⁻¹ .°K ⁻¹)
8.7	1450 - 2642	420 - 788	12	60	19	460

Magnetic properties*

Conditions	Thickness (mm - ")	Saturation induction (G - T at 10Oe ≈ 80A/m)	Coercive force (Oe - A/m)	Permeability (at 5 mOe ≈ 0.4 A/m)
DC	1 - 0.04	7500 - 0.75	0.005 - 0.4	470000
DC	0.34 - 0.0134	7500 - 0.75	0.005 - 0.4	520000
AC 60 Hz	0.34 - 0.0134	-	-	75000

* Typical values measured on rings samples after heat treatment at 1170°C / 2138°F in pure & dry Hydrogen after proper cooling

Mechanical properties*

Temper	Hardness HV	Grain size	Tensile strength (MPa - KSI)	Yield strength (MPa - KSI)	Elongation %
Soft	160	8	650 - 94	280 - 41	35
Hard	320	-	1050 - 152	1030 - 149	3

* Typical values for material to be tested in accordance with NF EN ISO 6507-1, NF EN ISO 643, NF EN ISO 6892-1 (Méthode B)

Standard delivery & dimensions available

Form*	Coil - Sheet
Thickness (mm / ")	0.10 to 3 / .004 to .118
Width (mm / ")	10 to 640 / .4 to 25.2
Length (mm / ")	500 to 3500 / 19.7 to 137.8
Temper	Soft / Hard

* Depending on thickness, width & temper

Available Forms

PERMIMPHY is delivered in cold rolled strip. Contact us for other specific formats.

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The data enclosed in this document are given as indicative values and correspond to our standard product.
Different specific requirements are subject to discussion and formal approval by Aperam Alloys Imphy. For further information or special request, please contact us.

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