

GARBA 1812MO

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Stainless spring wire

GARBA 1812Mo is an austenitic stainless steel, which as compared to GARBA 178Mo offers a higher resistance against intergranular corrosion due to lower carbon content. The higher content of molybdenum also increases the resistance against general corrosion.

CHEMICAL COMPOSITION

C (%)	Si (%)	Mn (%)	P max. (%)	S max. (%)	Cr (%)	Ni (%)	Mo (%)
0.07	1.00	2.00	0.045	0.015	16.50 - 18.50	10.00 - 13.00	2.00 - 3.00

MECHANICAL PROPERTIES

FOR ROUND WIRE

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Diameter (mm)	Tolerance (\pm mm)	Tensile Strength (N/mm ²)
0.30 - 0.65	0.008	-
0.66 - 1.01	0.010	-
1.02 - 2.26	0.015	-
2.27 - 4.01	0.020	-
4.02 - 6.26	0.025	-
6.27 - 8.00	0.030	-
0.30 - 0.40		1675 - 1930
0.41 - 0.50		1650 - 1900
0.51 - 0.65		1625 - 1870
0.66 - 0.80		1600 - 1840
0.81 - 1.00		1575 - 1810
1.01 - 1.25		1550 - 1780
1.26 - 1.50		1500 - 1730
1.51 - 1.75		1450 - 1670
1.76 - 2.00		1400 - 1610
2.01 - 2.50		1350 - 1550
2.51 - 3.00		1300 - 1500
3.01 - 3.50		1250 - 1440
3.51 - 4.25		1225 - 1410
4.26 - 5.00		1200 - 1380
5.01 - 6.00		1150 - 1320
6.01 - 7.00		1125 - 1290
7.01 - 8.00		1075 - 1240

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SURFACE CONDITIONS

Surface performance

AC-surface 0.30–8.00 mm Ø. The AC-coating can be removed before heat treatment by using a 10–20% nitric acid pickle at room temperature.

PHYSICAL PROPERTIES

E AND G MODULUS OF ELASTICITY

Abt. 175 kN/mm² in drawn condition.
Abt. 180 kN/mm² after heat treatment.

E AND G MODULUS OF SHEAR

Abt. 68 kN/mm² in drawn condition.
Abt. 71 kN/mm² after heat treatment.
Density: 8.00 kg/dm³.

HEAT CONDUCTIVITY

Temperature °C	20	100	200	400
W/(m*°C)	13.5	14.5	15.5	18.5

RESISTIVITY

Temperature °C	20	100	200	400
nΩm	750	800	850	1000

LINEAR EXPANSION

Pro °C	30-100	30-200	30-400
x10 ⁻⁶	16.5	17.0	18.0

SPECIFIC HEAT CAPACITY

Temperature °C	20	100	200	400
J/(kg*°C)	440	480	520	560

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STANDARDS

NEAREST EQUIVALENT STEEL GRADES

EN/DIN 1.4401, AISI/SAE 316, JIS SUS 316

NEAREST EQUIVALENT STANDARDS

EN 10270-3, ASTM A313, BS 2056 316 S42, JIS G4314

RECOMMENDATIONS

HEAT TREATMENT

As soon as possible after coiling, the springs should be stress relieved.
Recommended temperature for compression springs or tension springs without initial tension is approx. 420 °C for 0.5 - 4 hours.