

HOKOTOL THE HIGH-STRENGTH ALLOY



FIELDS OF APPLICATION

- molds for blow forming and injection molding for the plastic processing industry
- bolsters, force plates and die holder (punching technique)
- machine parts for high strength requirements with low weight
- mechanical components with elevated mechanical properties

CHARACTERISTICS

- excellent machinability
- extremely uniform mechanical properties across the total thickness
- excellent mechanical properties in the centre of the plate
- excellent dimensional stability by stress relieving stretching
- excellent thermal conductivity
- excellent electrical conductivity
- excellent polishability

Mechanical properties¹⁾

Thickness	Tensile strength R _m	Yield strength R _{p0.2}	Elongation A
[mm]	[MPa]	[MPa]	[%]
100	575	532	7.8
200	533	479	3.6
300	535	483	3.2

¹⁾ typical tensile properties at room temperature; measured at S/4; test direction L-T

Thermal Stability [MPa]

Temperature	Tensile strength R _m	Yield strength R _{p0.2}	Elongation A
[°C]	[MPa]	[MPa]	[%]
24	533	462	8
100	441	421	15
149	221	193	29
204	117	90	54

HARDNESS

- Brinell-Hardness HB ~180

Chemical composition [all data wt.-%]

Alloys		Chemical elements									Other individual	Other total
		Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Zr		
HOKOTOL	Min.	-	-	1.5	-	1.8	-	5.7	-	0.08	-	-
	Max.	0.30	0.35	2.6	0.1	2.6	0.05	7.6	0.06	0.25	0.05	0.15

Properties regarding workability

Alloys	Machinability	Homogeneity	Dimensional stability	Wear resistance	Weldability	Polishability	Corrosion resistance
HOKOTOL							

■ not suitable ■ very well suited

Dimensional Capabilities

Thickness	Max. width	Max. length	Thickness	Max. width	Max. length	Thickness	Max. width	Max. length
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
8 - 100	2,000	10,000	150	1,270	4,000	200	1,050	3,550
125	1,537	4,000	170 - 180	1,220	3,800	Other dimensions on request.		

Physical properties in comparison to steel

Property	Hardness		Density		E-Modulus		Coefficient of thermal expansion		Thermal conductivity		Electrical conductivity	
	[HB]	[g/cm³]	[lbs/ins³]	[MPa]	[ksi]	[10 ⁻⁶ /K]	[W/mK]	[BTU · ins/ft² · h · °F]	[m/Ohm · mm²]	[%IACS]		
HOKOTOL	~180	2.83	0.10	70,300	10,200	23.5	154	1,068	23.0	39.7		
Steel 1.2312	~300	7.85	0.28	210,000	30,458	12.5	34.5	240	10.3	17.8		