

High-Density Tungsten Based Metals

Hogen Industries high-density metals are high strength, machinable, tungsten based materials used where high density and strength are required.

TYPICAL PROPERTIES*

Hogen Industries	<u>HM 1000</u> 90% W 6% Ni 4% Cu	<u>HM 1000 BB</u> 90% W 6% Ni 4% Cu/Fe	<u>HM1100</u> 90% W 7% Ni 3% Fe	<u>HM1150</u> 92.5% W 5.25% Ni 2.25% Fe	<u>HM1250</u> 93% W Balance Ni Fe Mo	<u>HM3000</u> 95% W 3.5% Ni 1.5% Cu	<u>HM3050</u> 95% W 3.5% Ni 1.5% Fe	<u>HM3750</u> 97% W 2.1% Ni .9% Fe
ASTM-B-777-07	Class 1		Class 1	Class 2	Super Chatter Free™	Class 3	Class 3	Class 4
Density Gms/cc	17	17	17.5	17.7	18	18	18.5	
Density Lbs/cu. in.	.614	.614	.632	.639	.650	.650	.668	
Hardness Rockwell C	24	25	26	30	27	27	28	
Ultimate Tensile Strength (PSI)	110,000	125,000	114,000	130,000	115,000	125,000	128,000	
Yield Strength .2% offset (PSI)	90,000	88,000	90,000	90,000	85,000	90,000	85,000	
Elongation (% in 1")	8	14	12	10	7	12	10	
Proportional Elastic Limit (PSI)	45,000	52,000	46,000	60,000	45,000	44,000	45,000	
Modules of Elasticity (PSI)	40 x 10 ⁶	45 x 10 ⁶	47 x 10 ⁶	53 x 10 ⁶	45 x 10 ⁶	50 x 10 ⁶	53 x 10 ⁶	
Coefficient of Thermal Expansion X 10 ⁻⁶ /°C (20-400°C)	5.4	4.8	4.6	4.5	4.4	4.6	4.5	
Thermal Conductivity (CGS Units)	.23	.18	.20	.27	.33	.26	.30	
Electrical Conductivity (% IACS)	14	10	13	14	16	13	17	
Magnetic Properties	HM1000 = NIL HM1000BB = Slightly Magnetic		Slightly Magnetic	Slightly Magnetic	Slightly Magnetic	NIL	Slightly Magnetic	Slightly Magnetic

* Properties may vary according to size and shape of part.

◆ Composition shown is typical and may change for manufacturing purposes or to meet physical and/or application requirements. If non-magnetic material is required, it should be specified.

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