

High-Density Tungsten Based Metals

	HD17	HD17BB	HD17NM	HD17D	HD17.5	HD17.7 Diemitech®	HD18	HD18NM	HD18D	HD18.5
	90% W 6% Ni 4% Cu	90% W 6% Ni 4% Cu/Fe	90%W 8.8% Ni 1.2% Fe	90% W 7% Ni 3% Fe	92.5% W 5.25% Ni 2.25% Fe	93% W Balance Ni Fe Mo	95% W 3.5% Ni 1.5% Cu	95% W 4.4% Ni 0.6% Fe	95% W 3.5% Ni 1.5% Fe	97% W 2.1% Ni .9% Fe
ASTM-B-777	Class 1		Class 1	Class 1	Class 2	Super Chatter Free™	Class 3	Class 3	Class 3	Class 4
Density Gms/cc	17		17	17	17.5	17.7	18	18	18	18.5
Density Lbs/cu. in.	.614		0.614	.614	.632	.639	.650	.650	.650	.668
Hardness Rockwell C	24		28	25	26	30	27	29	27	28
Ultimate Tensile Strength (PSI)	113,000		118,000	125,000	114,000	130,000	115,000	115,000	125,000	128,000
Yield Strength .2% offset (PSI)	86,000		86,000	88,000	90,000	90,000	85,000	85,000	90,000	85,000
Elongation (% in 1")	8		6	14	12	10	7	7	12	10
Proportional Elastic Limit (PSI)	45,000		45,000	52,000	46,000	60,000	45,000	45,000	44,000	45,000
Modules of Elasticity (PSI)	40 x 10 ⁶		40 x 10 ⁶	45 x 10 ⁶	47 x 10 ⁶	53 x 10 ⁶	45 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		5.8	4.8	4.6	4.5	4.4	5.2	4.6	4.5
Thermal Conductivity (CGS Units)	.23		0.18	.18	.20	.27	.33	.19	.26	.30
Electrical Conductivity (% IACS)	14		12	10	13	14	16	15	13	17
Magnetic Properties	HD 17 = < 1.05 HD 17BB = Slightly Magnetic		< 1.05	Slightly Magnetic	Slightly Magnetic	Slightly Magnetic	< 1.05	< 1.05	Slightly Magnetic	Slightly Magnetic