

High Density Tungsten Alloys Properties Chart

	HD 17	HD 17BB	HD 17D	HD 17.5	HD 17.7	HD 18	HD 18D	HD 18.5
	90% W 6% Ni 4% Cu	90% W 6% Ni 4% Cu/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 3.5% Ni 1.5% Fe	97% W 2.1% Ni .9% Fe
ASTM-B-777	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.	0.614		0.614	0.632	0.639	0.65	0.65	0.668
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)	0.23		0.18	0.2	0.27	0.33	0.26	0.3
Electrical Conductivity (% IACS)	14		10	13	14	16	13	17
Magnetic Properties	HD 17 = NIL HD 17BB = Slightly Magnetic		Slightly Magnetic	Slightly Magnetic	Slightly Magnetic	NIL	Slightly Magnetic	Slightly Magnetic