

Tungsten Alloys Technical Information

March 2019

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Table 1 – Typical Properties and Standards

Grade	HA 190	HA 1925	HA 195	HE 390	HE 3925	HE 395	HE 397
Aerospace Industry Standards							
ASTM B777-15	Non-magnetic Class 1	Non-magnetic Class 2	Non-magnetic Class 3	Magnetic Class 1	Magnetic Class 2	Magnetic Class 3	Magnetic Class 4
AMS7725E	Type 1 Class 1	Type 1 Class 2	Type 1 Class 3	Type 2 Class 1	Type 2 Class 2	Type 2 Class 3	Type 2 Class 4
Typical Properties*							
Nominal % Tungsten	90	92.5	95	90	92.5	95	97
Binder	Ni/Cu	Ni/Cu	Ni/Cu	Ni/Fe	Ni/Fe	Ni/Fe	Ni/Fe
Nominal Density							
g/cm ³	17.1	17.5	17.9	17.1	17.5	18.1	18.5
lb/in ³	0.62	0.63	0.65	0.62	0.63	0.65	0.67
0.2% Proof Stress							
MPa	675	650	680	645	645	660	660
ksi	100	95	100	95	95	95	95
Tensile Strength							
MPa	805	830	805	875	900	910	915
ksi	116	120	116	126	130	131	132
% Elongation on 25mm (1")	7	9	4	25	27	22	12
Hardness, HRC	24	24	24	27	24	24	25

*Properties may vary according to size and shape of part and production conditions. Figures shown are rounded and are typical for coupons (to fig.19 of ASTM E8) measured in accordance with ASTM B777-15; they are offered without warranty or guarantee. Values may be altered without notice and do not constitute a specification and should not be used for design purposes. It is for the customer to satisfy itself of the suitability of the products for its own particular purposes and environmental conditions.

Applications

Tungsten alloys can be used in a variety of applications including radiation shielding, balancing, ballast and anti-vibration devices.

For more specific advice about which grades are most suitable for your application please contact AM LLC.

Table 2 - Tungsten Alloy Compared to Other Materials

	Typical Density g/cm ³	Typical Density lbs/ins ³
Aluminium	2.7	0.10
Steel	7.8	0.28
Brass	8.4	0.30
Lead	11.3	0.41
HE 395*	18.1	0.65
Depleted Uranium	19.0	0.69

* See footnote above