

# BinderSHIELD™ Printed Tungsten

rp+m Technical Data Sheet #401

## Product overview

The infiltrated tungsten composite offers high density artifacts with superior radiation shielding, eliminating the need for traditionally manufactured lead parts.

The binder jetting process offers part complexity not possible through conventional molds, cores and machining. Support structures, build plates or tool paths are *not* required for this process.

## Composition

E-Class = Epoxy-infiltrated Tungsten  
99% pure W < 250 ppm O<sub>2</sub>

B-Class = Bronze-infiltrated Tungsten  
90% Cu, 10% Sn

## Design capabilities

- Feature size: 100 μm (minimum)
- Wall thickness: 300 μm (minimum)
- Maximum part size: 25.4 cm x 25.4 cm x 15.2 cm

## Typical applications

- Counter weights
- Custom weights
- Radiation guiding
- Radiation shielding



## BinderSHIELD™ Printed Tungsten TYPICAL PROPERTIES AT ROOM TEMPERATURE

Property	E-Class	B-Class
Density	0.4 lbs/in <sup>3</sup> (11.5 g/cc)	0.5 lbs/in <sup>3</sup> (14.4 g/cc)
Porosity	19%	<1%
Surface roughness*	70.9 μin (1.8 μm)	106.3 μin (2.7 μm)
Ultimate strength	21 MPa (3.1 ksi)	427 MPa (61.9 ksi)
Young's Modulus	19 GPa (2.8 Mpsi)	175 GPa (25.4 Mpsi)
Elongation	0.1%	0.5%

\* Surface roughness values were measured using a Mahr Perthometer M2 with a 1.7 mm stroke.

Let's talk.

Contact an rp+m professional today:

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