

STEEL

Material Data Sheet

Shapeways' 3D printed steel is **Stainless Steel Alloy 420 infiltrated with Bronze (90% Cu/10% Sn)**. It is a matrix material composed of **60% stainless steel and 40% bronze**.

60% 420 Stainless Steel + 40% bronze

Property	Value	Unit	Test Method
Ultimate Tensile Strength (UTS)	496	MPa	ASTM E8
Yield Strength (0.2% offset)	427	MPa	ASTM E8
Elastic Modulus	147	GPa	ASTM E8
Elongation	7.0	%	ASTM E8
Hardness	93	HRb	ASTM E18
Density	7.86	g/cm ³	MPIF 42
Thermal Conductivity	22.6	W/m ^{°K}	ASTM E1530
Specific Heat	478	J/kg ^{°K}	ASTM E1263
Thermal Expansion Coefficient	13.4 x 10 ⁻⁶	/ ^{°K}	ASTM E228

Notes: *The values listed here should be used for reference only.*