absolute™ (short fiber filled epoxy)

Sawbones' unique epoxy formulation is filled with short glass fibers and used to simulate cortical bone for structural testing of fixation devices and total joint replacements. Our simulated cortical bone has a density, fracture toughness, strength, modulus and hardness all similar to cadaveric cortical bone.

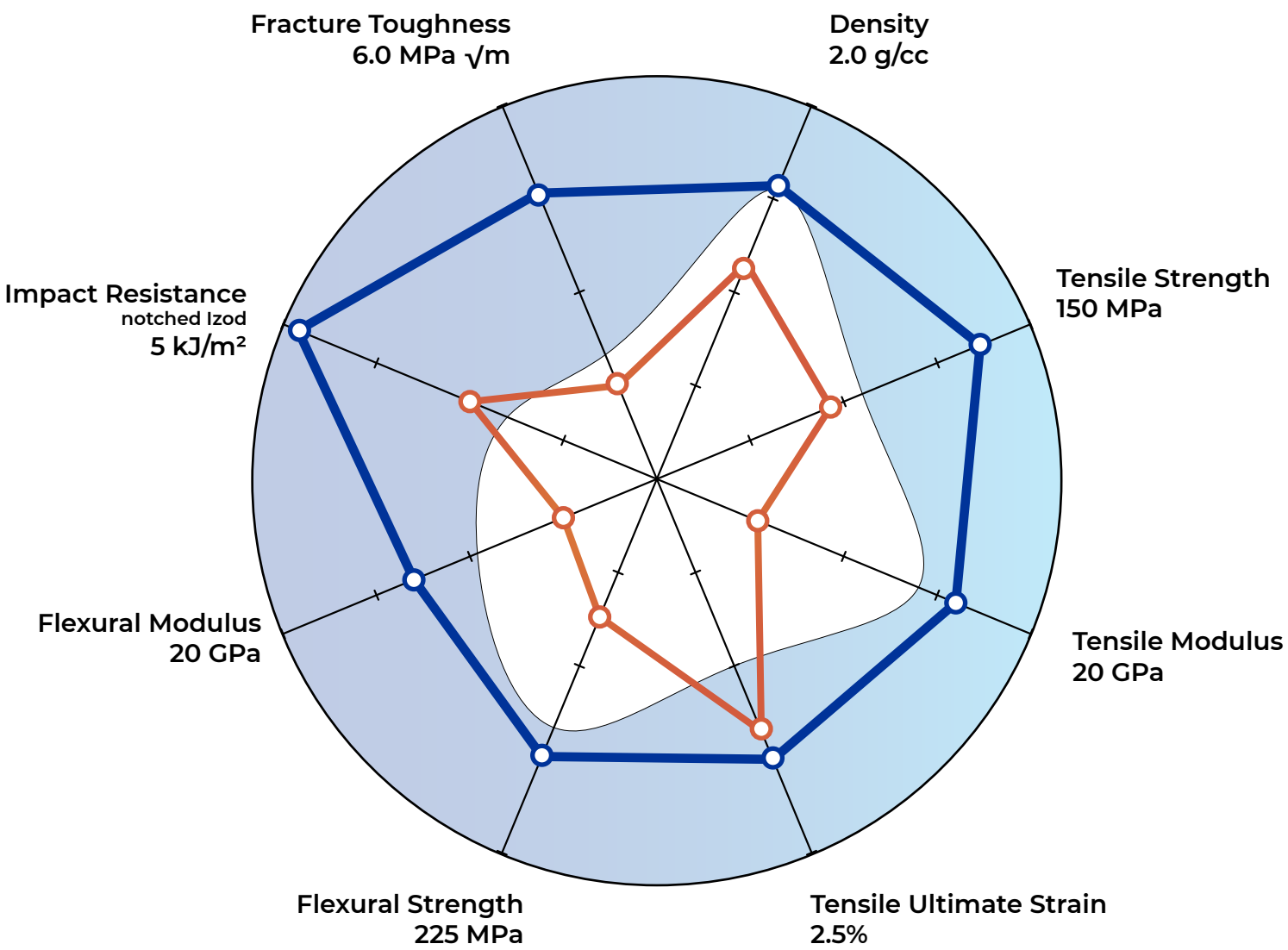
This material is the cortical bone for all our absolute™ bones

For more information see our Biomechanical Validation Studies page.

PHYSICAL PROPERTY		absolute™ 4TH GEN.	absolute™ OSTEO	UNITS	TEST METHOD
Density		102	82	pcf	ASTM D792
		1.64	1.31	g/cc	
Hardness		92	90	Shore D	ASTM D2240
Tensile Modulus	Longitudinal	16	5.4	GPa	ASTM D638
	Transverse	11	isotropic	GPa	
Tensile Strength	Longitudinal	130	70	MPa	
	Transverse	96	isotropic	MPa	
Ultimate Tensile Strain	Longitudinal	1.9	1.7	%	
	Transverse	1.5	isotropic	%	
Flexural Modulus		12	5.1	GPa	ASTM D790
Flexural Strength		145	81	MPa	
Poisson Ratio		0.26	0.26		
Compressive Strength		167	147	MPa	ASTM D695
Fracture Toughness, K_{IC}		4.6	1.5	MPa $M^{1/2}$	ASTM E399
Impact Strength, Notched Izod		48	25	J/m	ASTM D256
Impact Resistance, Notched Izod		4.7	2.5	kJ/m^2	

absolute™ SHEET/CYLINDER TOLERANCES:	
Density	+/- 2.5%
Length and Width	+/- 2mm
Sheet/Wall Thickness	≤ 2mm = +/- 0.2mm > 2mm = +/- 0.3mm

SAWBONES®



Legend:
Blue Gradient is human cortical bone
Dark blue is absolute™ 4th Gen.
Orange is absolute™ osteo

SAWBONES®