The OsteFab® Advantage: Bone-Like Mechanics

		BIOLOGICAL	MEDICAL POLYMERS						MEDICAL ALLOYS		
PHYSICAL	**Units**	**Bone (Cortical)**	**OXPEKK® Laser Melted (OsteoFab®)**	**OXPEKK® Extruded**	**OXPEKK® Inj. Molded 5% BaS04**	**PEEK Extruded**	PMMA	UHMWPE	Ti6Al4V	316 SS	CoCrMo
Density	**g/cc**	1.5 - 2.0	**1.29 - 1.31**	**1.31**	**1.46**	**1.29**	1.19	0.935	4.43	7.95	8.28
Water Absorption	**%**		**<0.2**	**<0.20**		**0.5**	0.35	<0.05			
MECHANICAL											
Tensile Str, Ult	**MPa**	53 - 135	**83**				62.1	49.4	950	586	1365
Tensile Str, Yield	**MPa**	114		**138**	**117.2**	**100**	52 - 71	22.4	880	434	930
Elongation at Break	**%**	0.7 - 3.1	**2.5**	**30+**	**8**	**20**	10	390	14	57	22
Mod. of Elasticity	**GPa**	6.9 - 27.4	**3.5**	**4.41**	**4.36**	**3.4**	3.1	0.5	113.8	193	190
Flexural Strength	**Mpa**		**180**	**193.1**	**193**	**170**	103.4	24.1			
Comp. Yield Str.	**MPa**	131 - 205	**160**	**206.8**	**144.8**	**118**	125.5	20.7	970		
THERMAL											
CTE, linear 20°C µm/m-°C			**21.1**	**21.1**		**47-108**	90	180	8.6	16	12.8
Melting Point	**°C**		**307**	**360**	**360**	**340**	160	137.3	1604-1660	1370 - 1400	1350 - 1430

OXPEKK® Material

- **<u>3D printed</u> via the OsteoFab® process - has performance characteristics most similar to bone when compared with PEEK and titanium**
- **<u>Extruded or Molded</u> – superior mechanical performance vs. PEEK, most notably in compression**