



OsteoFab® Design Guide

OPM's guidelines for designing medical devices using OsteoFab® technology

This document's intent is to provide medical device designers and engineers with basic information concerning process capabilities of OPM's OsteoFab® 3D printing process.

Materials Technology:

OXPEKK® polymer

- Poly-Ether-Ketone-Ketone (PEKK) high performance thermoplastic

Process Technology:

OsteoFab®

- Additive manufacturing utilizing laser sintering of OXPEKK® polymer

Maximum Component Size:

600 mm x 500 mm x 300 mm

Linear Tolerance:

As a general rule normal linear tolerance is ± 0.75 mm up to 25 mm and a maximum of ± 1.9 mm at 600 mm

Minimum Thickness:

1.00 mm

Maximum Thickness:

25.4 mm

Thickness Tolerance:

± 0.25 mm @ 1.5 mm
 ± 0.65 mm @ 25 mm

Hole Tolerance:

± 0.35 mm per 6 mm hole diameter

Section Dish:

± 0.25 mm

Straightness:

Axial bow ± 0.38 mm per 25 mm of length

Note:

Tolerances are as printed prior to available post process machining

Typical Properties:

Density: 1.29 g/cm³ (unfilled)

Melt Temperature: 305°C

Compressive Strength: 160 MPa

Elastic Modulus: 3.5 GPA

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