



## TITANIUM ASYMMATRIX™ TYPE 1 Rough Coating

### SUMMARY

Titanium ASYMMATRIX™ Type 1 is available for porous coating:

- Commercially pure irregular shaped titanium powder conforming to ASTM F 67 and ASTM 1580 is utilized to coat Ti6Al4V components.
- Three coating layers are applied.

Traditional vacuum sintering conditions similar to spherical bead coatings are utilized in Titanium ASYMMATRIX™ Type 1.

### CHARACTERISTICS

Titanium ASYMMATRIX™ Type 1 is a rough surface, fully interconnected porous coatings. Three layers are typically applied to control the coating thickness. Exemplary SEM and cross-section images are shown in Figures 1 and 2.

### TYPICAL PROPERTIES

The properties of titanium ASYMMATRIX™ Type 1 are detailed below. These properties are typical expected values; the exact values will depend on the individual applications, in part determined by size and geometry of the implants.

TABLE I

ASYMMATRIX™ Pore Characteristics

	Porosity (%)
Porosity (%)	50 - 70
Pore Size (µm)	150 - 300
Coating Thickness	500 - 1000

The actual coating thickness will depend on the part geometry.

Titanium ASYMMATRIX™ Type 1 exceeds 20 MPa requirements for tensile strength and static shear strength of the FDA Guidance Document [1]. Typically, we can exceed tensile strength of 35 MPa (5,000 psi).

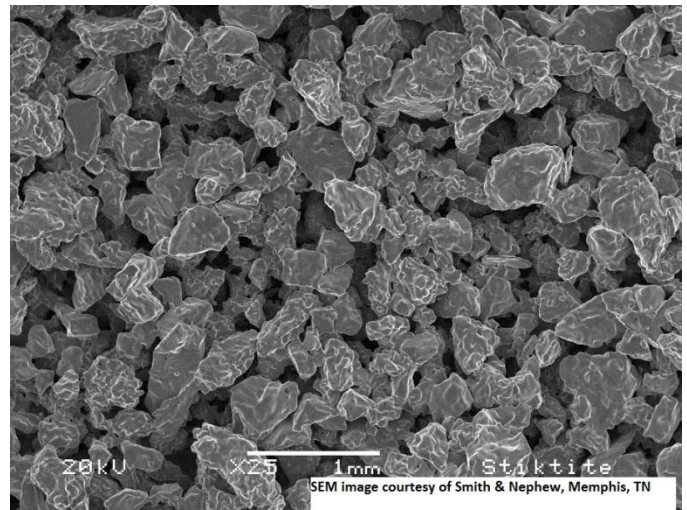


Figure 1: SEM image (courtesy of Smith & Nephew, Inc.) of titanium ASYMMATRIX™.

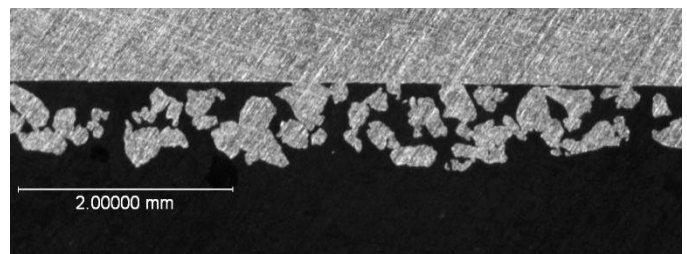


Figure 2: Cross-section image of titanium ASYMMATRIX™.

1. FDA Guidance Document –for testing Orthopedic Implants with Modified Metallic Surfaces Apposing Bone or Bone Cement.