

MEDICAL STANDARD TITANIUM ALLOY CANNULATED BARS (Part 1/2)

GENERAL FEATURES

	UTS MPa / (ksi)		YS MPa / (ksi)		E%		RA %	
	mini	typical	mini	typical	mini	typical	mini	typical
ASTM F136 ISO 5832-3 Ti6Al4VELI	860 (125)	990 (144)	795 (115)	835 (121)	10*	12	25	33
ASTM F1472 ISO 5832-3 Ti6Al4V	930 (135)	-	860 (125)	-	10*	-	25	-
ASTM F1295 ISO 5832-11 Ti6Al7Nb	900 (131)	1000 (145)	800 (116)	830 (120)	10*	11	25	34

* gage length = (5D) to meet ASTM requirement.

MICROGRAPHIC ISO AND ASTM SPECIFICATIONS :

- Free of visible micro inclusion (x 200).
- $\alpha+\beta$ equiaxed structure, according to ETTC2 A1-A9 reference pictures.
- Free of a case (hole surface and OD).
- Free of a network and a platelets.

SAMPLING PROCEDURE :

- Each and every batch is sampled according to ANSI / ASQC Z1.4 1993.

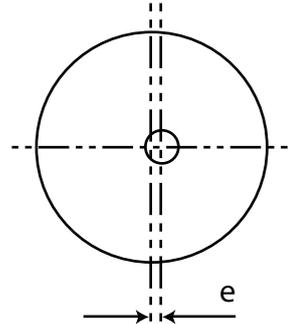
TENSILE TEST :

- Mechanical tests are performed according to ASTM E8/E8M as specified in reference specification (ASTM and ISO).
- Tensile strength, yield strength, elongation, reduction of area, are tested for each and every batch in our laboratory with a 200 KN testing equipment.
- Typical test curve is following.

MEDICAL STANDARD TITANIUM ALLOY CANNULATED BARS (Part 2/2)

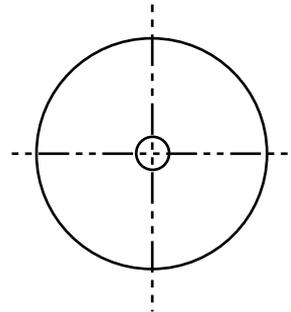
GEOMETRY

Tolerance : $\pm 5\%$ ID
Concentricity : $e < 1.6\%$ OD
ID Roundness : $< 7\%$ ID (IDmax.-IDmin.)
Max. Defects (ID) : $< 0.05\text{mm}$ ($50\mu\text{m}$)



RUGOSITY TESTING (MITUTOYO)

Length	Longitudinal Rz	Longitudinal Ra
5 x 0.8 mm	8.0	1.13
5 x 0.8 mm	11.65	1.71
5 x 0.8 mm	11.17	1.30

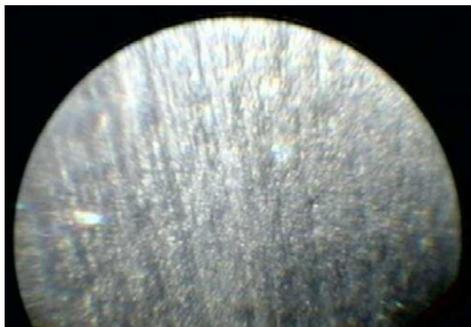


HOLE SURFACE CONDITION

Image Capture (NOESIS)



Fibrosopic (CESYCO)



Roughness Control (MITUTOYO)



BINOCULAR Image x15

