

# Absorv™ XSE Tubing

Bioabsorbable Oriented Tubing

## Overview-

Absorv™ XSE takes our Absorv™ tubing to the next level. Through improved molecular orientation, Absorv™ XSE now possesses enhanced uniformity that leads to more predictable strength and improved laser-cutting efficiency when compared to our previous generation of Absorv™ oriented tubing\*\*, and is ideally suited for load-bearing applications such as bioresorbable vascular scaffolds (BRS).

Zeus Absorv™ XSE oriented tubing is offered in diameters from 0.098" to 0.295" (2.5 mm to 7.5 mm), and in cut lengths up to 8.25" (209.55 mm) with wider development ranges available upon request. This unmatched sizing, combined with uniform wall thickness, tailored absorption profiles, and balanced properties, enables Absorv™ XSE tubing to replace metallic stents with high performance bioresorbable vascular scaffolds (BRS) in a wider variety of procedures spanning cardio, peripheral, ENT, and other related fields.

Using a portfolio of absorbable synthetic polyester polymers, including PLLA, PLC (95L/5C), and PLGA (85L/15G), as well as optimized polymer processing, the mechanical properties and absorption profiles of Absorv™ XSE tubing can be tailored to your specific design requirements.



BIOCOMPATIBLE



RADIAL ORIENTATION



TENSILE STRENGTH



*Expanded sizes and polymer options allow for next generation BRS to be used in a wider variety of procedures.*

## APPLICATIONS

- Bioresorbable scaffolds used in:
  - Cardio
  - Peripheral
  - ENT
  - Neuro

## AVAILABLE PRODUCTS

- Diameters from 0.098" - 0.295" (2.5 mm - 7.5 mm)
- Development diameters from 0.059" - 0.591" (1.5 mm - 15 mm) may be possible
- Wall thicknesses from 0.002" - 0.010" (50 µm - 250 µm)
- Development wall thicknesses up to 400 µm
- Lengths up to 8.25" (210 mm)
- Tailored absorption: rates ranging from 18-36 months
- Expanded polymer options

## KEY PROPERTIES

- More than 2x the strength as non-oriented tubing\*
- Uniform wall thicknesses
- Tailored absorption profiles
- Optimized properties
- Controlled load transfer
- No explantation surgery



# Absorv™ XSE Tubing

All Absorv™ XSE tubing products are produced based on customer specifications. The charts below are a general capability guide.

PLLA Capabilities			
	Outside Diameter†	Wall†	Length
Micron	2500 - 7500 (+/- 25 up to 50)	50 - 250 (+/- 15% to 25%)	Up to 210,000 (+/- 6400)
mm	2.500 - 7.500 (+/- 0.025 up to 0.050)	0.050 - 0.250 (+/- 15% to 25%)	Up to 210 (+/- 6.4)
Inches	0.098 - 0.295 (+/- 0.001 up to 0.002)	0.002 - 0.010 (+/- 15% to 25%)	Up to 8.25 (+/- 0.25)

PLGA/PLC Capabilities			
	Outside Diameter†	Wall†	Length
Micron	6000 - 7500 (+/- 25 up to 50)	130 - 250 (+/- 15% to 20%)	Up to 210,000 (+/- 6400)
mm	6.000 - 7.500 (+/- 0.025 up to 0.050)	0.130 - 0.250 (+/- 15% to 20%)	Up to 210 (+/- 6.4)
Inches	0.236 - 0.295 (+/- 0.0015 up to 0.002)	0.005 - 0.010 (+/- 15% to 20%)	Up to 8.25 (+/- 0.25)

†Size dependent.



Figure 1: 30 scaffolds produced from previous generation Absorv™ oriented tubing vs. 30 scaffolds produced from new Absorv™ XSE oriented tubing. For each scaffold, strut thickness measurements were taken at three axial locations (left end, middle, and right end), wherein the minimum and maximum of four equidistant circumferential strut thickness measurements were recorded. Scaffolds produced from Absorv™ XSE oriented tubing exhibited vastly improved strut thickness uniformity.

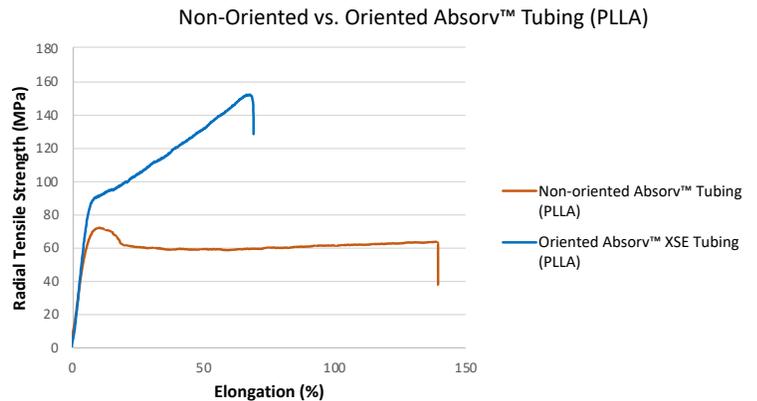


Figure 2: Absorv™ XSE oriented tubing provides more than 2x greater tensile strength over non-oriented Absorv™ tubing\*.

\*Based on testing of a nominal size, oriented vs. non-oriented that are not sterilized, not intended to be a specification, actual testing and economic value is subject to change with material(s), sizes, or product types.

\*\*Based on testing of a nominal size, previous generation vs new generation of oriented tubing that are not sterilized, not intended to be a specification, actual testing and economic value is subject to change with material(s), sizes, or product types.

Disclaimer: Absorv™ tubing utilizes manufacturing aids made from Class VI PTFE monofilament. As a result, embedded PTFE particulates may be present in the product. Zeus does not warrant that Absorv™ tubing is free of PTFE particulates. Customers must assess the suitability and safety of using Absorv™ tubing products for medical devices.

