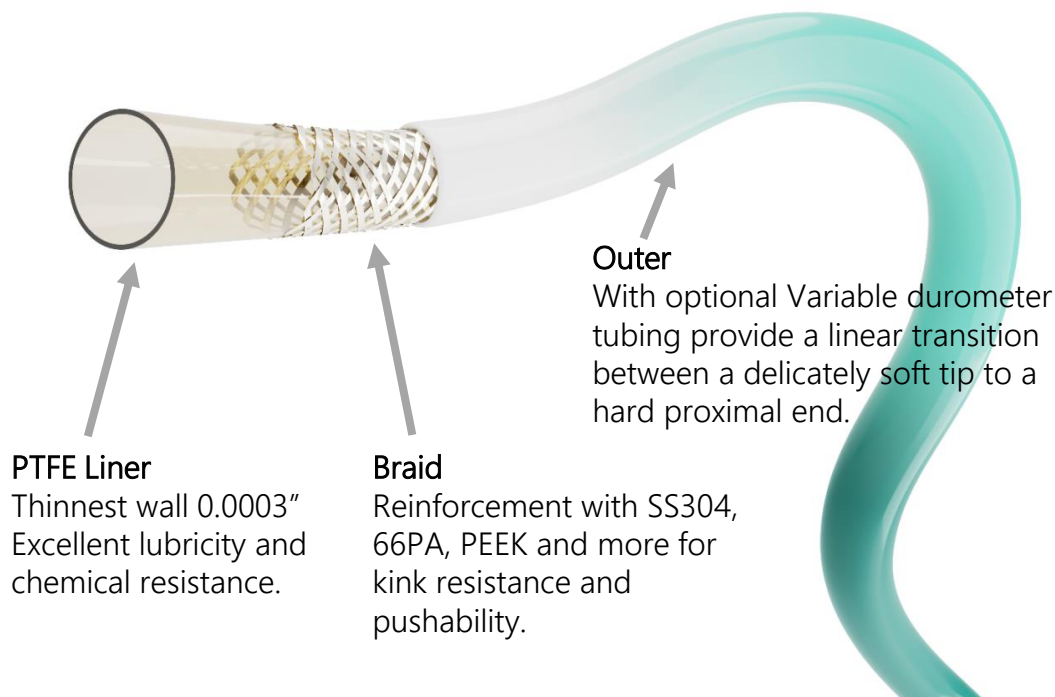


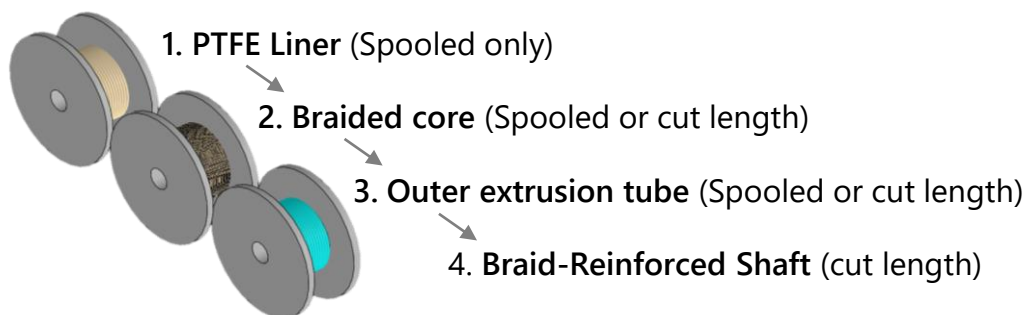
Braid-Reinforced Shaft



With our continuous spooling process ensuring exceptional consistency with tighter tolerance, we can design, develop, and manufacture engineered shaft for a complex catheter. The shaft is designed to balance flexibility, pushability, kink resistance, and more, with our capability in a wide range of materials, including PTFE, Pebax®, PA12, stainless steel, etc.

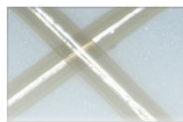
Shaft specifications

Wall thickness :	Min. 0.003" (0.08mm)
Inner diameter :	0.012" - 0.11" (0.3 – 2.8mm)
Outer diameter :	0.018" - 0.14" (0.46 – 3.5mm)
Typical application :	Micro catheter, Delivery catheter
Medical field :	Neuro, Peripheral, Interventional Oncology
Supplied :	Continuous-spooled or cut length, details below



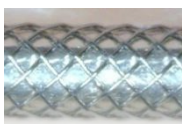
Detail specifications of each product

1. PTFE Liner



- Supplied on spool with silver-plated copper-core mandrel
- Tightly controlled wall tolerance: $\pm 0.00008''$ ($\pm 2\mu\text{m}$)
- Pin hole check on the entire length (Marking at the pin hole .)
- Inside diameter: 0.01" – 0.11" (0.3mm – 2.8mm)
- Optional etched or thermoplastic tie layer for adhesion

2. Braid



1 wire traveling
over 2 wires
then under 2 wires

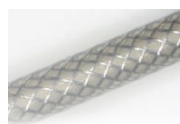


1 wire traveling
over 1 wire
then under 1 wire

Carrier number	16 braid standard: 2 over / 2 under PPI:10-400	8 braid 1 over / 1 under PPI:10-400	48 braid standard: 2 over / 2 under PPI:30-1200	24 braid 1 over / 1 under PPI:30-1200
Material	SS304	Min Limit Round wire 0.00165"/40um Flat wire 0.001"x0.002" / 25um x 50um	1 or 2 wire each carrier	
	Terminal treatment: laser weld or laser cut with marker			
	Tungsten	Min Limit Round wire 0.0005"/10um Flat wire 0.0002"x0.0016" / 7um x40um	1 or 2 wire each carrier	
	Terminal treatment: laser weld or laser cut with marker			
	66PA	Only 0.0007" x 7 wire / 18um x 7 wire	1 or 2 wire each carrier	
	LCP	Only 0.0007" x 6 wire / 18um x 6 wire	1 or 2 wire each carrier	
	PEEK	Min Limit Round wire 0.0020"/50um	Flat wire NA	1 or 2 wire each carrier
PPS	Min Limit Round wire 0.0022"/56um	Flat wire NA	1 or 2 wire each carrier	
PFA	Min Limit Round wire 0.0039"/100um	Flat wire NA	1 or 2 wire each carrier	

3. Outer extrusion tube

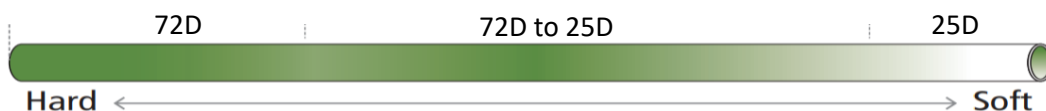
- ID/0.01"-0.11" (0.3-2.8mm)
- OD/0.013"-0.14" (0.33-3.5mm)
- Length/MAX 110" (2800mm)



- Material Nylon-Pebax® Poly Urethane-Pellethane® LLDPE ETFE-C-88AXB®
- Nylon-Vestamid® Poly Urethane-Tecothane® HDPE PFA-P-62XP®
- Nylon-Grilamid® Poly Urethane-TECOFLEX® LDPE EFEP-RP5000®
- Nylon-Rilsamid® Poly Urethane-Carbothane® PVDF-kyner®
- Poly Urethane-Isoplast® PEEK-381G® Etc...

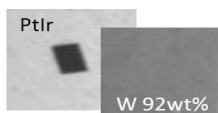
Option1: Variable durometer

With variable flexibility along their length, this tubing may be used where a proximal push and rotation along with a delicately soft tip is desirable to access the treatment area. For the benefit of seamless flexibility and streamlining process, used to replace manually connecting joint tubing



Option2: Radiopaque resin tube

This tubing may be used where tip, marker and distal tube. It shows excellent radiographic visibility comparable to Ptlr.



- as Tip
- as Marker
- As Distal tube

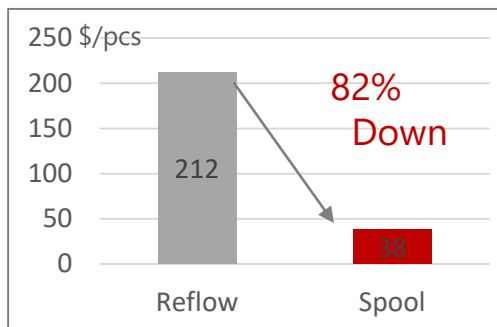
Benefits of continuous spooling process

1. Competitive price with Exceptional consistency

The spooling process minimizes labor and loss of production, maximizes the consistency and performance of your catheter at competitive price. As example, 80% cost saving compare to reflow (one by one process).

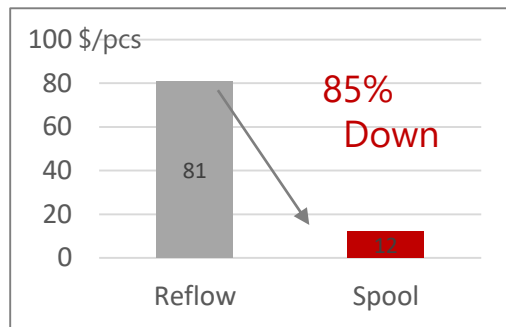
Example1:

2 lumen tube, 1000pcs



Example2:

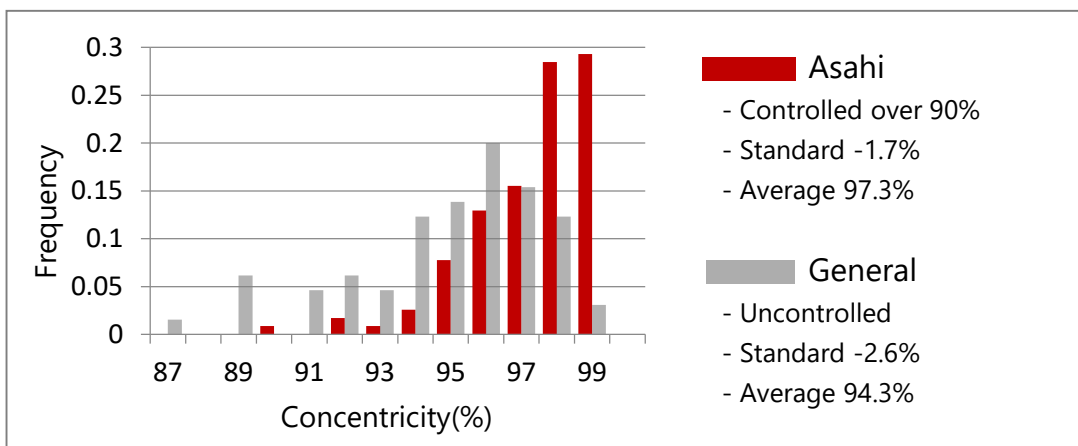
Braid tube, 1000pcs



2. High Concentricity

With high concentricity (more than 90%), enables the catheter to handle high pressures consistently and effectively.

Example: Concentricity of 3 layer tube, Asahi vs General tubing (internal investigation)



3. Tighter tolerance

- PTFE Liner: Tighter tolerance $\pm 0.00008''$ (2 μ m), Ultrathin wall (0.0003" - 0.0005")
- Outer tube: OD tolerance $\pm 0.0004''$ (10 μ m), Concentricity 90% or more