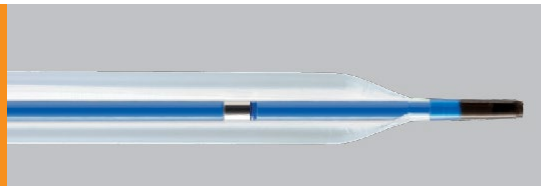
MT-LWA
Modified Polyolefin Heat Shrink Tubing

Applications

- Process aid for balloon & joint bonding
- Process aid for catheter shaft reflow



PROFILE

- Shrink ratio <_ 4:1
- Full recovery at 110oC (230oF) minimum
- Manufactured to ISO 10993 standards
- Custom sizing, finishing options available
- Radiopacity can be customized
- Adhesive-layer option available
- Translucent for high optical clarity
- Color blending option available

ABOUT

- MT-LWA is a crosslinked modified polyolefin heat shrink tubing designed for use as a process aid in minimally invasive applications
- Its homogenous structure (properties evenly distributed) contributes to its consistency and high performance, thereby reducing the likelihood that flaws, defects, pinholes, seams, cracks or inclusions will occur after the product is fully recovered at the temperature stated above.
- MT-LWA is sometimes shipped in the air-spooled condition which helps maintain tubing shape and form. Use of only part of the air-spooled MT-LWA reel may result in loss of air pressure and shape to the remaining product on the reel, which could cause the remaining product to kink or twist. Due to the pliable nature of the product, full recovery of the MT-LWA at the temperature set forth above will remove twists and kinks so the product can be used.
- MT-LWA offers customizable compressions strengths, shrink ratios ≤ 4:1, is peelable with axial tear propagation and you can remove it while its warm, making it an excellent choice for reflowing catheter shafts when MT-FEP isn't suitable.

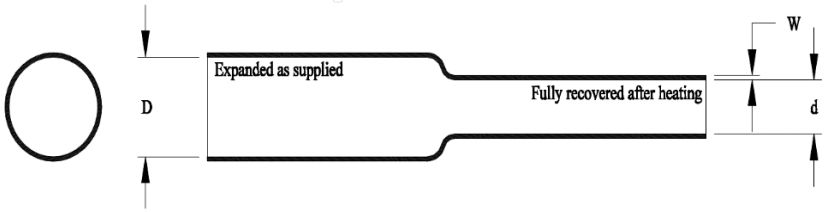


TABLE 1: 2:1 EXPANSION RATIO DIMENSIONS

Standard Sizes	As Supplied		Recovered			
	Inside Diameter Minimum (D)		Inside Diameter Maximum (d)		Wall Thickness (W)	
Size	in.	mm.	in.	mm.	in.	mm.
1/32	0.040 ± 0.005	*1.02 ± 0.13*	0.013 ± 0.002	*0.33 ± 0.05*	0.010 ± 0.002	*0.25 ± 0.05*
3/64	0.055 ± 0.005	*1.40 ± 0.13*	0.020 ± 0.003	*0.51 ± 0.08*	0.012 ± 0.002	*0.31 ± 0.05*
1/16	0.072 ± 0.005	*1.83 ± 0.13*	0.027 ± 0.004	*0.69 ± 0.10*	0.017 ± 0.003	*0.43 ± 0.08*
3/32	0.107 ± 0.008	*2.72 ± 0.20*	0.042 ± 0.004	*1.07 ± 0.10*	0.020 ± 0.003	*0.51 ± 0.08*
1/8	0.140 ± 0.010	*3.56 ± 0.25*	0.057 ± 0.005	*1.45 ± 0.13*	0.020 ± 0.003	*0.51 ± 0.08*
3/16	0.205 ± 0.010	*5.21 ± 0.25*	0.086 ± 0.007	*2.18 ± 0.18*	0.020 ± 0.003	*0.51 ± 0.08*
1/4	0.275 ± 0.015	*6.99 ± 0.38*	0.117 ± 0.008	*2.97 ± 0.20*	0.025 ± 0.003	*0.64 ± 0.08*
3/8	0.415 ± 0.020	*10.54 ± 0.51*	0.171 ± 0.016	*4.34 ± 0.41*	0.025 ± 0.003	*0.64 ± 0.08*

TABLE 2: 3:1 EXPANSION RATIO DIMENSIONS (MIN./MAX)

Standard Sizes	As Supplied		Recovered			
	Inside Diameter Minimum (D)		Inside Diameter Maximum (d)		Wall Thickness (W)	
Size	in.	mm.	in.	mm.	in.	mm.
.032	0.032	*0.81*	0.011	*0.28*	0.010 ± 0.002	*0.25 ± 0.05*
.047	0.053	*1.35*	0.013	*0.33*	0.012 ± 0.002	*0.31 ± 0.05*
.063	0.063	*1.60*	0.021	*0.53*	0.016 ± 0.002	*0.41 ± 0.05*
.078	0.078	*1.98*	0.025	*0.64*	0.016 ± 0.002	*0.41 ± 0.05*
.094	0.094	*2.39*	0.031	*0.79*	0.020 ± 0.003	*0.51 ± 0.08*
.110	0.110	*2.79*	0.034	*0.86*	0.020 ± 0.003	*0.51 ± 0.08*
.125	0.125	*3.18*	0.042	*1.07*	0.020 ± 0.003	*0.51 ± 0.08*
.188	0.188	*4.78*	0.063	*1.60*	0.020 ± 0.003	*0.51 ± 0.08*
.250	0.250	*6.35*	0.083	*2.11*	0.025 ± 0.003	*0.64 ± 0.08*
.375	0.375	*9.53*	0.125	*3.18*	0.025 ± 0.003	*0.64 ± 0.08*

TABLE 3: PROPERTIES

Property	Unit	Requirement	Test Method
Physical			
Dimensions*	inches *(mm)*	In accordance with Table 1	
Longitudinal change*	percent	+0, -10 maximum	ASTM D 2671
Concentricity as supplied*	percent	70 minimum (2:1 Exp. ratio) 60 minimum (3:1 Exp. ratio)	ASTM D 2671
Tensile strength*	psi *(MPa)*	1500 minimum *(10:3)*	ASTM D 2671, 20"/minute
Ultimate elongation*	percent	200 minimum	
Secant modulus* (expanded)	psi *(MPa)*	2.5 x 10^4 maximum *(172)*	ASTM D 2671
Heat resistance 168 hours at 175°C (347°F)			
Followed by test for: Ultimate elongation	percent	100 minimum	ASTM D 2671, 20"/minute
Electrical Dielectric strength	volts/mil *(volts/mm)*	500 minimum *(19.7)*	ASTM D 2671
Dielectric withstand 3000V, 60Hz	sec	60 minimum	ASTM D 2671
Chemical Fluid resistance 24 hours at 23 ± 3°C (77 ± 5°F) Isopropyl alcohol 5% saline solution Disinfectant			ASTM D 2671
Followed by tests for: Dielectric strength	volts/mil *(volts/mm)*	400 minimum *(15.7)*	
Tensile strength	psi *(MPa)*	1000 minimum *(6.9)*	ASTM D 2671
Heavy metals analysis Cadmium Mercury Lead Bismuth Antimony	ppm	1 maximum (total of all metals)	USP XXII Physiochemical tests-plastic (Note 1)

*Denotes lot acceptance test

Note 1: Sample preparation and extraction is per USP XXII. Metals analysis may be colorimetric as described in USP XXII or by equivalent quantitative analytical method.

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AMERICAS
+1 866 251 3352

EMEA
+49 6151 607 1999

ASIA
China +86 400 820 6015
Japan +81 44 844 8041
Korea +82 2 3415 4506
Singapore +86 512 6255 4384

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