Thermofit[®] Tubing Specification Control Drawing

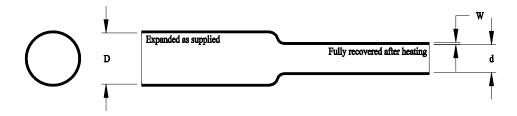
No: **MT2000**

Rev: B

Date: May 14, 1999

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Altera[™] MT2000 Modified, Medical Grade, Polyolefin, Heat - Shrinkable Tubing



This specification covers the requirements for one type of single wall, electrical insulating, extruded tubing whose diameter will reduce to a predetermined size upon application of heat in excess of 140°C (284°F).

The tubing is fabricated from modified polyolefin crosslinked by irradiation. It shall be homogenous and essentially free from flaws, defects, pinholes, seams, cracks or inclusions.

The tubing is fabricated from materials which meet the requirements of U.S. Pharmacopeia Class VI Plastics. Color shall be black or clear unless otherwise specified.

Table 1: <u>Dimensions</u>

	As Su	pplied	Recovered							
Size	Inside D Minim	Piameter um (D)	Inside Diameter Wall Thickness(Inch Maximum (d) (V				es, <i>Mill</i> V)			
	mm.	in.	mm.	in.	Minimum		Maximum		Nominal	
1mm	1.0	.040	0.45	.018	.008	0.20	.012	0.30	.010	.25
2mm	2.0	.080	0.80	.032	.008	0.20	.012	0.30	.010	.25
3mm	3.0	.120	1.20	.048	.008	0.20	.012	0.30	.010	.25
6mm	6.0	.240	2.4	.096	.008	0.20	.012	0.30	.010	.25
10mm	10.0	.400	4.0	.160	.012	0.30	.016	0.41	.014	.36

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Table 2: Properties

Property	Unit	Requirement	Test Method		
PHYSICAL					
* Dimensions	Inches (mm)	In accordance with Table 1			
* Longitudinal Change	Percent	0, -10	ASTM D 2671		
* Concentricity as supplied	Percent	60 minimum	ASTM D 2671		
Tensile Strength	PSI (MPa)	3000 minimum <i>(20.7)</i>	ASTM D 2671,		
Ultimate Elongation	Percent	200 minimum	2"/minute		
Secant Modulus	PSI (MPa)	5.0 x 10 ⁴ minimum <i>(344)</i>	ASTM D 2671		
Heat Resistance 168 hours at 125°C (257 °F) Followed by test for:	Powert	200 minimum	ASTM D 2671,		
Ultimate Elongation	Percent	200 minimum	2"/minute		
ELECTRICAL Dielectric Strength	Volts/mil (volts/mm)	1000 minimum (39.36)	ASTM D 2671		
Dielectric Withstand	,				
3000V, 60 Hz	sec	60 minimum	ASTM D 2671		
CHEMICAL					
Fluid Resistance			ASTM D 2671		
24 hours at 23 ± 3°C (77 ± 5°F) Isopropyl Alcohol 5% Saline Solution Cidex**					
Followed by tests for:					
Dielectric Strength	Volts/mil (volts/mm)	1000 minimum (39.36)	ASTM D 2671		
Tensile Strength	PSI (MPa)	3000 minimum (20.7)	ASTM D 2671		
Heavy Metals Analysis Cadmium Mercury Lead Bismuth Antimony	ppm	1 maximum (total of all metals)	USP XXII Physicochemical Tests-Plastics (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.

Raychem reserves the right to amend this specification at any time. Users should evaluate the suitability of the product for their application.

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