

DWFR
Highly Flame-Retardant, Dual Wall Polyolefin Heat-Shrinkable Tubing

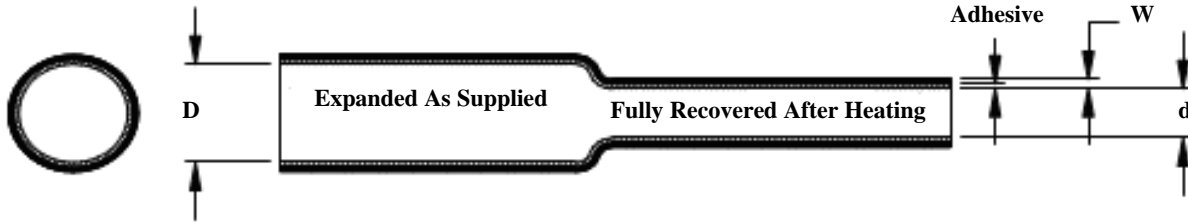


Table 1: Dimensions: mm (in)


Shrink Ratio	Size	Minimum Inside Diameter as supplied (D) mm (in)	Maximum Inside Diameter after recovery (d) mm (in)	Total Wall Thickness after recovery (W) mm (in)	Minimum Inner Meltable Wall Thickness after recovery mm (in)
3:1	3/1	3.0 (0.118)	1.0 (0.039)	1.12 ± 0.25 (.044 ± .010)	0.25 (0.010)
	6/2	6.0 (0.236)	2.0 (0.079)	1.14 ± 0.25 (.045 ± .010)	0.25 (0.010)
	9/3	9.0 (0.354)	3.0 (0.118)	1.40 ± 0.25 (.055 ± .010)	0.56 (0.022)
	12/4	12.0 (0.472)	4.0 (0.157)	1.78 ± 0.36 (.070 ± .014)	0.58 (0.023)
	19/6	19.0 (0.748)	6.0 (0.236)	2.25 ± 0.50 (.088 ± .020)	0.58 (0.023)
	24/8	24.0 (0.945)	8.0 (0.315)	2.54 ± 0.50 (.100 ± .020)	0.79 (0.031)
	40/13	40.0 (1.575)	13.0 (0.512)	2.54 ± 0.50 (.100 ± .020)	0.86 (0.034)
4:1	4/1	4.0 (0.157)	1.0 (0.039)	1.12 ± 0.25 (.044 ± .010)	0.25 (0.010)
	8/2	8.0 (0.315)	2.0 (0.079)	1.14 ± 0.25 (.045 ± .010)	0.25 (0.010)
	12/3	12.0 (0.472)	3.0 (0.118)	1.40 ± 0.25 (.055 ± .010)	0.56 (0.022)
	16/4	16.0 (0.630)	4.0 (0.157)	1.78 ± 0.36 (.070 ± .014)	0.58 (0.023)
	24/6	24.0 (0.945)	6.0 (0.236)	2.25 ± 0.50 (.088 ± .020)	0.58 (0.023)
	32/8	32.0 (1.260)	8.0 (0.315)	2.54 ± 0.50 (.100 ± .020)	0.79 (0.031)
	52/13	52.0 (2.047)	13.0 (0.512)	2.54 ± 0.50 (.100 ± .020)	0.86 (0.034)

Material:

The tubing shall be fabricated from a modified irradiated polyolefin compounded to produce a homogeneous, uniform product whose outside surface is essentially free from flaws, defects, pinholes, seams, cracks, or inclusions. The interior wall is coated with a thermoplastic adhesive. The standard color is black.

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Customer Drawing

		Tubing TE CONNECTIVITY 300 Constitution Drive Menlo Park, CA 94025 USA		Title: DWFR Highly Flame-Retardant, Dual Wall Polyolefin Heat-Shrinkable Tubing	
TE Connectivity reserves the right to amend this drawing at any time. Users should evaluate the suitability of the product for their application			Document No : <p align="center">DWFR</p>		
Cage Code: 06090	Scale: None	Size: A	Rev. Date: 28-January-16	Rev. E	Sheet: 1 of 2

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Properties:

PROPERTY	UNIT	REQUIREMENT	TEST METHOD
PHYSICAL			
*Dimensions	mm (<i>in</i>)	In accordance with Table 1	ASTM D 2671
Longitudinal Change	Percent	0, -15%	ASTM D 2671
*Tensile Strength	psi (<i>MPa</i>)	1500 minimum (<i>10.3</i>)	ASTM D 2671
*Ultimate Elongation	Percent	200 minimum	
Secant Modulus (Expanded)	psi (<i>MPa</i>)	2.5 x 10 ⁴ maximum (<i>172</i>)	ASTM D 882, 2% strain
Cold Bend Test at -30 ± 1.0°C (-22 ± 1.8°F) for 1 hour	---	No cracking	UL 224, section 5.9
*Heat Shock 4 hours at 250.0 ± 1.0°C (482 ± 1.8°F)	---	No dripping, flowing or cracking of outer wall	UL 224, section 5.8
Heat Resistance 168 hours at 158.0°C ± 1.0°C (316.4 ± 1.8°F) Followed by test for: - Tensile Strength - Elongation	psi (<i>MPa</i>) Percent	Min. 70% of original 100% minimum	UL 224
Sealing Efficiency		No openings on reheat	AMS-DTL 23053/4
ELECTRICAL			
Dielectric Strength	Volts/mil (<i>volts/mm</i>)	300 minimum (<i>11,811 min</i>) on dual wall specimen	ASTM D 2671
Volume Resistivity	ohm-cm	10 ¹⁴ minimum on dual wall specimen	ASTM D 2671
CHEMICAL			
Corrosion of the bare copper 168 hours at 158.0°C ± 1.0°C (316.4 ± 1.8°F)	---	No pitting or blackening of copper	UL 224, section 5.16
Copper stability 168 hours at 158.0°C ± 1.0°C (316.4 ± 1.8°F) Followed by test for: - Elongation	Percent	Show no sign of degradation 100% minimum	UL 224, section 5.17
Flammability	---	Self-extinguishing within 1 minute, 25% maximum flag burn and 0% cotton burn	UL 224, VW-1
Water Absorption 24 hours at 23°C (73°F)	Percent	0.5 maximum	ASTM D 2671

* Denotes Lot Acceptance Test

Customer Drawing

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