

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

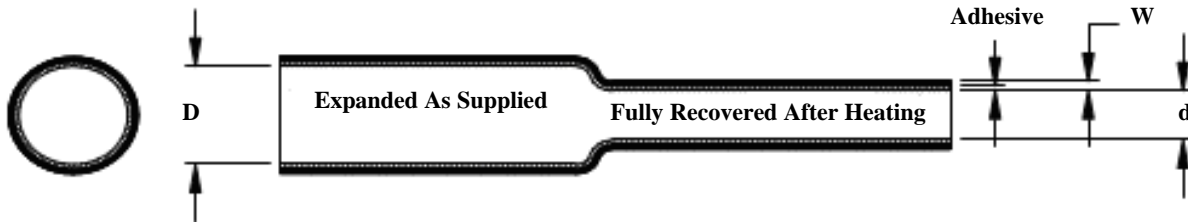


Table 1: Dimensions: mm (*in*)


| Shrink Ratio | Size | Minimum Inside Diameter as supplied (D) mm (<i>in</i>) | Maximum Inside Diameter after recovery (d) mm (<i>in</i>) | Total Wall Thickness after recovery (W) mm (<i>in</i>) | Minimum Inner Meltable Wall Thickness after recovery mm (<i>in</i>) |
|--------------|-------|--|---|--|---|
| 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 : <div style="text-align: center; font-weight: bold; font-size: 1.2em;">DWFR</div> | |
| 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 rehear | 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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|-----------------------------|------------|-----------------------------|------------------|
| Rev. Date: 28-January-16 | Rev.: E | Document No. DWFR | Sheet: 2 of 2 |
|-----------------------------|------------|-----------------------------|------------------|

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