

High-performance, thin-wall, flexible, fluoropolymer heat-shrinkable tubing

RNF-150 is a highly flame-resistant thin-wall heat-shrinkable tubing that has excellent durability. It is manufactured from a modified fluoropolymer whose properties include toughness, chemical resistance, and high-temperature performance.

A very thin wall gives RNF-150 excellent flexibility.

Applications include insulation, jacketing, and identification of wire bundles; light-duty harnesses; insulation and protection of terminals and wire connections; and packaging

of components. RNF-150 is not recommended for use in direct contact with ketones.

RNF-150 is UL-recognized at 150°C, 600 V, with a UL VW-1 flame retardance rating and meets the requirements of AMS-DTL-23053/18, Class 2.

Temperature rating

| | |
|---|----------------|
| Full recovery temperature: | 150°C |
| Continuous operating temperature: | -55°C to 155°C |
| Recommended maximum temperature for use as a primary insulator: | 135°C |

Specifications*

| Type | Raychem | Military | UL |
|---------|---------|---------------------------|-------------|
| RNF-150 | RT-370 | AMS-DTL-23053/18, Class 2 | E85381 VW-1 |

*When ordering, always specify latest issue.

Dimensions (millimeters/inches)



| Size | Inside diameter | | Wall thickness | | Weight as supplied (max.) | |
|------|-------------------------------------|--|-----------------------------------|------------------------------|---------------------------|---------------|
| | D (min.) Expanded as supplied | d (max.) Recovered after heating | W Recovered after heating** | Recovered after heating** | lb./ 100 ft. | kg./ 100 m |
| 3/64 | 1.2 0.046 | 0.6 0.023 | 0.25 ± 0.05 | 0.010 ± 0.002 | 0.10 | 0.15 |
| 1/16 | 1.6 0.063 | 0.8 0.031 | 0.25 ± 0.05 | 0.010 ± 0.002 | 0.13 | 0.19 |
| 3/32 | 2.4 0.093 | 1.2 0.046 | 0.25 ± 0.05 | 0.010 ± 0.002 | 0.17 | 0.25 |
| 1/8 | 3.2 0.125 | 1.6 0.062 | 0.25 ± 0.05 | 0.010 ± 0.002 | 0.22 | 0.33 |
| 3/16 | 4.8 0.187 | 2.4 0.093 | 0.25 ± 0.05 | 0.010 ± 0.002 | 0.31 | 0.46 |
| 1/4 | 6.4 0.250 | 3.2 0.125 | 0.30 ± 0.08 | 0.012 ± 0.003 | 0.40 | 0.60 |
| 3/8 | 9.5 0.375 | 4.8 0.187 | 0.30 ± 0.08 | 0.012 ± 0.003 | 0.73 | 1.09 |
| 1/2 | 12.7 0.500 | 6.4 0.250 | 0.30 ± 0.08 | 0.012 ± 0.003 | 0.96 | 1.43 |
| 3/4 | 19.1 0.750 | 9.5 0.375 | 0.43 ± 0.08 | 0.017 ± 0.003 | 1.92 | 2.85 |
| 1 | 25.4 1.000 | 12.7 0.500 | 0.48 ± 0.08 | 0.019 ± 0.003 | 2.78 | 4.14 |

**Wall thickness will be less if tubing recovery is restricted during shrinkage.

Ordering information

| | |
|----------------------|--|
| Colors | Standard Black Nonstandard White |
| Size selection | Always order the largest size that will shrink snugly over the component being covered. Special order sizes may be made available upon request. |
| Standard packaging | On spools |
| Ordering description | Specify product name, size, and color; for example, RNF-150 1/4-0 (0=Black). |

Specification values

| | Property | Unit | Requirement | Method of test |
|------------------------|---|---------------------------------------|---|--|
| Physical | Dimensions | mm (<i>inches</i>) | See reverse | ASTM D 2671 |
| | Longitudinal change | percent | +0, -10 | ASTM D 2671 |
| | Concentricity as supplied | percent | 70% minimum | ASTM D 2671 |
| | Weight per length as supplied | lb./100 ft. (<i>kg./100 m</i>) max. | See reverse | See note below |
| | Recovery angle | degrees | 5 maximum | See note below |
| | Tensile strength | psi (<i>Mpa</i>) | 4000 (<i>27.6</i>) minimum | ASTM D 2671 |
| | Ultimate elongation | percent | 300 minimum | ASTM D 2671 |
| | Secant modulus (as supplied) | psi (<i>Mpa</i>) | 25,000 to 100,000 (<i>172 to 690</i>) | ASTM D 2671 |
| | Low-temperature flexibility (4 hours at -55°C/-67°F) | | No cracking | AMS-DTL-23053 |
| | Heat shock (4 hours at 250°C/482°F) | | No dripping, flowing, or cracking | ASTM D 2671 |
| | Dynamic cut-through (135°C/275°F) | lb. (<i>kg.</i>) | 5 (<i>2.3</i>) minimum | ASTM D 3032 See note below |
| | Heat resistance (336 hours at 225°C/437°F) | | | ASTM D 2671 |
| | Followed by test for: | | | |
| | Ultimate Elongation | percent | 250 minimum | ASTM D 2671 |
| Color | | MIL-STD-104, Class I | MIL-STD-104 | |
| Electrical | Dielectric strength | volts/mil (<i>kV/mm</i>) | 500 (<i>19.7</i>) minimum | ASTM D 2671 |
| | Volume resistivity | ohm-cm | 10 ¹¹ minimum | ASTM D 2671 |
| Chemical | Corrosive effect | | Noncorrosive | ASTM D 2671 |
| | Copper mirror corrosion (16 hours at 160°C/320°F) | | Copper removal 5% maximum | ASTM D 2671 Procedure A |
| | Copper contact corrosion (16 hours at 175°C/347°F) | | No blackening or pitting of copper | ASTM D 2671 Procedure B |
| | Copper stability (168 hours at 180°C/356°F) | | No brittleness, glazing, or severe discoloration of tubing. No pitting or blackening of copper. | ASTM D 2671 Procedure B |
| | Followed by test for: | | | |
| | Ultimate elongation | percent | 250 minimum | ASTM D 2671 |
| | Flammability | | 25% maximum flag burn; no burning of cotton; no flaming or glowing longer than 60 seconds | UL 224, VW-1 ASTM D 2671 Procedure C |
| | Fungus resistance | | | ISO 846 Method B |
| | Followed by tests for: | | | |
| | Tensile strength | psi (<i>Mpa</i>) | 4000 (<i>27.6</i>) minimum | ASTM D 2671 |
| | Ultimate elongation | percent | 300 minimum | ASTM D 2671 |
| | Dielectric strength | volts/mil (<i>kV/mm</i>) | 500 (<i>19.7</i>) minimum | ASTM D 2671 |
| | Water absorption (24 hours at 23°C/73°F) | percent | 0.5 maximum | ASTM D 2671 |
| | Fluid resistance (24 hours at 50°C/122°F) in: JP-8 fuel (MIL-T-5624) Hydraulic fluid (MIL-H-5606) Aviation gasoline 100/300 (MIL-G-5572) Water Lubricating oil (MIL-L-23699) | | | ASTM D 2671 |
| Followed by tests for: | | | | |
| Dielectric strength | volts/mil (<i>kV/mm</i>) | 400 (<i>15.8</i>) minimum | ASTM D 2671 | |
| Tensile strength | psi (<i>Mpa</i>) | 2000 (<i>13.8</i>) minimum | ASTM D 2671 | |

Note: Consult RT-370 for specific details about test procedures.

Raychem is a trademark of Tyco Electronics Corporation.

Users should independently evaluate the suitability of the product for their application.

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