

## 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

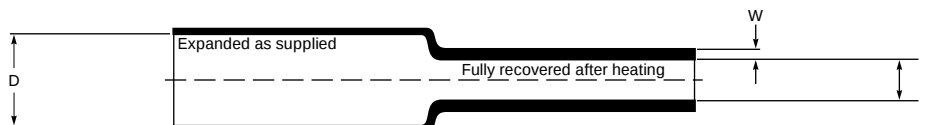
|                                                                 |                |
|-----------------------------------------------------------------|----------------|
| Full recovery temperature:                                      | 150°C          |
| Continuous operating temperature:                               | -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.)<br>Expanded<br>as supplied | d (max.)<br>Recovered<br>after heating | W<br>Recovered<br>after heating** |  | lb./<br>100 ft.           | kg./<br>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<br>Nonstandard                                                                                                                            | Black<br>White |
| Size selection       | Always order the largest size that will shrink snugly over the component being covered.<br>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 (27.6) 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 (172 to 690)                                                                        | ASTM D 2671                                |
|            | Low-temperature flexibility<br>(4 hours at -55°C/-67°F)                                                                                                                                           |                                       | No cracking                                                                                           | AMS-DTL-23053                              |
|            | Heat shock<br>(4 hours at 250°C/482°F)                                                                                                                                                            |                                       | No dripping, flowing,<br>or cracking                                                                  | ASTM D 2671                                |
|            | Dynamic cut-through<br>(135°C/275°F)                                                                                                                                                              | lb. ( <i>kg.</i> )                    | 5 (2.3) minimum                                                                                       | ASTM D 3032<br>See note below              |
|            | Heat resistance<br>(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 (19.7) minimum                                                                                    | ASTM D 2671                                |
|            | Volume resistivity                                                                                                                                                                                | ohm-cm                                | 10 <sup>11</sup> minimum                                                                              | ASTM D 2671                                |
| Chemical   | Corrosive effect                                                                                                                                                                                  |                                       | Noncorrosive                                                                                          | ASTM D 2671                                |
|            | Copper mirror corrosion<br>(16 hours at 160°C/320°F)                                                                                                                                              |                                       | Copper removal<br>5% maximum                                                                          | ASTM D 2671<br>Procedure A                 |
|            | Copper contact corrosion<br>(16 hours at 175°C/347°F)                                                                                                                                             |                                       | No blackening or pitting<br>of copper                                                                 | ASTM D 2671<br>Procedure B                 |
|            | Copper stability<br>(168 hours at 180°C/356°F)                                                                                                                                                    |                                       | No brittleness, glazing, or severe<br>discoloration of tubing. No pitting<br>or blackening of copper. | ASTM D 2671<br>Procedure B                 |
|            | Followed by test for:                                                                                                                                                                             |                                       |                                                                                                       |                                            |
|            | Ultimate elongation                                                                                                                                                                               | percent                               | 250 minimum                                                                                           | ASTM D 2671                                |
|            | Flammability                                                                                                                                                                                      |                                       | 25% maximum flag burn; no<br>burning of cotton; no flaming or<br>glowing longer than 60 seconds       | UL 224, VW-1<br>ASTM D 2671<br>Procedure C |
|            | Fungus resistance                                                                                                                                                                                 |                                       |                                                                                                       | ISO 846<br>Method B                        |
|            | Followed by tests for:                                                                                                                                                                            |                                       |                                                                                                       |                                            |
|            | Tensile strength                                                                                                                                                                                  | psi ( <i>Mpa</i> )                    | 4000 (27.6) minimum                                                                                   | ASTM D 2671                                |
|            | Ultimate elongation                                                                                                                                                                               | percent                               | 300 minimum                                                                                           | ASTM D 2671                                |
|            | Dielectric strength                                                                                                                                                                               | volts/mil ( <i>kV/mm</i> )            | 500 (19.7) minimum                                                                                    | ASTM D 2671                                |
|            | Water absorption<br>(24 hours at 23°C/73°F)                                                                                                                                                       | percent                               | 0.5 maximum                                                                                           | ASTM D 2671                                |
|            | Fluid resistance<br>(24 hours at 50°C/122°F) in:<br>JP-8 fuel (MIL-T-5624)<br>Hydraulic fluid (MIL-H-5606)<br>Aviation gasoline 100/300<br>(MIL-G-5572)<br>Water<br>Lubricating oil (MIL-L-23699) |                                       |                                                                                                       | ASTM D 2671                                |
|            | Followed by tests for:                                                                                                                                                                            |                                       |                                                                                                       |                                            |
|            | Dielectric strength                                                                                                                                                                               | volts/mil ( <i>kV/mm</i> )            | 400 (15.8) minimum                                                                                    | ASTM D 2671                                |
|            | Tensile strength                                                                                                                                                                                  | psi ( <i>Mpa</i> )                    | 2000 (13.8) 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.**

### Tyco Electronics Corporation

300 Constitution Drive  
Menlo Park, CA 94025-1164  
USA  
Tel: (800) 926-2425 (US & Canada)  
Tel: +1 (650) 361-3860 (All other countries)

Faraday Road  
Dorcan, Swindon, SN3 5HH  
United Kingdom  
Tel: +44 1793 528171

3816 Noborito, Tama-ku  
Kawasaki, Kanagawa 214-8533  
Japan  
Tel: +81 44 900 5102

Asia Pacific Headquarters  
26 Ang Mo Kio, Industrial Park 2  
Singapore 569507  
Tel: +65 4866 151

All information, including illustrations, is believed to be reliable. Users, however, should independently evaluate the suitability of each product for their application. Tyco Electronics Corporation makes no warranties as to the accuracy or completeness of the information, and disclaims any liability regarding its use. Tyco Electronics Corporation's only obligations are those in the Standard Terms and Conditions of Sale for these products and in no case will Tyco Electronics Corporation be liable for any incidental, indirect, or consequential damages arising from the sale, resale, use, or misuse of the product. Tyco Electronics Corporation's Specifications are subject to change without notice. In addition, Tyco Electronics Corporation reserves the right to make changes in materials or processing without notification to the Buyer which do not affect compliance with any applicable specification.

**For more information about this product visit [www.tycoelectronics.com](http://www.tycoelectronics.com)**

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9