

# Raychem

- Outstanding all round performance
- Excellent physical and electrical performance
- Good chemical and solvent resistance
- Flexible

## RNF-100

A premium grade flame-retarded polyolefin heat-shrinkable tubing

RNF-100 is a premium grade polyolefin based heat-shrinkable tubing with an outstanding overall balance of properties. The product has a wide range of both military and industrial

approvals. RNF-100 tubing possesses a unique blend of physical, chemical and electrical properties and is suitable for a wide range of applications.

Used extensively in military applications for lightweight harness jackets, insulation, colour coding, identification, protection against fluids and provides mechanical strength.

### Temperature rating

|                                    |                 |
|------------------------------------|-----------------|
| Operating temperature range:       | -55°C to +135°C |
| Minimum shrink temperature:        | +95°C           |
| Minimum full recovery temperature: | +121°C          |

### Ordering Information



| Inside diameter              |                                 | Wall thickness                  | Standard package      |                |  |
|------------------------------|---------------------------------|---------------------------------|-----------------------|----------------|--|
| D (min) Expanded as supplied | d (max) Recovered after heating | W (nom) Recovered after heating | 1.2 m Length quantity | Spool quantity | Ordering description                               |
| mm                           | mm                              | mm                              | m                     | m              |  |
| 1.2                          | 0.6                             | 0.45                            | 60                    | 300            | RNF-100- <sup>3</sup> / <sub>64</sub> -colour code |
| 1.6                          | 0.8                             | 0.45                            | 60                    | 300            | RNF-100- <sup>1</sup> / <sub>16</sub> -colour code |
| 2.4                          | 1.2                             | 0.50                            | 60                    | 150            | RNF-100- <sup>3</sup> / <sub>32</sub> -colour code |
| 3.2                          | 1.6                             | 0.50                            | 60                    | 150            | RNF-100- <sup>1</sup> / <sub>8</sub> -colour code  |
| 4.8                          | 2.4                             | 0.50                            | 60                    | 150            | RNF-100- <sup>3</sup> / <sub>16</sub> -colour code |
| 6.4                          | 3.2                             | 0.65                            | 36                    | 75             | RNF-100- <sup>1</sup> / <sub>4</sub> -colour code  |
| 9.5                          | 4.8                             | 0.65                            | 36                    | 75             | RNF-100- <sup>3</sup> / <sub>8</sub> -colour code  |
| 12.7                         | 6.4                             | 0.65                            | 36                    | 75             | RNF-100- <sup>1</sup> / <sub>2</sub> -colour code  |
| 19.0                         | 9.5                             | 0.75                            | 36                    | 75             | RNF-100- <sup>3</sup> / <sub>4</sub> -colour code  |
| 25.4                         | 12.7                            | 0.90                            | 18                    | 30             | RNF-100-1-colour code                              |
| 31.0                         | 16.0                            | 0.95                            | 18                    | 30             | RNF-100-1 <sup>1</sup> / <sub>4</sub> -colour code |
| 38.0                         | 19.0                            | 1.00                            | 18                    | 30             | RNF-100-1 <sup>1</sup> / <sub>2</sub> -colour code |
| 51.0                         | 25.4                            | 1.15                            | 12                    | 30             | RNF-100-2-colour code                              |
| 76.0                         | 38.0                            | 1.25                            | 6                     | 15             | RNF-100-3-colour code                              |
| 102.0                        | 51.0                            | 1.40                            | 6                     | 15             | RNF-100-4-colour code                              |
| 127.0                        | 63.5                            | 1.52                            | 6                     | 30             | RNF-100-5-colour code                              |

### Standard colours

| Colour | Clear | Black | Red | Yellow | Green | Blue | White |
|--------|-------|-------|-----|--------|-------|------|-------|
| Code   | X     | 0     | 2   | 4      | 5     | 6    | 9     |

# RNF-100

## Approvals

|                              |  |
|------------------------------|--|
| *UL File E35586              | Def Stan 59-97 Type 2b                             |
| *CSA LR31929                 | MIL-DTL-23053/5 Class 1 (colours), Class 2 (Clear) |
| VG 95343 Part 5 Type A and B | BS 3G-198 Part 3 11B                               |
| VDE 0341/P1 9005             |  |
| *Not clear product (X).      |  |

## Performance

| Test                  | Test method                               | Test requirement  |
|-----------------------|---|---|
| Heat Ageing:          | ISO 188 (168h at 175°C)                   | Ultimate elongation: 150% (min)   |
| Corrosion resistance: | ASTM D2671 (16h at 175°C)                 | No corrosion of mirrors   |
| Dielectric strength:  | IEC 243                                   | $\varnothing \leq 25.4$ 20 MV/m<br>$\varnothing > 25.4$ 10 MV/m   |
| Flame retardancy:     | ASTM D876<br>UL 224 (All tube flame test) | Duration of burning 30s max   |
| Fluid resistance:     | 24 h at 23°C, ISO 37                      | Tensile strength: 7 MPa (min)<br>Ultimate elongation: 200% (min)  |
|                       | Test fluids:                              | Aircraft fuel to ISO1817 liquid B<br>Phosphate ester ISO1817 liquid 103<br>Lubricating oil ISO1817 liquid 101 |

For full product performance details consult Raychem Specification RK 6001.

## Specifications

Raychem Specification RK 6001.  
Material Safety Data Sheet available on request.  
Installation instructions available on request.

Raychem and RNF-100 are trademarks of Raychem Corporation.

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

TH 93002 1/98

## RP 4800 Single Wall Tubing

The pages above appended into one document

### Applications

RP 4800 is a 4X expanded, radiation crosslinked polyolefin tubing development for a wide range of harness repair applications. The products 4X expansion eliminates the unnecessary removal of connectors or large transitions and allows for easy harnessing assembly and repair. This heat shrinkable, flexible flame retarded tubing is also compatible with Raychem adhesives, providing a complete environmental seal

### Features / Benefits

Flame Retarded  
Good mechanical strength  
Shrink ratio 4:1  
Operating temperature range -55°C to 135°C.

## RP 4800 Approvals

**Raychem**  
RT-1122

**Military**  
MIL-DTL\*-23053/5 Class 1  
VG 95343 Part 5A

**Agency**  
UL 224

\* formerly MIL-I-23053/5 Class 1

## RP-4800 Characteristic

**General**  
Installation Temperature  
121°C

Longitudinal Change  
-10% maximum

**Electrical**  
Dielectric strength  
19.6 MV/m minimum

**Thermal**  
Heat ageing  
336 hours at 175°C  
4 hours at 250°C

Low Temperature flexibility  
4 hours at -55°C

**Flammability / Fire Hazard**

Average duration of burning 60s max (ASTM D2671)

**Chemical**

Fluid resistance

At 23°C for 24 hours for the following fluids

JP-4 Fuel (MIL-T-5606)

Skydrol 500

Hydraulic Fluid (MIL-H-5606)

Aviation Gasoline (100/130) (Mil-G-5572)

Water

**RP 4800 Colours**

**Standard Colours**

| Colour | Code |
|--------|------|
| Black  | 0    |

**RP 4800 Size Range**

| Inside Diameter            |                               | Wall thickness                | Standard Package | Ordering Description |
|----------------------------|-------------------------------|-------------------------------|------------------|----------------------|
| Expanded as supplied (min) | Recovered after heating (max) | Recovered after heating (nom) | Spool quantity   |                      |
| mm                         | mm                            | mm                            | m                |                      |
| 25.4                       | 7                             | 1.14                          | 12               | RP-4800NR1-0         |
| 51                         | 14                            | 1.14                          | 6                | RP-4800NR2-0         |
| 76                         | 20.5                          | 1.14                          | 6                | RP-4800NR3-0         |
| 102                        | 27                            | 1.14                          | 6                | RP-4800NR4-0         |

Copyright and Disclaimer Notice, 1999 Raychem Corporation / Raychem (UK) Ltd.  
Information believed to be correct at time of publication, and may change without prior notice. Email [Webmaster@Raychem.com](mailto:Webmaster@Raychem.com) with inquiries.

## RT-375 Single Wall Tubing

The pages above appended into one document

### Applications

RT-375 is a flexible modified fluoropolymer which provides extreme clarity with UL VW-1 flame retardancy. This 2:1 shrink ratio tube is used to provide protection to cable bundles and markers, from severe chemical and mechanical abuse, whilst retaining the ability to see the substrate. Sizes range from 3/64 inch to 1 inch to allow a wide range of diameters to be covered

### Features / Benefits

Extreme clarity  
Flexible  
Highly flame retarded  
Operating temperature range -55°C to 150°C.

## RT-375 Approvals

**Raychem**  
RT-375

**Military**  
MIL-DTL\*-23053/18  
DTL\* Formerly MIL-I-23053

**Agency**  
UL 600 V, 150°C VW-1

## RT-375 Characteristics

**General**  
Installation Temperature  
150°C

Longitudinal Change  
0 to -10% maximum

**Electrical**  
Dielectric strength  
15.7 MV/m minimum

**Thermal**  
Heat ageing  
336 hours at 225°C  
4 hours at 250°C

Low Temperature flexibility  
4 hours at -55°C

**Flammability / Fire Hazard**

Self Extinguishing within 1 minute, ASTM D2671

**Chemical**

Fluid resistance

At 23°C for 24 hours for the following fluids

JP-4 Fuel (MIL-H-5606)

Lubricating oil, (MIL-L23699)

Lubricating oil, (MIL-L-7808)

5% NaCL, O-S-1926

De-icing Fluid (MIL-A-8243)

Water

**UV Resistance**

RT375 heat shrink sleeving has been subjected to 7,500 hour UV in accordance with ASTM G 53-88. After this period the sleeving remained transparent. The test was performed using UV-B bulbs as stated in the ASTM conditions for ultra violet radiation exposure. The UV-B bulbs are used since they simulate closely normal sunlight and they emit the shortest wavelengths which occur at the Earths surface. It is the short wavelength radiations which cause most damage to polymeric materials.

**RT-375 Colours****Standard Colours**

| Colour | Code |
|--------|------|
| Clear  | X    |

**RT-375 Size Range**

| Inside Diameter            |                               | Wall thickness                | Standard Package | Ordering Description |
|----------------------------|-------------------------------|-------------------------------|------------------|----------------------|
| Expanded as supplied (min) | Recovered after heating (max) | Recovered after heating (nom) | Spool quantity   |                      |
| mm                         | mm                            | mm                            | m                |                      |
| 1.2                        | 0.6                           | 0.25                          | 300              | RT-375-3/64-X        |
| 1.6                        | 0.8                           | 0.25                          | 300              | RT-375-1/16-X        |
| 2.4                        | 1.2                           | 0.25                          | 150              | RT-375-3/32-X        |
| 3.2                        | 1.6                           | 0.25                          | 150              | RT-375-1/8-X         |
| 4.8                        | 2.4                           | 0.25                          | 150              | RT-375-3/16-X        |
| 6.4                        | 3.2                           | 0.30                          | 75               | RT-375-1/4-X         |
| 9.5                        | 4.8                           | 0.30                          | 60               | RT-375-3/8-X         |
| 12.7                       | 6.4                           | 0.30                          | 45               | RT-375-1/2-X         |
| 19.0                       | 9.5                           | 0.43                          | 75               | RT-375-3/4-X         |
| 25.4                       | 12.7                          | 0.48                          | 75               | RT-375-1-X           |

The largest size which will recover snugly over the component to be covered should be ordered.

The wall thickness of the tubing will be less than specified if recovery is restricted during shrinkage. Other lengths and sizes may be available subject to special order.

Copyright and Disclaimer Notice, 1999 Raychem Corporation / Raychem (UK) Ltd.  
Information believed to be correct at time of publication, and may change without prior notice. Email [Webmaster@Raychem.com](mailto:Webmaster@Raychem.com) with inquiries.