

Highly expanded, polyolefin heat-shrinkable tubing

RP-4800 is a radiation-crosslinked polyolefin material with a 4:1 expansion ratio. It was developed for a wide range of applications where a large expansion is required, such as harness repair. This high expansion simplifies installation and speeds repairs. The high expansion of RP-4800 tubing eliminates the need to remove connectors or large

transitions and allows for easy harness assembly and repair. This heat-shrinkable, flexible, flame-retardant tubing is also compatible with Raychem adhesives, providing a complete environmental seal.

RP-4800 tubing has excellent physical and mechanical properties that meet both military and industrial

requirements. It is highly abrasion-resistant and shows no significant degradation when exposed to common solvents and chemicals, including aviation fuel and hydraulic fluid.

RP-4800 tubing remains flexible at low temperatures and, for short periods, can withstand temperatures of up to 300°C without dripping or flowing.

**Temperature rating**

|                                   |                |
|-----------------------------------|----------------|
| Full recovery temperature:        | 121°C          |
| Continuous operating temperature: | -55°C to 135°C |

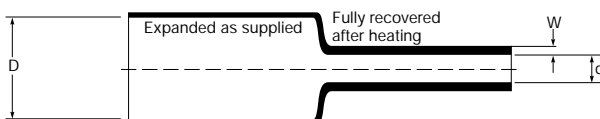
**Specifications\***



| Type    | Raychem | Military                 | UL     |
|---------|---------|--------------------------|--------|
| RP-4800 | RT-1122 | AMS-DTL-23053/5, Class 1 | E35586 |

\*When ordering, always specify latest issue.

**Dimensions (millimeters/inches)**



| Part number   | Inside diameter |                      | d (max.)                |                         | Wall thickness |                           |
|---------------|-----------------|----------------------|-------------------------|-------------------------|----------------|---------------------------|
|               | D (min.)        | Expanded as supplied | Recovered after heating | Recovered after heating | W              | Recovered after heating** |
| RP-4800-No.1  | 25.40           | 1.00                 | 6.99                    | 0.275                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.2  | 50.80           | 2.00                 | 13.97                   | 0.550                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.3  | 76.20           | 3.00                 | 20.57                   | 0.810                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.4  | 101.60          | 4.00                 | 26.67                   | 1.050                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.5  | 25.40           | 1.00                 | 11.74                   | 0.462                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.6  | 60.33           | 2.37                 | 17.27                   | 0.680                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.7  | 76.20           | 3.00                 | 21.34                   | 0.840                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.8  | 95.25           | 3.75                 | 23.62                   | 0.930                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.9  | 114.30          | 4.50                 | 36.83                   | 1.450                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.10 | 38.10           | 1.50                 | 9.53                    | 0.375                   | 1.14 ± 0.18    | 0.045 ± 0.007             |
| RP-4800-No.11 | 19.05           | 0.75                 | 4.57                    | 0.180                   | 1.14 ± 0.18    | 0.045 ± 0.007             |

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

**Ordering information**

|                      |   |
|----------------------|---|
| Colors               | <b>Standard</b> Black   |
|                      | <b>Nonstandard</b> Brown, red, orange, yellow, green, blue, violet, gray, and white     |
| Size selection       | Always order the largest size that will shrink snugly over the component being covered. |
| Standard packaging   | On spools or in 4-foot lengths  |
| Ordering description | Specify product name, size, and color; for example, RP-4800-No.6-0 (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                         |                            |
|   | Tensile strength  | psi ( <i>MPa</i> )  | 1500 ( <i>10.3</i> ) minimum  | ASTM D 2671                         |                            |
|   | Ultimate elongation                                     | percent   | 200 minimum   | ASTM D 2671                         |                            |
|   | Secant modulus (expanded)                               | psi ( <i>MPa</i> )  | 2.5 x 10 <sup>4</sup> ( <i>172</i> ) maximum                                | ASTM D 2671                         |                            |
|   | Specific gravity  |   | 1.35 maximum  | ASTM D 2671                         |                            |
|   | Low-temperature flexibility<br>(4 hours at -55°C/-67°F) |   | No cracking   | See note below                      |                            |
|   | Heat shock<br>(4 hours at 250°C/482°F)                  |   | No dripping, flowing<br>or cracking   | See note below                      |                            |
| Heat resistance<br>(336 hours at 175°C/347°F) |   |   | ASTM D 2671   |                                     |                            |
| Followed by test for:                         |   |   |   |                                     |                            |
|   | Ultimate elongation                                     | percent   | 150 minimum   | ASTM D 2671                         |                            |
| Electrical                                    | Dielectric strength                                     | volts/mil ( <i>volts/mm</i> )   | 500 ( <i>19,680</i> ) minimum   | ASTM D 2671                         |                            |
|   | Volume resistivity                                      | ohm-cm  | 10 <sup>14</sup> minimum  | ASTM D 2671                         |                            |
| Chemical                                      | Corrosive effect<br>(16 hours at 175°C/347°F)           |   | No removal of copper  | See note below                      |                            |
|   | Copper stability<br>(168 hours at 160°C/320°F)          |   | No brittleness, glazing,<br>cracking, or severe<br>discoloration of tubing. | See note below                      |                            |
|   | Followed by test for:                                   |   |   |                                     |                            |
|   |   | Ultimate elongation   | percent   | 200 minimum                         | ASTM D 2671                |
|   |   | Flammability, average time<br>of burning  | seconds   | 60 maximum<br>25% maximum flag burn | ASTM D 2671<br>Procedure B |
|   |   | Fungus resistance   |   | Rating of 1 or less                 | ASTM G 21                  |
|   |   | Water absorption<br>(24 hours at 23°C/73°F)   | percent   | 0.5 maximum                         | ASTM D 2671                |
|   |   | Fluid resistance<br>(24 hours at 23°C/73°F) in:<br>JP-8 fuel (MIL-T-5624)<br>Skydrol 500<br>Hydraulic fluid<br>(MIL-H-5606)<br>Aviation gasoline 100/300<br>(MIL-G-5572)<br>Water |   |                                     | ASTM D 2671                |
|   | Followed by tests for:                                  |   |   |                                     |                            |
|   |   | Dielectric strength   | volts/mil ( <i>volts/mm</i> )   | 400 ( <i>15,760</i> ) minimum       | ASTM D 2671                |
|   | Tensile strength  | psi ( <i>MPa</i> )  | 1000 ( <i>6.9</i> ) minimum   | ASTM D 2671                         |                            |

Note: Consult RT-1122 for specific details about test procedures.

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

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