

Flexible, adhesive-lined, polyolefin heat-shrinkable tubing

TAT-125 is an adhesive-lined, flexible, thin-wall, heat-shrinkable tubing. It provides one-step electrical insulation and moisture sealing for a wide variety of applications.

TAT-125 is especially suitable for applications where the moisture seal

must withstand flexing or other physical abuse. Because both tubing and adhesive are flexible, the moisture seal is resistant to bending of the substrate.

The thin adhesive lining of TAT-125 melts and flows with the heat of

application to form a positive environmental seal. The adhesive will adhere to a wide variety of plastics, rubbers, and metals, including PVC, polyethylene, neoprene, lead, and steel.

**Temperature rating**

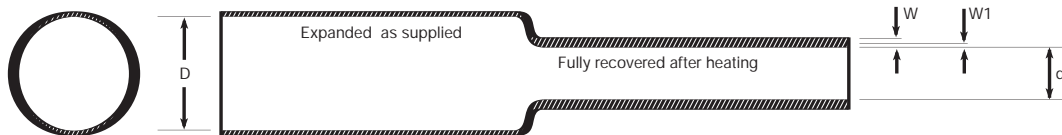
|                                   |                |
|-----------------------------------|----------------|
| Full recovery temperature:        | 121°C          |
| Continuous operating temperature: | -55°C to 110°C |

**Specifications\***

| Type                    | Raychem | Military               | UL     |
|-------------------------|---------|------------------------|--------|
| TAT-125 Type 1 (colors) | RW-3032 | AMS-DTL-23053/4, Cl. 2 | E85381 |
| TAT-125 Type 2 (clear)  | RW-3032 |                        |        |

\*When ordering, always specify latest issue.

**Dimensions (millimeters/inches)**



| Size  | Inside diameter                     |                                        | Recovered wall thickness** |       |                                |       |
|-------|-------------------------------------|----------------------------------------|----------------------------|-------|--------------------------------|-------|
|       | D (min.)<br>Expanded<br>as supplied | d (max.)<br>Recovered<br>after heating | W<br>Nominal<br>total wall |       | W1<br>Nominal<br>adhesive wall |       |
| 1/8   | 3.2 0.125                           | 1.6 0.062                              | 0.68                       | 0.027 | 0.23                           | 0.009 |
| 3/16  | 4.7 0.187                           | 2.4 0.093                              | 0.71                       | 0.028 | 0.25                           | 0.010 |
| 1/4   | 6.4 0.250                           | 3.2 0.125                              | 0.74                       | 0.029 | 0.13                           | 0.005 |
| 3/8   | 9.5 0.375                           | 4.7 0.187                              | 0.74                       | 0.029 | 0.13                           | 0.005 |
| 1/2   | 12.7 0.500                          | 6.4 0.250                              | 0.76                       | 0.030 | 0.15                           | 0.006 |
| 3/4   | 19.1 0.750                          | 9.5 0.375                              | 0.89                       | 0.035 | 0.15                           | 0.006 |
| 1     | 25.4 1.000                          | 12.7 0.500                             | 1.07                       | 0.042 | 0.20                           | 0.008 |
| 1 1/2 | 38.1 1.500                          | 19.1 0.750                             | 1.19                       | 0.047 | 0.28                           | 0.012 |
| 2     | 50.8 2.000                          | 25.4 1.000                             | 1.65                       | 0.065 | 0.56                           | 0.022 |
| 3     | 76.2 3.000                          | 38.1 1.500                             | 1.65                       | 0.065 | 0.56                           | 0.022 |
| 4     | 101.6 4.000                         | 50.8 2.000                             | 1.78                       | 0.070 | 0.56                           | 0.022 |

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

**Ordering information**

|                      |                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Colors               | <b>Standard</b> Black<br><b>Nonstandard</b> White, red, blue, yellow, green, orange, brown, violet, clear (non-flame-retardant jacket) |
| Size selection       | Always order the largest size that will shrink snugly over the component being covered.                                                |
| Standard packaging   | 4-foot lengths                                                                                                                         |
| Nonstandard sizes    | Sizes of 2 inches and larger are by special order only. Other nonstandard sizes are available upon special request.                    |
| Ordering description | Specify product name, size, and color; for example, TAT-125 1/4-0 (0=Black).                                                           |

## Specification values

|                                              | Property                                                                                                                                                     | Unit                 | Requirement                                                     | Method of test                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------|---------------------------------|
| <b>Physical</b>                              | Dimensions                                                                                                                                                   | mm ( <i>inches</i> ) | See reverse                                                     | ASTM D 2671                     |
|                                              | Longitudinal change*                                                                                                                                         | percent              | +0, -5 maximum                                                  | ASTM D 2671                     |
|                                              | Tensile strength                                                                                                                                             | psi                  | 1500 minimum                                                    | ASTM D 2671                     |
|                                              | Ultimate elongation                                                                                                                                          | percent              | 200 minimum                                                     | ASTM D 2671                     |
|                                              | Secant modulus (as supplied)                                                                                                                                 | psi                  | 2.5 x 10 <sup>4</sup> maximum                                   | ASTM D 2671                     |
|                                              | Cold impact<br>(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 of outer wall              | AMS-DTL-23053                   |
|                                              | Heat resistance<br>(168 hours at 175°C/347°F)                                                                                                                |                      | No dripping, flowing,<br>or cracking of outer wall              | AMS-DTL-23053                   |
|                                              | Color                                                                                                                                                        |                      | Pass                                                            | MIL-STD 104                     |
| Color stability<br>(24 hours at 175°C/347°F) |                                                                                                                                                              | Pass                 | MIL-STD 104                                                     |                                 |
| <b>Electrical</b>                            | Dielectric strength                                                                                                                                          | volts/mil            |                                                                 | ASTM D 2671                     |
|                                              | Sizes 1/8" through 1"<br>Sizes 1 1/2" and larger                                                                                                             |                      | 500 minimum<br>400 minimum                                      |                                 |
|                                              | Volume resistivity                                                                                                                                           | ohm-cm               | 1 X 10 <sup>12</sup> minimum                                    | ASTM D 2671                     |
| <b>Chemical</b>                              | Copper corrosion<br>(16 hours at 121°C/250°F)                                                                                                                |                      | No corrosion                                                    | ASTM D 2671<br>Procedures A & B |
|                                              | Flame retardancy**                                                                                                                                           |                      | Self-extinguishing within<br>1 minute, 25% maximum<br>flag burn | AMS-DTL-23053<br>Test A         |
|                                              | Fungus resistance                                                                                                                                            |                      | Rating of 1 or less                                             | ASTM G21                        |
|                                              | Water absorption<br>(24 hours at 23°C/73°F)                                                                                                                  | percent              | 0.5 maximum                                                     | ASTM D 2671                     |
|                                              | Fluid resistance<br>(24 hours at 24°C/75°F) in:<br>Hydraulic fluid (MIL-H-5606)<br>JP-8 fuel (MIL-T-5624)<br>Lubricating oil (MIL-L-7808<br>and MIL-I-23699) |                      | AMS-DTL-23053                                                   |                                 |
|                                              | Salt water, 5% (O-S-1926)<br>De-icing fluid (MIL-A-8243)<br>Followed by tests for:                                                                           |                      |                                                                 |                                 |
|                                              | Tensile strength                                                                                                                                             | psi                  | 1000 minimum                                                    | ASTM D 2671                     |
|                                              | Dielectric strength                                                                                                                                          | volts/mil            |                                                                 | ASTM D 2671                     |
|                                              | Sizes 1/8" through 1"                                                                                                                                        |                      | 400 minimum                                                     |                                 |
|                                              | Sizes 1 1/2" and larger                                                                                                                                      |                      | 300 minimum                                                     |                                 |

Note: Except for dimensions and longitudinal change, specification values apply to outer jacket only. \*Sizes and colors not included in AMS-DTL-23053/4, Class 2 have a longitudinal change requirement of +0, -10 maximum. \*\*Only the outer jacket of TAT-125 is flame-retardant; the outer jacket of clear TAT-125, however, is not flame-retardant.

| Typical properties | Adhesive         |                   |
|--------------------|------------------|-------------------|
|                    | Peel strength    | T-PEEL, 2"/minute |
| Polyethylene       | 15 lb./in. width |                   |
| Neoprene           | 10 lb./in. width |                   |
| PVC                | 10 lb./in. width |                   |
| Lead               | 5 lb./in. width  |                   |
| Steel              | 15 lb./in. width |                   |

Raychem is a trademark of Tyco Electronics Corporation.

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

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