

QS1500
Polyolefin, Flexible,
Adhesive Lined,
Heat - Shrinkable Tubing

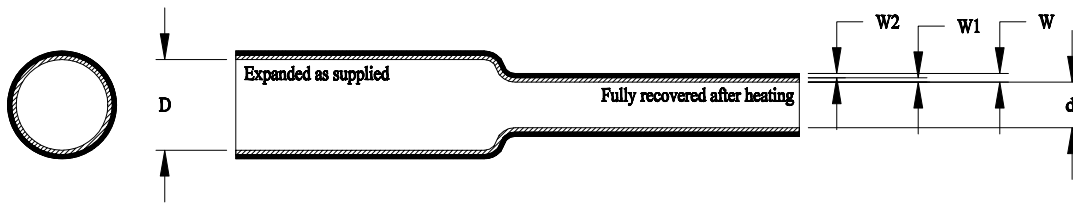


Table 1: Dimensions

| Size | As Supplied | | As Recovered | | | | | | | |
|-------|--|-------|---|------|------------------------------------|------|--------------------------------------|------|----------------------------------|------|
| | Minimum Expanded I.D. Including Core (D) | | Maximum Recovered I.D. Including Core (d) | | Minimum Recovered Jacket Wall (W2) | | Minimum Recovered Adhesive Wall (W1) | | Minimum Recovered Total Wall (W) | |
| | in. | mm. | in. | mm. | in. | mm. | in. | mm. | in. | mm. |
| No. 1 | 0.225 | 5.72 | 0.050 | 1.27 | 0.025 | 0.64 | 0.022 | 0.56 | 0.047 | 1.20 |
| No. 2 | 0.300 | 7.62 | 0.065 | 1.65 | 0.030 | 0.76 | 0.030 | 0.76 | 0.060 | 1.52 |
| No. 3 | 0.455 | 11.55 | 0.095 | 2.41 | 0.035 | 0.89 | 0.040 | 1.02 | 0.075 | 1.91 |
| No. 4 | 0.700 | 17.78 | 0.175 | 4.45 | 0.041 | 1.04 | 0.054 | 1.37 | 0.095 | 2.41 |
| No. 5 | 1.100 | 27.94 | 0.300 | 7.62 | 0.076 | 1.93 | 0.062 | 1.57 | 0.138 | 3.51 |


Material: Fabricated from flame-retarded crosslinked modified flexible polyolefin, with a thermoplastic adhesive liner.

Color: Jacket shall be black. Adhesive liner shall be amber.

Table 2: Properties:

| Property | Unit | Requirement | Test Method |
|--------------------------------------|---------|--------------|---|
| Specific Gravity | -- | 1.35 maximum | ASTM D 792 Note 1 |
| Dimensions | Inches | Table 1 | ASTM D 2671 |
| Longitudinal Change | Percent | 0 to -10 | ASTM D 2671 |
| Tensile Strength | PSI | 1300 minimum | ASTM D 2671 Speed 2 in./min. Note 2 |
| Ultimate Elongation | Percent | 200 minimum | ASTM D 2671 Speed 2 in./min. |
| Low Temperature Flexibility -40°C | -- | No Cracking | ASTM D 2671 |
| Heat Shock 4 hrs. at 250°C | -- | No Cracking | ASTM D 2671 |

CUSTOMER DRAWING

| | | | | | | |
|---|---|------------|---------------------------|---|------------------|--|
|  | Tyco Electronics Corporation 300 Constitutional Drive Menlo Park, CA 94025 USA | | Raychem Tubing | Title: QS1500 Polyolefin, Flexible, Adhesive Lined, Heat - Shrinkable Tubing | | |
| | Tyco Electronics reserves the right to amend this drawing at any time. Users should evaluate the suitability of the product for their application | | | Document No : QS1500 | | |
| Cage Code: 06090 | Scale: None | Size: A | Rev. Date: 5-Jan-10 | Rev.: C | Sheet: 1 of 2 | |

Properties, continued

| Property | Unit | Requirement | Test Method |
|-------------------------------------|-----------|--------------------------------|---|
| Heat Aging, 168 hrs at 175°C | -- | No Cracking | Note 3 |
| Dielectric Strength, (jacket only)* | Volts/mil | 350 minimum | ASTM D 149 |
| Volume Resistivity | ohm-cm | 10 ¹² minimum | ASTM D 257 |
| Flammability | -- | Self extinguishing in 1 minute | ASTM D 2671; Procedure B Mandrel size 50% of Expanded I.D. |
| Water Absorption | Percent | 1.0 maximum | ASTM D 570, Procedure A |

* Adhesive liner manually removed prior to testing.

Qualification Sizes:

QS1500-1 qualifies QS1500-1 and QS1500-2
 QS1500-3 qualifies QS1500-3 and QS1500-5

Note 1: Sample Preparation

Unless otherwise specified, all tests will be performed on tubing specimens which have been recovered by conditioning for 10 minutes in a 150°C air circulating oven and then allowed to stabilize at 23±3°C for 3 hours.

Note 2: Tensile Strength

Calculate Tensile Strength based on wall thickness of jacket only.

Note 3: Thermal Aging

Three samples shall be conditioned for 168 hours in an air circulating oven at 175±3°C. After conditioning, the specimens shall be cooled to room temperature and bent through 180° over a mandrel selected in accordance to Table 3. Any side cracking caused by flattening of the specimen on the mandrel shall be disregarded.

Table 3: Mandrel Sizes

| Tube Size "I.D.", inches | Mandrel, O.D. inches |
|--------------------------|----------------------|
| .047 ≤ ID ≤ .250 | .313 |
| .250 ≤ ID ≤ .500 | .375 |
| .500 ≤ ID ≤ 2.0 | .437 |

Acceptance tests shall consist of:

Dimensions
 Longitudinal Change

Acceptance tests shall be performed on each lot of tubing or on a skip-lot basis per a statistically justified control plan determined by Tyco Electronics.

CUSTOMER DRAWING

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|------------------------|------------|-------------------------------|------------------|
| Rev. Date: 5-Jan-10 | Rev.: C | Document No. QS1500 | Sheet: 2 of 2 |
|------------------------|------------|-------------------------------|------------------|

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