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

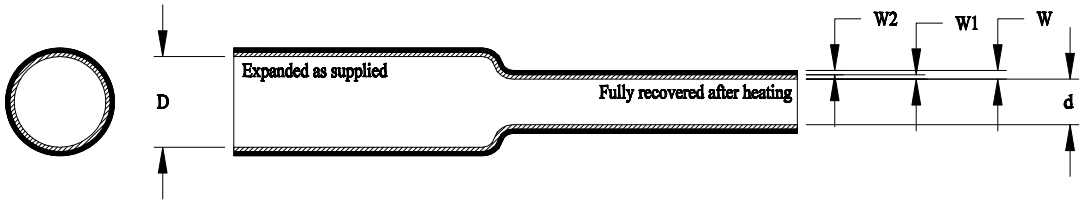

Table 1: Dimensions

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	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:	Scale:	Size:	Rev. Date:	Rev.:	Sheet:
06090	None	A	5-Jan-10	C	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.