

# 3M Heavy Duty Heat Shrink Tubing

A **valmont**  COMPANY



**Features:** Heavy Duty Heat Shrink Tubing is a 3:1 thin-wall, flexible tubing offering the advantages of integral, adhesive-lined construction.

**Construction:** Made from flame-retardant, flexible polyolefin with an internal layer of special thermoplastic adhesive. The heat-shrinkable outer wall is selectively cross-linked, while maintaining the high flow and excellent adhesion of the inner sealant liner.

**Design Criteria:** Heavy Duty Heat Shrink Tubing has a 3:1 shrink ratio. When freely recovered, the tubing with shrink 33% of its as-supplied diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery.

The operating range is from -55°C (-67°F) to 110°C (230°F), with a shrinking temperature minimum of 121°C (250°F).

Part #	Color	Tube Size	U of M	Weight
EPS300-1-1/2	Black	1-1/2" x 4'	Box of (5) 4' Sticks	2.5 lb.
EPS300-1-1/2-CL	Clear	1-1/2" x 4'	Box of (5) 4' Sticks	2.5 lb.

# Heavy Duty Heat Shrink Tubing

## Adhesive-Lined, 3:1, Flexible, Polyolefin



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<b>Description</b>	<p>Heavy Duty Heat Shrink Tubing is a 3:1 thin-wall, flexible tubing offering the advantages of integral, adhesive-lined construction. The tubing is made from flame-retardant, flexible polyolefin with an internal layer of special thermoplastic adhesive. The heat-shrinkable outer wall is selectively cross-linked, while maintaining the high flow and excellent adhesion of the inner sealant liner.</p> <p>When heated in excess of 121°C (250°F), tubing rapidly shrinks to a skintight fit, forcing the melted adhesive lining to flow and cover the substrate. The adhesive forms a flexible bond with a wide variety of rubbers, plastics and metals. Upon cooling, the adhesive solidifies, forming a permanent, non-drying, flexible and water resistant barrier. Adhesive reflow will occur at temperatures above 80°C (176°F).</p>
<b>Agency Approvals &amp; Self Certifications</b>	<ul style="list-style-type: none"><li>• UL Recognized (all colors except clear), UL File E-157227 at 600 Volts and 125°C maximum</li><li>• CSA Recognized, CSA File LR38227</li></ul>
<b>Applications</b>	<p>Heavy Duty Heat Shrink Tubing offers excellent environmental protection for electronic components, wire splices, wire bundles and harness breakouts. Automotive, truck and marine wiring splices and harness breakouts are quickly and easily protected from harsh environments.</p>
<b>Shrink Ratio</b>	<p>Heavy Duty Heat Shrink Tubing has a 3:1 shrink ratio. When freely recovered, the tubing will shrink 33% of its as-supplied diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery.</p> <p>The operating temperature range is from -55°C (-67°F) to 110°C (230°F), with a shrinking temperature minimum of 121°C (250°F).</p>

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# Heavy Duty Heat Shrink Tubing

## Typical Properties

Not for specifications. Values are typical, not to be considered minimum or maximum. Properties measured at room temperature 73°F (23°C) unless otherwise stated.

Physical Property	Typical Value US units (metric)
<b>Tensile Strength</b>	2100 PSI
<b>Ultimate Elongation</b>	450%
<b>Longitudinal Change</b>	+1, -15%
<b>Secant Modulus (2%)</b>	17,000 PSI
<b>Specific Gravity</b>	1.3
<b>Heat Aging</b> (outer wall only) 168 hrs @ 175°C	Elongation 175%
<b>Heat shock</b> (outer wall only) 4 hrs @ 225 °C	No dripping, flowing, cracking
<b>Low Temperature Flexibility</b> (outer wall only) 4 hrs @ -55 °C	No cracking
<b>Flammability</b>	Self-extinguishing, meets UL224 All-Tubing Flame Test (jacket)

Electrical Property (Test Method)	Typical Value US units (metric)
<b>Dielectric Strength</b>	700 V/mil
<b>Volume Resistivity</b>	10 <sup>14</sup> ohm/cm

Chemical Property (Test Method)	Typical Value US units (metric)
<b>Corrosion Resistance</b> (Copper mirror)	Non-corrosive
<b>Fungus Resistance</b>	Non-nutrient
<b>Water Absorption</b>	0.3%
<b>Fluid Resistance</b>	Excellent

Adhesive	Typical Value
<b>Peel Strength, pli</b> Polyethylene PVC Lead Aluminum	30 10 15 40
<b>Corrosive Effect</b> (Copper mirror)	Non-corrosive

# Heavy Duty Heat Shrink Tubing

## Standard Sizes and Dimensions

Ordering Size (Nominal)	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Total Recovered Wall Thickness (Nominal)		Meltable Recovered Wall Thickness	
	In.	(mm)	In.	(mm)	In.	(mm)	In.	(mm)
1/8	.125	(3,18)	.040	(1,02)	.040	(1,02)	.020	(0,51)
3/16	.187	(4,75)	.062	(1,57)	.040	(1,02)	.020	(0,51)
1/4	.250	(6,35)	.080	(2,03)	.040	(1,02)	.020	(0,51)
3/8	.375	(9,53)	.120	(3,05)	.055	(1,40)	.025	(0,62)
1/2	.500	(12,70)	.160	(4,06)	.070	(1,78)	.030	(0,76)
3/4	.750	(19,05)	.250	(6,35)	.085	(2,16)	.035	(0,89)
1	1.000	(25,40)	.320	(8,13)	.100	(2,54)	.040	(1,02)
1-1/2	1,500	(38,10)	.510	(12,95)	.100	(2,54)	.040	(1,02)

**Standard Colors**      Black, Clear

NOTE: The clear tubing is not flame retardant or UL listed.

**Shelf Life & Storage**      Heavy Duty Heat Shrink Tubing EPS-300 has a 10-year shelf life from date of manufacture when stored in a humidity controlled storage (10°C/50°F to 27°C/80°F and <75% relative humidity).

**Availability**      **Standard Packaging**  
 Four-foot lengths.