



TES Heat Shrink Tubing

Adhesive Lined, 4:1, Semi-Rigid, Clear Polyolefin for the Automotive Industry

All-Weather, Heat-Shrinkable, Dual Wall, Polyolefin Tubing for Automotive Wire Harnesses

- Semi-rigid polyolefin
- Provides excellent strain relief
- Functional over wide temperature range
- Puncture resistant
- Resistant to salt water, automotive fluids and corrosive chemicals

Product Description

3M™ TES Heat Shrink Tubing is a co-extruded, dual wall product. It is a composite of a polyolefin shrinkable outer wall and a thermoplastic adhesive inner wall. TES tubing does not degrade when exposed to automotive and marine environments and is not affected by severe vibration, extreme temperature changes, moisture or automotive fluids.

Typical Application

Semi-rigid TES tubing is ideal for applications requiring moisture sealing, mechanical protection and strain relief.

The adhesive layer is compatible with typical wire insulation and is intended for moisture sealing and insulation of automotive, RV, truck, trailer, tractor, heavy equipment and marine wire splices, in-line components, fusible links and terminals.

This clear tubing is ideal for applications requiring inspection of the underlying weld or component.

Shrink Ratio

TES Tubing has a 4:1 shrink ratio. When fully recovered, the tubing will shrink to 25 percent of its original diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery.

Standard Color

TES tubing is supplied in clear and is color-coded by diameter with printed squares to aid in identification.

Standard Packaging

Cut pieces and 4 foot lengths. See price pages for standard lengths and carton quantities. Other sizes, lengths and packaging options are available, subject to factory quotation.

Printing

Custom printing to identify resistors, diodes and other components is available, subject to factory quotation.

Ordering Information

Order TES by product name and part number and cut length. Example: TES 300, 55mm length.

Standard Sizes and Dimensions

Ordering Size	Minimum Expanded I.D.	Maximum Recovered I.D.	Nominal Recovered Melt Wall	Minimum Recovered Outer Wall	Color Code
.220	.220"	.045"	.030"	.027"	Yellow
.300	.300"	.060"	.033"	.028"	White
.350	.350"	.080"	.038"	.033"	Green
.450	.450"	.105"	.043"	.053"	Red

Typical Properties*

Physical		Electrical	
Tensile Strength	2450 psi	Dielectric Strength ⁵	500 V/mil
Ultimate Elongation ¹	475%	(outer wall)	
2% Secant Modulus ²	16,500 psi	Dielectric Withstand	1000
Longitudinal Change ¹	+0%, -10%		VoltsAC
Specific Gravity ³	0.97	Current Leakage	< 0.250
Heat Aging	135°C	(outer wall)	Microamps
	(Adhesive softens)		
Thermal Cycle	5°C to 135°C	Chemical	
Vibration	24 hours	Auto Fluid Compatibility	8 fluids
Cold Flex	-30°C		

*Not recommended for specification purposes. Product specifications will be provided upon request.

3M test methods available upon request.

Test Methods

¹ASTM-D 2671

²ASTM-D 882 Procedure A

³ASTM-D 792

⁴ASTM-D 2671 Procedure B

⁵ASTM-D 149

Handling and Safety Precautions

Read all Health Hazard, Precautionary, and First Aid statements found in the Material Safety Data Sheet and/or product label prior to handling or use.

Important Notice

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Electrical Products Division

6801 River Place Blvd.
Austin, TX 78726-9000
800/328-1368



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