



SEALING AND PROTECTION IN WIRE HARNESS APPLICATIONS

In demanding electrical environments, wire harnesses must deliver consistent performance, protection, and durability. TE Connectivity’s heat shrink tubing solutions are engineered to meet these challenges by providing robust insulation, environmental sealing, and mechanical strain relief. Designed for a wide range of industries—including automotive, aerospace, industrial, and telecommunications—these products help streamline harness assembly while safeguarding against abrasion, moisture, and chemical exposure. With a broad portfolio tailored to diverse specifications, TE’s heat shrink tubing plays a critical role in enhancing the longevity and reliability of modern wire harness systems.


TRENDS IN HEAT SHRINK TUBING

**Electrification & High Voltage**


Growing demand in EVs and renewable energy systems for high-voltage insulation and protection

**Sustainability**


Shift toward sustainable materials

**Advanced Materials**

Innovations in cross-linked polymers for higher temperature and chemical resistance


**Smart Manufacturing**

Automation-ready tubing designs for faster, more consistent installation


**Connectivity & Data**

Protection for data and sensor cables in connected systems and smart infrastructure


BENEFITS OF HEAT SHRINK TUBING IN WIRE HARNESS APPLICATIONS

**Mechanical Protection**


- Shields wires from abrasion, cuts, and impact
- Adds strain relief at connection points and terminations

**Electrical Insulation**


- Prevents short circuits and electrical leakage
- Maintains dielectric strength even in harsh environments

**Thermal Resistance**


- Operates effectively across a wide temperature range
- Suitable for high-heat environments like engine compartments

**Flame Retardancy**


- Many types meet flame-retardant standards for safety-critical applications

**Easy Installation**


- Simple to apply with a heat gun or oven
- Conforms tightly to irregular shapes and connectors

**Long-Term Reliability**


- Enhances the durability and service life of wire harnesses
- Resistant to UV, chemicals, and mechanical wear

**Space and Weight Efficiency**

- Reduces the overall diameter of wire bundles
- Lightweight alternative to bulky insulation methods

**Improved Aesthetics and Organization**

- Neatly bundles wires for a clean, professional appearance
- Available in multiple colors for easy circuit identification

**Environmental Sealing**

- Protects against moisture, dust, chemicals, and corrosion
- Adhesive-lined variants provide a watertight seal

APPLICATIONS OF HEAT SHRINK TUBING

**Automotive Engine Bays**

Protects hoses and wiring from heat, abrasion, and vibration

**Electric Vehicles**

Insulates and seals high-voltage cables and connectors

**Aerospace Systems**

Provides lightweight insulation of aircraft wiring

**Industrial Automation**

Protects sensor and control wiring in harsh factory environments

**Marine & Offshore**

Seals and protects cables from saltwater and corrosion

**Medical Devices**

Insulates and organizes wires in diagnostic and surgical equipment

**Renewable Energy**

Protects wiring in solar and wind power installations

**Telecommunications**

Seals and organizes fiber optic and data cables

Single Wall Tubing	Dual Wall Tubing	Speciality Tubing	High Voltage Tubing
<ul style="list-style-type: none">Bundling protectionAbrasion resistantStrain reliefQuick installationVariety of colors available for codingLow shrink temperatureMIL-SPECMeets UL VW1 - flammabilityMeets UL/CSA - electrical insulationCost effectiveUL rating - minimize catastrophic failure of a system	<ul style="list-style-type: none">Waterproof - submersionCable repair - bonding & sealingSplice sealingDirect burial water - proofingMeets UL VW - 1 flammability ratingElectrical insulationMIL-SPECUL rating - minimize catastrophic failure of a system	<ul style="list-style-type: none">Abrasion resistantGreater than 150°C rated - high temperature environmentsFungal and mold protectionUL rating - minimize catastrophic failure of a systemFlame retardantWater, heat and humidity resistantMIL-SPEC	<ul style="list-style-type: none">EV orange color for easy identification of higher voltageFlexible design and easy to installLightweight material designExcellent insulationDoes not propagate burning (UL224)Can fit over both components and cablesDeliver optimum thermal stabilityRobust electrical resistivity
			