

The Perfect FIT[®] for Any Need

FIT Heat-Shrink Tubing
FIT Wire Management




AlphaWire

Cables you trust. Service you deserve.

The Right FIT for Your Applications

FIT heat-shrink tubing and wire management products give you more choices to achieve reliable, rugged cabling systems. Within our wide array of products, you'll find solutions to satisfy any application, from general-purpose needs to extremes of temperature, chemicals, and abrasion.

| | | |
|---|--------------------|-----------------------------|
|  | Heat-Shrink Tubing | Standard Polyolefin Tubing |
| | | Dual-Wall Polyolefin Tubing |
| | | Special-Purpose Tubing |
| | Wire Management | Non-Shrink Tubing |
| | | Woven Sleeving |
| | | Specialty Sleeving |
| | | Adhesive Tape |
| | | Lacing Tape |
| | | Copper Braid and Tape |



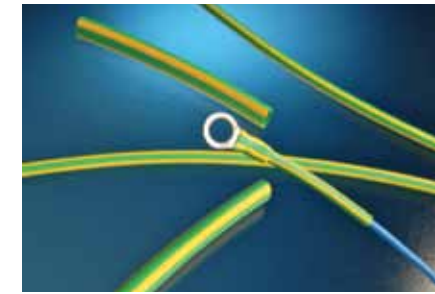
FIT® Heat-Shrink Tubing

FIT heat-shrink tubing offers a reliable way to protect and seal terminations, while adding additional mechanical ruggedness.

The Alpha Wire FIT line consists of a wide range of general-purpose and special-purpose styles, materials, and tubing types, each having unique attributes that provide solutions for use in the broadest possible range of applications and environments.

Made from premium compounds under the tightest manufacturing controls, FIT will consistently have excellent physical characteristics.

- 2:1 to 6:1 shrink ratios
- Irradiated or crosslinked materials
- Low longitudinal shrinkage
- Wide temperature range
- Chemical and solvent resistant
- Choice of standard and custom colors
- Unlined and adhesive lined



Heat-Shrink Tubing

| Material | Purpose | UL VW-1 | Resistance | | | Flexibility | Operating Temperature | Shrink Ratio | FIT Family |
|--|--|---------|------------|------|----------|-------------|-----------------------|--------------|-------------------|
| | | | Chemical | Heat | Abrasion | | | | |
| Single-Wall irradiated polyolefin for General-Purpose Use | | | | | | | | | |
| Irradiated polyolefin | Variety of shrink-ratios | ✓ | ✓ | ✓ | ✓ | - | -55 to 135°C | 2:1 | FIT-221 |
| | | | | | | | -55 to 135°C | 4:1 | FIT-421 |
| Flame-retardant irradiated polyolefin | Low shrink temp | ✓ | ✓ | ✓ | ✓ | - | -55 to 135°C | 2:1 | FIT-221V |
| | | | | | | | -55 to 135°C | 3:1 | FIT-321V |
| Irradiated polyolefin | 600V ground lead identification | ✓ | ✓ | ✓ | ✓ | - | -55 to 135°C | 2:1 | FIT-260 |
| Semi-rigid irradiated polyolefin | 30% stronger 25% stiffer than standard polyolefin | ✓ | ✓ | ✓ | ✓ | - | -55 to 135°C | 2:1 | FIT-295 |
| Dual-Wall Polyolefin for Additional Sealing | | | | | | | | | |
| Surface irradiated, dual extruded | Meltable inner wall, no adhesive | ✓ | ✓ | ✓ | ✓ | - | -55 to 125°C | 2.5:1 | FIT-300 |
| Bonding, thermoplastic adhesive lined | Bonds to most materials; high voltage (2kV at 90°C continuous) | ✓ | ✓ | ✓ | ✓ | - | -55 to 110°C | 3:1 | FIT-700 |
| | | | | | | | -55 to 125°C | 3:1 | FIT-321 |
| Bonding, adhesive lined | Water and corrosion protection | ✓ | ✓ | ✓ | ✓ | - | -55 to 90°C | 5.6:1 | FIT-621 |
| | | | | | | | -55 to 125°C | 2:1 | FIT-750 |
| Special-Application Tubing | | | | | | | | | |
| Irradiated PVC | Low shrink temp; 30% stronger than standard polyolefin | ✓ | ✓ | ✓ | ✓ | - | -20 to 105°C | 2:1 | FIT-105 |
| Irradiated PVDF | High shrink temp; 3x tensile strength of standard polyolefin | ✓ | ✓ | ✓ | ✓ | - | -55 to 150°C | 2:1 | FIT-350 |
| FEP | High shrink temp; thin wall thickness | ✓ | ✓ | ✓ | ✓ | - | -75 to 200°C | 1.2:1 | FIT-400 |
| PTFE | High shrink temp; thin wall thickness | ✓ | ✓ | ✓ | ✓ | - | -75 to 260°C | 1.5:1 | FIT-500 |
| Chlorinated polyolefin | Oil resistant | ✓ | ✓ | ✓ | ✓ | - | -75 to 121°C | 2:1 | FIT-600 |
| Flexible fluoroelastomer | High shrink temp | ✓ | ✓ | ✓ | ✓ | - | -40 to 200°C | 2:1 | FIT-650 |
| Polyethylene/polyester | Resists harsh environments | ✓ | ✓ | ✓ | ✓ | - | -40 to 125°C | 2:1 | FIT-FABRIC |
| Irradiated silicone rubber | Pliable | ✓ | ✓ | ✓ | ✓ | - | -50 to 200°C | 1.7:1 | FIT-FLEX |
| Irradiated PVDF | Transparent after shrink; 2x tensile strength of standard polyolefin | ✓ | ✓ | ✓ | ✓ | - | -55 to 150°C | 2:1 | FIT-CLEAR |

FIT Wire Management Solutions

General-Purpose Tubing

Our range of tubing includes traditional solid PVC tubing to convoluted slit loom tubing and spiral wrap. Our Zipper Tubing™ provides a professional finish to wiring installations by eliminating exposed wiring and providing added protection against flame, chemicals, and abrasion.

Flexible PTFE Tubing

To improve the reliability of cable harnesses, PTFE tubing provides a heat and abrasion resistant wire insulator under the most adverse conditions. With an unmatched temperature range, exceptional abrasion resistance, and excellent dielectric properties, it maintains flexibility over its entire temperature range. Alpha offers both standard-wall and space-saving thin-wall versions.

Fiberglass Sleeving

Our fiberglass sleeving is used to provide extra protection for cable in a tough external environment, fitting comfortably over wire and cable without needing to be shrunk to size first. Combining flexibility with excellent abrasion resistance and high-temperature performance, our fiber glass sleeving is

available uncoated or coated with acrylic, PCV, or silicone to provide the best match to application requirements.

Woven Sleeving

Our expandable and nonexpandable woven sleeving gives you the range of performance you need for applications running from general purpose to extreme of abrasion, chemicals, and temperature. With eleven families, woven in different braid densities from materials ranging from PVC and nylon to PPS and PTFE, finding the right sleeving for your application is easy.

Lacing Tape

Alpha lacing tapes offer high tensile strength, flexibility, and knot retention, maintaining a wide contact area with the insulation so that it remains in place. Nylon has excellent tensile strength and resists acids, abrasion, flame, and fungus. Polyester has all the characteristics of nylon, but has better resistance to acids, and no appreciable discoloration.

- **0.012 to 0.014 in. (0.30 to 0.36 mm) thickness range**
- **High tensile strength**
- **Excellent knot retention**



EMI Shielding and Grounding

Our copper braid and tape helps achieve EMI protection or grounding.

Copper Braid

- **Flat, round, or oval configurations**
- **Tinned copper or silver-plated copper**
- **Allows 360° termination for low-resistance path to ground**

Copper Tape

- **Highly conductive adhesive backing**
- **0.5 to 2.0 in. (12.70 to 50.8 mm) width**
- **Approx. 5 dB better than other metal foil shielding tapes**



PTFE and Fiberglass Sleeving

| FIT PTFE and Braided Fiberglass Sleeving | | | |
|--|---------|-----------------|------------|
| Material | Feature | Characteristics | FIT Family |

| | | | |
|------|----------------------------|--|--------------------|
| PTFE | Thin wall Standard wall | -75°C to +260°C Excellent heat and chemical resistance Flexible wire protection for harnesses and ground straps Resistance to heat, oil, and abrasion | TFT-200 TFT-250 |
|------|----------------------------|--|--------------------|

| FIT Braided Fiberglass Sleeving | | | |
|---------------------------------|---------|-----------------|------------|
| Material | Feature | Characteristics | FIT Family |

| | | | |
|----------------|--------------------|-----------------|--------|
| Acrylic coated | Chemical resistant | -30°C to +155°C | AF-155 |
|----------------|--------------------|-----------------|--------|

| | | | |
|------------|-----------------|---|---------|
| PVC coated | General purpose | -20°C to +130°C High temperature, abrasion, and oil resistance Resists fraying, bending, and knotting | PIF-130 |
|------------|-----------------|---|---------|

| | | | |
|-----------------|-----------------------------|---|---------|
| Silicone coated | Extreme abrasion resistance | -70°C to +200°C Highly flexible routing Extreme abrasion resistance Superior electrical properties | PIF-200 |
|-----------------|-----------------------------|---|---------|

| | | | |
|----------|----------------------|---|---------|
| Uncoated | Extreme temperatures | -60°C to +648°C Extreme flexibility Extreme heat environments | PIF-240 |
|----------|----------------------|---|---------|

Tubing

| FIT General-Purpose Tubing | | | |
|----------------------------|---------|-----------------|------------|
| Material | Feature | Characteristics | FIT Family |

| | | | |
|-----|--------------|---|---------|
| PVC | Multipurpose | -20°C to +105°C Flexible wire protection for harnesses and ground straps 37 sizes from 0.022" to 2.5" | PVC-105 |
|-----|--------------|---|---------|

| | | | |
|--------------------------------|------------------------|---|----------------|
| PVC tubing Nylon connectors | Flexible, liquid tight | -18°C to +50°C Maximum flexibility Usable in extremely tight quarters | FNT SLC/RLC |
|--------------------------------|------------------------|---|----------------|

| | | | |
|----------------------|-------------|--|----|
| PE, nylon, PTFE, PVC | Spiral wrap | Wide range of materials, temperature ranges, and mechanical properties | SW |
|----------------------|-------------|--|----|

| | | | |
|--------------------------|----------------------|--|----------|
| PE tubing PP fittings | Convoluted slit loom | -40°C to +93°C Abrasion and fluid resistant Light weight Easy, flexible cable breakouts | Type 492 |
|--------------------------|----------------------|--|----------|

| | | | |
|-----|---------------|--|--------|
| PVC | Zipper tubing | -20°C to +105°C Loc-Trac® zipperlike closure Protection against flame, chemicals, and abrasion | ZIP-41 |
|-----|---------------|--|--------|

FIT Wire Management Applications

Harnessing

Make any wire harness organized, manageable, and neat with our tubing, sleeving, spiral wrap tubing, zipper tubing, and lacing tape. Our unique ZIP-GRP expandable enclosure sleeving allows easy re-entry and unlimited wire and cable break outs with its hook and loop fastener system.

Routing

Get the advantages of conduit in a flexible non-metallic, liquid-tight tubing and connection system that protects wire, copper cable, and fiber-optic cable in factories, offices, or underground installations.

Use our watertight tubing to replace rigid raceways where flexibility, re-entry, or re-usability is required. Additionally, Alpha offers slit looms to provide a convenient solution for your routing needs.

Shielding

Add shielding easily and quickly. We offer flat, round, and oval braided shielding for additional protection against EMI and for grounding protection. Our copper foil shielding tape is backed with a highly conductive, pressure-sensitive adhesive for use in a wide variety of EMI/RFI shielding applications in cable and connector assemblies.

Protection

Our rugged FIT sleeving is available in a range of materials and construction to give outstanding performance in a range of extreme applications:

- **Wide temperature ranges**
- **UV exposure**
- **Heavy abrasion and cut-through potential**
- **Outgassing**

Our rugged FIT sleeving is available in both expandable and wrappable versions.



Woven Sleeving

| FIT Expandable Woven Sleeving | | | |
|-----------------------------------|--------------------------------------|---|------------------------|
| Material | Feature | Characteristics | FIT Family |
| Polyester | General purpose | -75°C to +125°C Good abrasion and cut-through resistance Flame resistant (110) and flame retardant (120) versions | GRP-110 GRP-120 |
| PET | Non-fraying | -75°C to +125°C Good abrasion and cut-through resistance Flame resistant (110) and flame retardant (120) versions | GRP-110NF GRP-120NF |
| PET | Wrappable | -70°C to +125°C Bends tightly without distorting or opening Easy to install NF = flame retardant | GRP-130 GRP-130NF |
| Nylon polyamide | Advanced protection | -45°C to +150°C Extreme abrasion resistance without losing flexibility or durability Resists fuels, solvents, salt water, chemicals, and UV rays Expandable to 150% | GRP-160 |
| PPS | Advanced chemical resistance | -70°C to +200°C Resists acids, bases, solvents, and fuels Extremely lightweight | GRP-170 |
| Nylon | Maximum protection | -60°C to +150°C Superior abrasion resistance Smooth inner wall to prevent internal abrasion damage Resists fuels, solvents, salt water, chemicals, and UV rays | GRP-180 |
| PTFE | Extreme protection | -70°C to +280°C Cut and abrasion resistant Resists virtually all chemicals and UV rays Thermally stable Low outgassing | GRP-200 |
| PET | Wrappable with hook and loop closure | -75°C to +125°C Unlimited breakouts Abrasion and cut-through resistance Oil and solvent resistance | ZIP-GRP |
| FIT Non-Expandable Woven Sleeving | | | |
| Material | Feature | Characteristics | FIT Family |
| PET | Heavy duty | -70°C to +125°C | XS-100HD |
| Nylon | General purpose | -45°C to +120°C Tightly woven Excellent abrasion resistance and durability | XS-200N |
| Nylon | Maximum protection | -45°C to +120°C Excellent abrasion resistance Tightly woven Deflects high-pressure hose ruptures Resists fuels, chemicals, UV, rot, and vermin Smooth inner wall to prevent internal abrasion damage | XS-300 |

The cables you trust. The service you deserve.

Every application is critical and cable failure is not an option when the safety of your equipment and personnel is paramount. Specify Alpha Wire FIT wire management for extreme environments and crucial applications, since the integrity of your system is only as robust as the products you use.

Superior availability

Alpha offers FIT wire management products from stock in most sizes and constructions, in small quantities, so you can order them when you need them. Our products are available for same-day shipment, eliminating long lead times.

Service and support, second-to-none

Selecting the correct wire management products is essential to overall system reliability, performance, and safety. So we make it easy for you to select the right Alpha product for your specific application. Our online resources include a wire and cable selection guide, technical information, full product catalog, and a distributor locator to make it easy to select and get the cable or wire management product you need. Just visit **www.alphawire.com**!

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