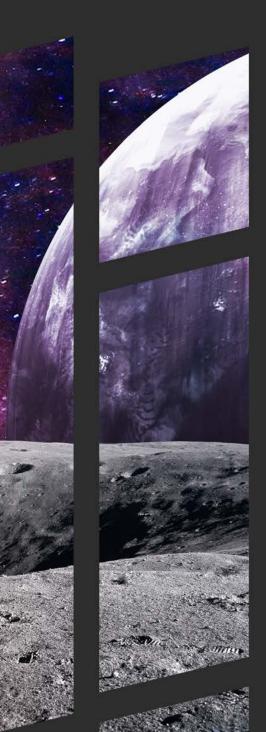
Z7 zippertubing_®

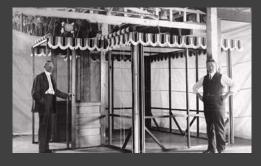






A LONG TRADITION OF MANUFACTURING EXCELLENCE













1900

1920

1940



Founder: W.A. Plummer Mfg. Co. [Years Active: 1901-1948]

1901

In 1901, Walter Allen Plummer Sr. founded the W.A. Plummer Manufacturing Company in Oakland, California. The business grew from a small specialty manufacturer of burlap and cotton bags for the banking and farming community, to the largest and most influential commercial textile company in the West.

Shortly after an earthquake and fire, the company moved across the bay to San

Francisco.



Unfurling the largest flag in the world by W.A. Plummer Mfg. Co., April 4th, 1917.



Within 20 years, the company grew exponentially to offices in both the Pacific Northwest and Los Angeles. W.A. Plummer Mfg. Co. was the largest canvas products company, supplying tents to the mining and sheep herding trades, as well as recreational areas such as tent houses in Yosemite National Park and other popular, large housing areas.



1922 W.A. Plummer Mfg. Co. branched out to the automotive industry.

1920

The Depression took a toll on the company, causing a dramatic reduction in operations. W. A. Plummer Mfg. Co. moved to Los Angeles in 1929 and remained there until after The Zippertubing® Company formed. During the transition, as well as several years following, W.A. Plummer Mfg. Co. continued to serve all around the United States.



1930s
Camping accessory advertisement.

Zippertubing® started in the corner of the W. A. Plummer Mfg. Co. building.





Walter Allen Plummer Jr. Founder: The Zippertubing® Co. [Years Active: 1938-1999]

1957

As the founder of The Zippertubing® Company in 1957, Walter Allen Plummer Jr. worked with his father for many years at W. A. Plummer Mfg. Co. Following WWII, industry needs shifted; plastics and synthetics were the future. Walter traveled the world in true entrepreneurial fashion, establishing ZT Japan and Zipper-Technik Germany manufacturing facilities. With numerous patents in his name, Walter Allen Plummer Jr. used cutting-edge technologies to surpass industry competitors.



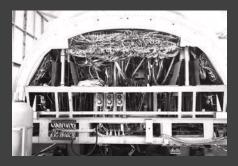












1960

1980

2000



Supplied hightemp wraps for launch facilities.

Pile jackets

installation.







President: The Zippertubing® Co. [Years Active: 1985-Current]

Zipper-Technik, GmbH founded in Germany.



Ticon, GmbH founded in Switzerland.



Walter "Terry" Plummer Chairman of the Board: The Zippertubing® Co.

[Years Active: 1988-Current]

Continuing the Plummer legacy, Walter "Terry" Plummer III took the reins from his father in 1988 and began working on the newest aerospace projects for new and previous clientele. Terry Plummer was able to learn from competitor's success, as well as their shortcomings, and implemented this knowledge in turning the company into a worldwide leader of the wire harness industry.



In 2012, Sean Allen Plummer was promoted to president of The Zippertubing® Company. By the end of 2012, Sean established two new manufacturing companies in China – ZT-Ren and ZT Fab. Today, industry-leading engineers with expertise in robotics, electrical, chemical, design, and materials support the continuous growth of the Zippertubing® companies worldwide. The Chandler, Arizona, corporate location provides the leadership for the global Zippertubing® divisions. Sean's vision combines

cohesive collaboration to exceed customers' requests with the perfect solutions, every time.

ongoing product development, proactive

innovation, a positive company culture, and



First international sales meeting, Totowa, NJ.

Zippertubing® (Japan) founded in Japan.



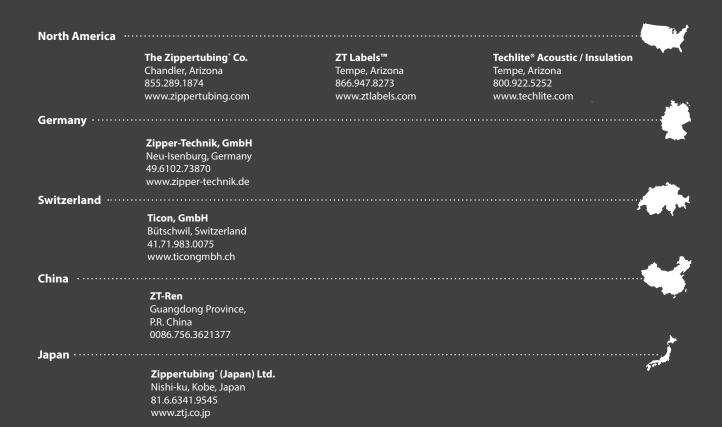
Zippertubing® designed NSF cable splice covers for The Arctic Neutrino detection program.

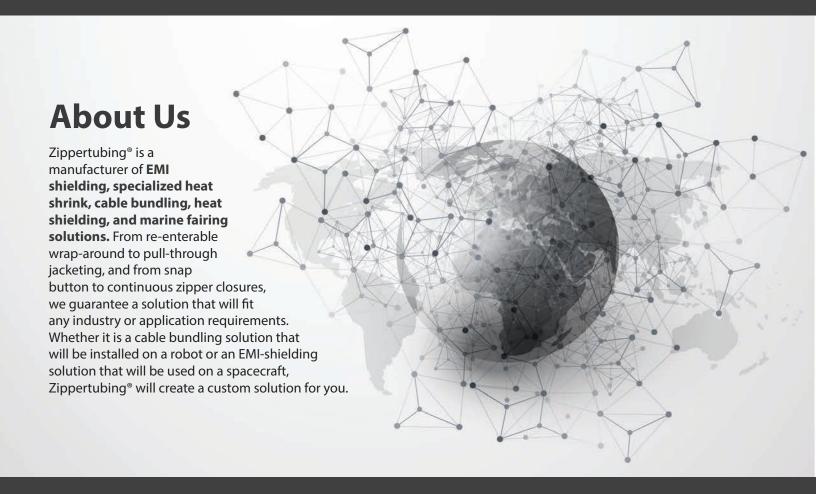
Zippertubing® moved its facility from Los



Angeles, California, to Chandler, Arizona.

ZT-Ren founded in China.







CABLE MANAGEMENT

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Custom Engineering

Since 1957, Zippertubing® has been solving every type of cable bundling, heat-shielding, EMI-shielding, specialized heat shrink and marine fairing component challenge. From under the sea to outer space, we have prototyped, manufactured, and shipped customengineered solutions for every type of industry. We specialize in creating unique custom solutions in-house from beginning to end, so you feel confident you will receive the perfect product every time.

No matter the size, shape, standards. or specifications, Zippertubing® will abide by any requirements to create a custom solution. If the project has material restrictions or weight limitations, we will create a solution to fit your unique application needs, rather than make your application fit the product. We will draw up, prototype, and refine to ensure the solution is exceeding your expectations.

View our materials on page 58.









































Speak to one of our engineers today!

855.289.1874

Capabilities



Because of Zippertubing's endless capabilities, we will work with you to develop a prototype for a custom solution specific to your needs. Zippertubing® is continually sourcing new materials and closures while developing new methods and creative solutions that will resolve any issue you may be facing.



In-House Engineering Team



RF & Heat Sealing



Automated Assembly Machinery



Automated Knitting/Braiding



Extruded Films/Tracks



CNC Cutting System (Laser/Knife)



Industrial Sewing/Assembly



Custom Lamination



Custom White Labeling

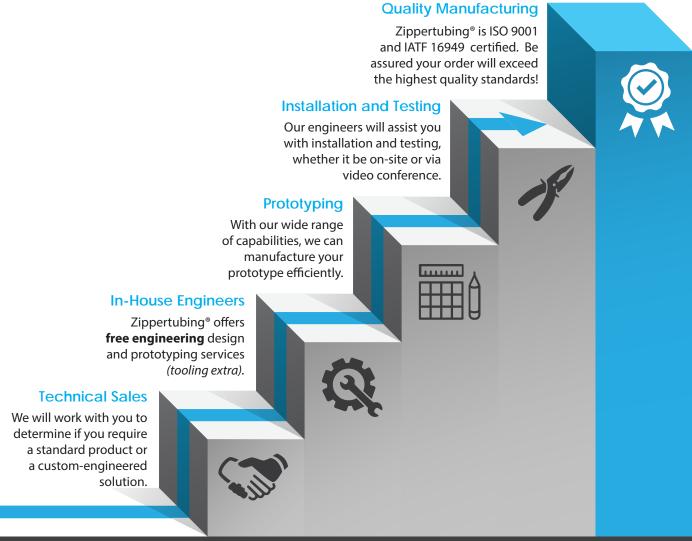


Automated Die Cutting



Full-Service Solutions

Engineer • Prototype • Manufacture





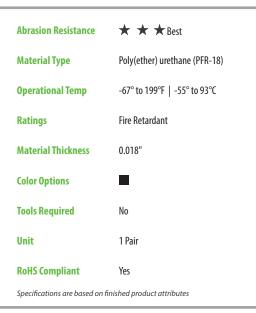


Flexible Robot Cable Sleeve

Channel-Wrap® is a wrap-around sleeve that can be manufactured from a multitude of materials and offers a variety of closure options. The advantage of using this sleeve is its ability to wrap around a robotic arm, a post, a railing, or any other component and then route cables, wires, or hoses through the channels built into the closure portion of the sleeve.

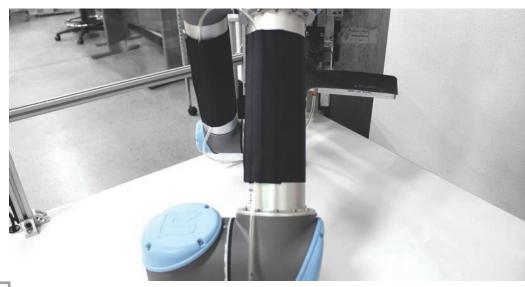
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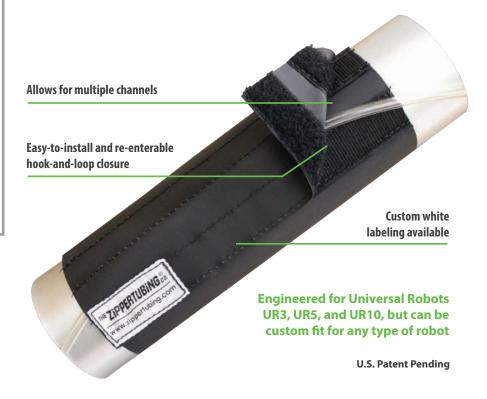
Cancer and Reproductive Harm | www.P65Warnings.ca.gov



<u>a</u>

Channel-Wrap® for models UR5 and UR5e is available on Amazon





GLASSICWRAP™





Low-Cost, High-Value Jacket and Track System

ClassicWrap™ is a cable bundling and protection solution that features our durable 63-20 jacketing and Z-Track closure. The fire-resistant, water-resistant, fungus-resistant, and corrosion-resistant jacketing is durable and can outlast most environmental conditions. ClassicWrap™ is versatile enough for all application or industry needs.

⚠ WARNING:

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★ ★ Best **Abrasion Resistance Material Type** Polyvinyl chloride (PVC) **Operational Temp** -4° to 221°F \mid -20° to 105°C MIL-I-631D, Type F, Form S, Class I; **Ratings** UL224, VW-1 **Material Thickness** 0.020" **Color Options Tools Required** ZTZ-SP Plier (sold seperately) **RoHS Compliant** Yes







CONNECTOR COVER ™



Premium 63-20 PVC Cover with an R-Track Closure

Connector-Cover™ is a cable connector protection solution that is made of a high-temperature PVC jacketing paired with the R-Track closure. Engineered to minimize debris and fluid exposure, Connector-Cover™ creates a fully enclosed jacket assembly to protect critical interconnected components. The R-Track closure is extremely easy to seal, as it is similar to a zipper storage sandwhich bag; no tools are required for installation.



Abrasion Resistance ★★★ Best

Material Type Polyvinyl chloride (PVC)

Operational Temp -4° to 221°F | -20° to 105°C

Ratings MIL-I-631D, Type F, Form S, Class I;

UL224, VW-1

Material Thickness 0.020"

Color Options

ioi options

Optional Tools SLR Slider

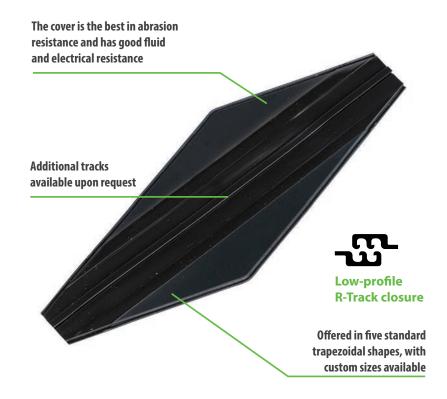
Elongation 200% min. | 450% max

RoHS Compliant Yes

Specifications are based on finished product attributes







HOOK-TT®



Hook-and-Loop Closure Jacketing System

The Hook-It® line of solutions are the hook-and-loop (Velcro®) closure that is heat-sealed or sewn to a jacketing material. Hook-It® offers the quickest and easiest closure system, as it is able to be installed without tools, and is the ideal choice for applications that may need access to components inside even after assembly.



Hook-and-loop closure (available in aramid, nylon, and polyester)







Aramid Nylon

Polyester

Variety of jacketing material options proves the Hook-It® solution is useful in any industry

Hook-It® (MTB)

PVC-coated polyester jacketing

Made from a fire-retardant, lightweight, abrasion-resistant, PVC-coated polyester fabric.

Hook-It® (Trevira)

Rugged halogen-free jacketing

Trevira fabric is self-extinguishing and UV- and ozone stabilized.

Hook-It® (VNH)

Rugged mil-spec jacketing

VNH fabric is waterproof and provides hydrocarbon fluid resistance along with better abrasion resistance in nearly any environment.

Hook-It® (TPU)

Thermoplastic polyurethane

TPU material is halogen-free, selfextinguishing, and suitable for use in the medical industry.





Lightweight Pull-Through Sleeve for Easy Navigation

Quick-Feed® is a pull-through sleeve that provides an easier way to navigate electrical or fiber-optic wires through conduits or similar areas. With an integrated handle to hook onto, Quick-Feed® allows components to be protected through installation by simply zipping, cinching, and pulling through.



Abrasion Resistance	★ ☆ ☆ Good
Material Type	Polypropylene belt webbing
Break Strength	600 lbs
Operational Temp	0° to 266°F -18° to 130°C
Material Thickness	0.050"
Jacketing Color Options	
Thread Color Options	
Tools Required	No
Closure Type	Plastic Coil Zipper
RoHS Compliant	Yes
Specifications are based on fini	ished product attributes



SNAP = GRIP®

Lightweight PVC-Coated Polyester Jacket

Snap-Grip® is a polyester, PVC-coated cable management solution that is equipped with nylon snap buttons. Snap-Grip® can be easily assembled with no tools and provides the opportunity for breakouts or access to components inside. Quickly organize and bundle while also protecting from abrasion with Snap-Grip®.

⚠ WARNING:

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★ ★ ☆ Better **Abrasion Resistance**

Material Type PVC-coated polyester

Operational Temp -40° to 179°F | -40° to 92°C

0.014" **Material Thickness**

Color Options

Tools Required

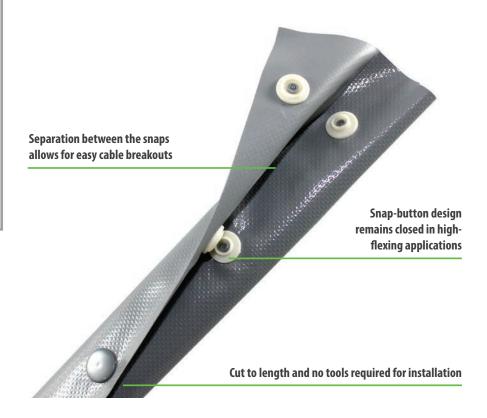
Unit Length 25', 50', 100', 164', Custom

RoHS Compliant











Durable Jacket with a Continuous Zipper Closure

Swift-Zip[™] is a cut-to-length cable management solution that is equipped with a continuous zipper closure. The zipper closure is laminated in a waterresistant film that allows fluid to simply bead off. With offering jacketing options that are military grade, flame retardant, fungus resistant and tear resistant, Swift-Zip™ can be used for a variety of applications that need cable bundling and protection.



⚠ WARNING:

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Swift Zipper Tool

Water resistant

Continuous zipper closure with a removable zipper pull Industry first in offering a zipper closure that can be cut to desired length

PFR-10

Poly(ether) urethane (Non-PVC)

-67° to 225°F | -55° to 107°C **Operational Temp**

Closure 3mm Nylon Zipper (Continuous)

Material Thickness 0.010"

Material Color

Material Type

RPU-17

Reinforced polyurethane (Non-PVC)

-40° to 159.8°F | -40° to 71°C

3mm Nylon Zipper (Continuous)

0.017"

Other jacketing materials available upon request

Z-COILTM



Self-Closing Wrap-Around Wire or Cable Sleeve

Z-Coil[™] is a split sleeve that selfwraps closed, providing exceptional cable bundling and protection. **Z-Coil**[™] is currently being utilized for the aftermarket restoration and high-production automotive and aviation manufacturing industries due to its quick and easy installation around wires and cables, superior abrasion resistance, and broad temperature range.



Abrasion Resistance





Material Type

Woven polyester

Operational Temp

-58° to 302°F \mid -50° to 150°C

Ratings

Halogen-free, self-extinguishing

Material Thickness

0.014"

Color Options



Tools Required

No, but available

Unit Length

Custom

RoHS Compliant

Yes







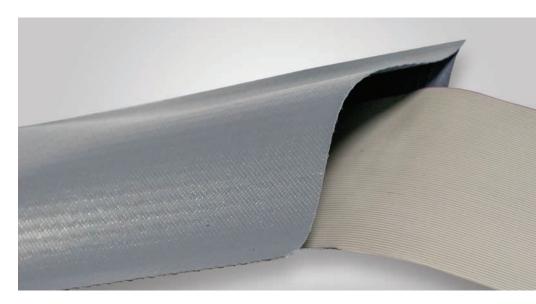


Economical Pull-Through Jacketing System

Z Flex® is an economical pull-through solution that is perfect for flat cables. The double heat-sealed edges provide complete 360° bundling and protection of components inside. Equipped with a nylon oxford cloth leader, **Z Flex**® allows for fast and easy pull-through installation of cables or wires.



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Pull your flat cables through using the nylon leader

Highly flexible, abrasion-resistant jacketing available in many different materials

Available in many standard sizes to fit the most popular flat cable sizes, ranging from 20 to 64 conductors







Lightweight Wrap-Around Jacket System

Z-Wrap® is a wrap-around cable bundling and protection solution that is equipped with a high-strength acrylic adhesive and a jacketing material. The acrylic adhesive is lined with a paper release liner for an easy and clean application. Perfect for round, flat, or rectangular components, Z-Wrap® is engineered to allow for quick installation without the worry of disassembly or downtime.



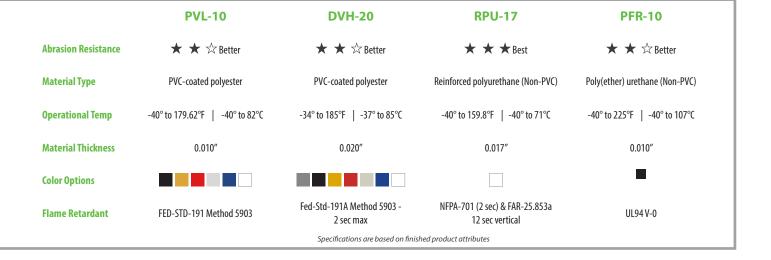
⚠ WARNING:

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Many jacketing types and colors to choose from

Adhesive closure

Cut to length and no tools required for installation









Pressure-Closure Track Jacketing System

The **Zip-On**® line is Zippertubing's original cable bundling and protection solution. Available in a wide range of extruded jacketing materials and pressure track combinations that can be cut to desired length, Zip-On® is extremely versatile for any industry, environment, or application requirements.



Cancer and Reproductive Harm | www.P65Warnings.ca.gov







R-Track



EZ-Track Z-Track



Choose from four different pressure track closures and many different jacketing materials

Plier tools available See Pressure Tracks on page 66

	PVL-10	DVH-20	PFR-18	63-20	RPU-17	VNH-23	TPU
Abrasion Resistance	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ★ Best	★ ★ ★ Best	★ ★ ★ Best	★ ★ ☆ Better	★ ★ ★ Best
Material Type	PVC-coated polyester	PVC-coated polyester	Poly(ether) urethane (Non-PVC)	Extruded PVC	Reinforced polyurethane	PVC-coated nylon fabric	Thermoplastic polyurethane
Operational Temp	-20° to 179.62°F -28° to 82°C	-20° to 185°F -28° to 85°C	-20° to 225°F -28° to 107°C	-4° to 221°F -20° to 105°C	-20° to 159.8°F -28° to 71°C	-20° to 167°F -29° to 75°C	-20° to 257°F -28° to 125°C
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Material Thickness	0.010"	0.020"	0.018"	0.020"	0.017"	0.023"	0.020"
Color Options							
UL Recognized	Yes* (only with Z-Track & R-Track)	No	Yes* (only with Z-Track)	Yes	No	No	No
			Specifications of	are based on finished produ	ıct attributes		





Lightweight, Abrasion- Resistant Zippered Sleeve

Zip-Wrap® is a zipper closure paired with a jacket to provide extremely quick and easy cable management. Whether the application requires rugged protection or lightweight bundling, **Zip-Wrap®** can be customized in a variety of jacketing materials and zipper styles to fit any unique requirements.









	PFR	PVL	RPH	RPA	SRA			
Abrasion Resistance	★ ★ ★ Best	★ ★ ☆ Better	★ ★ ★ Best	★ ★ ★ Best	★ ☆ ☆ Good			
Material Type	Polyurethane	PVC-coated polyester	Polyurethane-coated polyester	Polyurethane-coated aramid	Silicone-coated para-aramid / polyamide knitted fabric			
Operational Temp	-40° to 224.6°F -40° to 107°C	-40° to 180°F -40° to 82°C	-67° to 356°F -55° to 180℃	-4° to 302°F -20° to 150°C	-40° to 392°F -40° to 200°C			
RoHS Compliant	Yes	Yes	Yes	Yes				
Material Thickness	0.018"	0.010"	0.014"	0.014"	0.041"			
Color Options								
Specifications are based on finished product attributes								





Polyurethane Electrical Tape with Acrylic Adhesive

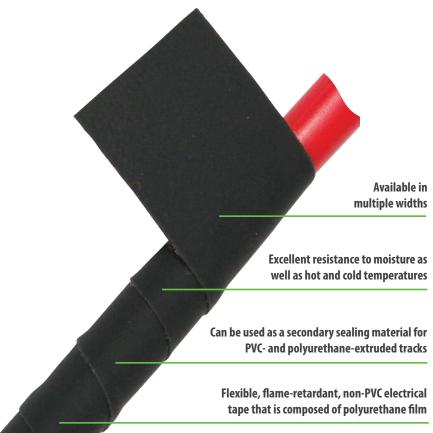
ZT-Tape® is a high-quality electrical tape engineered to insulate, cover, bundle, wrap, and secure components, splices, branch-outs, and transitions. **ZT-Tape**® revolutionizes traditional electrical tape and offers a superior substitute that will out shine any traditional option for insulating and securing electrical wiring.

⚠ WARNING:

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Lightweight Pull-Through Jacketing System

ZTT° is a pull-through cable bundling solution with a single seam that is heat sealed for complete 360-degree protection. Perfect for single components, wire bundles, or flat ribbon cables, ZTT° provides an economical solution while still offering exceptional protection.



Abrasion Resistance



Material Type PVC-coated polyester Operational Temp -40° to 179.62°F | -40° to 82°C 120 lbs/min (warp) | 100 lbs/min (fill) **Tensile Strength** Fluid Resistance Hydro resist - 150 psi **Material Thickness** 0.010" Flame Retardant FED-STD-191 method 5903 Mil-Spec MIL-C-43006G, type II, class 1 **Flexibility** ★ ☆ Better **Color Options RoHS Compliant** Yes Specifications are based on finished product attributes

★ ★ ☆ Better







Wrap-Around Heat Shrink with Steel Locking Channel

Link-N-Shrink® is a wrap-around heat shrink repair and sealing system that is equipped with an adhesive closure and stainless-steel locking channel. Link-N-Shrink® will provide a watertight seal that will securely repair or extend the lives of cables and/or cable joints exposed to the harshest of conditions.



Abrasion Resistance	★ ★ ★ Best
Material Type	Polyolefin heat shrink
Operational Temp	-31° to 212°F -35° to 100°C
Closure	Adhesive
Shrink Ratio	3:1
RoHS Compliant	Yes
Water Blocking	Yes
Fluid Resistance	Excellent
Corrosion Resistance	Excellent
Specifications are based on fir	nished product attributes











Wrap-Around, Polyolefin Heat Shrink with Special Adhesive

PRT® is a wrap-around heat shrink that is engineered for the most rugged of conditions. Made of a Mil-Spec tubing that can be cut to length, PRT® is the perfect choice for repairing or rejacketing components that have been damaged and can't be easily removed for replacement.

⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov

Abrasion Resistance ★ ★ Best

Material Type Cross-linked polyolefin

Operational Temp -67° to 275°F | -55° to 135°C

Tensile Strength 1500 psi. (after shrink)

Fluid Resistance Excellent

Material Thickness 0.035" - 0.055"

Flame Retardant UL224, VW-1, Self-extinguishing

Mil-Spec SAE-AMS-DTL-23053/5

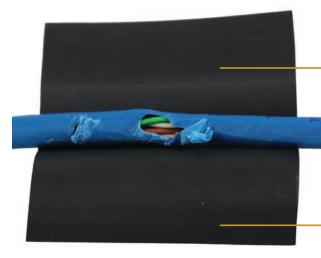
Elongation 200% (after shrink)

Color Options

Fungicide No growth

RoHS Compliant Yes

Specifications are based on finished product attributes



Wrap-around polyolefin heat shrink; no need to disconnect wires!

PRT® has passed all shortterm submersion tests and holds up to the harshest fluids, including jet fuel, Skydrol, and many others







Transition boots available









Environmentally Sealed PRT Heat Shrink Wrap

PRT® (ES) combines our traditional PRT® wrap-around heat shrink with our Z-Block® hot-melt adhesive to create a watertight environmental seal and repair. Z-Block® is non corrosive and can handle hightemperature conditions. PRT® (ES) is an ideal heat shrink solution for repairs that may be exposed to fluids or for

⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov

applications underwater.

Abrasion Resistance ★ ★ Best **Material Type** Cross-linked polyolefin Operational Temp (135) -67° to 275°F | -55° to 135°C Operational Temp (100) -67° to 212°F | -55° to 100°C **Tensile Strength** 1500 psi. (after shrink) Fluid Resistance Excellent **Material Thickness** 0.035" - 0.055" **Flame Retardant** UL224, VW-1, Self-extinguishing Mil-Spec SAE-AMS-DTL-23053/5 **Elongation** 200% (after shrink) **Color Options**

No growth

Yes

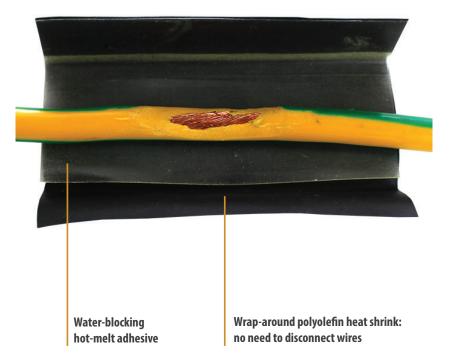
Specifications are based on finished product attributes

PRT® (ES) is available with either Z-Block® (100) or Z-Block® (135)

Environmentally sealed using Z-Block® hot-melt adhesive

Z-Block® on page 28







Fungicide

Water Blocking





Wrap-Around Polyolefin Heat Shrink with Special Adhesive

Shrink-N-Repair® is a wrap-around heat shrink that repairs and rejackets damaged, cracked, or chafed components. Unlike traditional heat shrink tubes, Shrink-N-Repair® can be wrapped lengthwise around wires or cables for quick installation without downtime or disconnection.

⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov

Abrasion Resistance ★ ★ Best

Material Type Cross-linked polyolefin

Operational Temp -67° to 275°F | -55° to 135°C

Tensile Strength 1500 psi. (after shrink)

Fluid Resistance Excellent

Material Thickness 0.035" - 0.055"

Flame Retardant UL224, VW-1, Self-extinguishing

Mil-Spec SAE-AMS-DTL-23053/5

Elongation 200% (after shrink)

Color Options CL

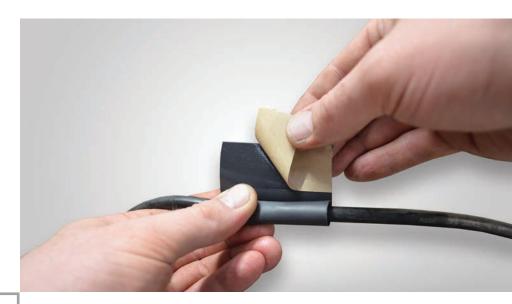
Dielectric Strength 500 volts/mil (after shrink)

RoHS Compliant Yes

Specifications are based on finished product attributes

a

12" & 36" long units are available on Amazon, including our small and larger versions









Hot-Melt Water-Blocking Adhesive

Z-Block® is a hot-melt heat shrink tape that is engineered for protecting wires or cables that may be exposed to environments with water, oils, or greases. Z-Block® can be used solely as an environmental seal to prevent fluids from damaging or penetrating components, but it can also be utilized with any of the Zippertubing® heat shrink solutions to create a 360-degree waterproofing seal.

Material Type Polyamide hot-melt tape

Material Thickness 0.012" [Z-Block® (100)]

0.008" [Z-Block® (135)]

Shelf Life 60 months

Fluid Resistance Waterproof

Flexibility Low (after melt)

Flame Retardant No

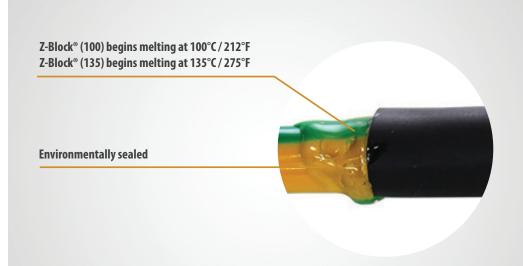
Tape Width 1" & 2" wide (custom options available)

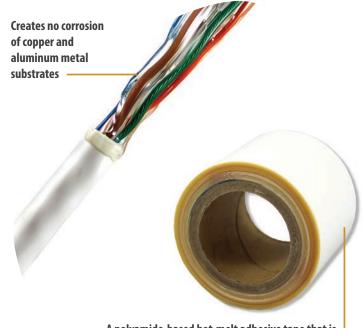
Unit Length 25 ft. roll, sold in 2 packs (5 ft. single

units available on Amazon)

RoHS Compliant Yes

Specifications are based on finished product attributes





A polyamide-based hot-melt adhesive tape that is compatible for use with polyolefin, polyvinyl chloride, and EVA-type heat-shrinkable tubing







SNAP = GRIP®

Snap-Grip® on page 15

ZTIIIITAPE®

ZT-Tape® on page 22



Shrink-N-Repair® on page 27



Z-Block® on page 28



Shrink-N-Shield® on page 3



Z-3250-Tape™ on page 37



Z-Shield® on page 4



ZT-Shield® on page 44



Heat-Wrap® on page 47



HeatReflect®(AFA) on page 49

CONNECTOR COVER ™



Shielded 63-20 PVC Cover with R-Track Closure

Connector-Cover™ (Shielded) is an EMI-shielding solution that is made of a PVC jacketing that is laminated to a SH1 aluminum shielding foil, and paired with the R-Track closure. Engineered to shield components from damaging EMI, Connector-Cover™ (Shielded) creates a complete, sealed enclosure to protect interconnected components. The R-Track closure is extremely easy to seal, as it is similar to a zipper storage sandwhich bag; no tools are required for installation.



Shielding Effectiveness 🗼 🫪



Material Type

Extruded PVC

Operational Temp

-4° to 221°F \mid -20° to 105°C

Tensile Strength

1,800 psi/min

Fluid Resistance

Excellent

0.020"

Material Thickness
Flame Retardant

UL224, VW-1

Mil-Spec

MIL-I-631D, Type F, Form S, Class I

Elongation

200% min | 450% max

Volume Resistivity

1010 ohms/cm. mm.

Fungicide

No growth

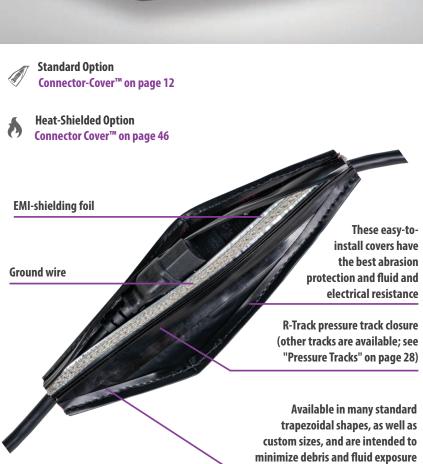
Dielectric Strength

700 volts/mil

Specifications are based on finished product attributes

⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov





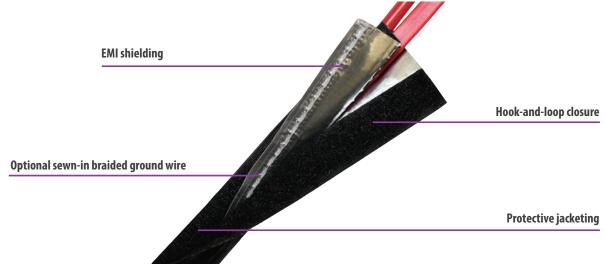
EMI-Shielded Jacketing with Hook-and-Loop Closure

Hook-N-Shield® is an EMI-shielding solution that combines the ease of a hook-and-loop (Velcro®) closure with a jacketing that is sewn or heat-sealed to a shielding material. Hook-N-Shield® doesn't require any tools for installation and also allows for quick and easy access to components even after assembly, if needed.



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SH1 (Foil) SHX-2 (SnCuFe) SHX-4 (SnCuFe) SHX-2 (S/S) SHX-4 (S/S) SHX-2 (SnCu)

Z-3250-CN Z-5080-CN Z-7200-C

EMI Shielding Materials on page 64

Pick a jacket

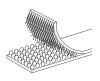


63-10 63-20 DVH-20 DVH-40 NET-30 PFR-18 PTG-5 PVL-10 RPU-17 TPU

VNH-23

Jacketing Materials on page 58

Pick a hook-and-loop



Nylon Polyester

Aramid

Additional Closures on page 68





Tin/Copper EMI Shielding Expandable Sleeving

Flex-Shield™ is a high-flexing, EMI-shielding sleeve. Due to its lightweight and non-metallic core material,
Flex-Shield™ is the "Ace for Space," providing EMI shielding and a durable barrier between components and environmental conditions.

⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov



Material Type Tin/copper foil-wrapped aramid fibers

aramiu iibers

Operational Temp -40° to 302°F | -40° to 150°C

Closure Type Pull-through braid

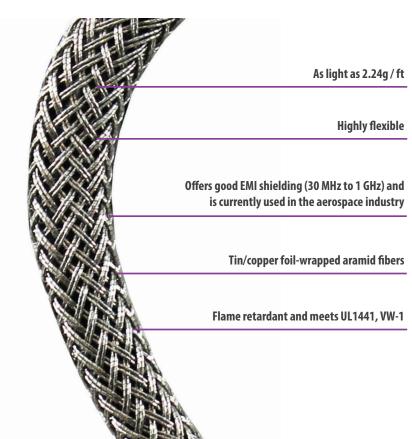
Material Thickness 0.025"

Flexibility ★ ★ Best

Flame Retardant UL1441, VW-1

Shielding Effectiveness ★ ☆ ☆ Good

RoHS Compliant Yes







One-Step Shielding and Heat-Shrink Tubing

The **Shrink-N-Shield**® line takes the ease of heat shrink tubing and combines it with EMI-shielding properties to create an "all-in-one" solution. **Shrink-N-Shield**® is a heat shrinkable tubing paired with an EMI-shielding cloth to protect wires or cables from damaging interferences while also providing a durable secondary jacketing.

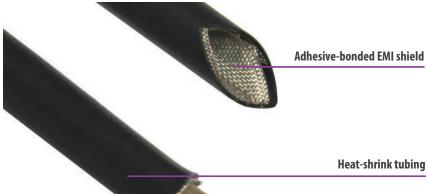
⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov





Some 3:1 & 4:1 versions are available on Amazon



	2:1	3:1	4:1	PVDF	FE	2X	HW	TW	NANO
Material Type	Polyolefin	Polyolefin	Polyolefin	Polyvinylidene fluoride	Fluoroelastomer	Polyolefin	Polyolefin heavy/thick wall	Polyolefin thin wall	Polyolefin & PTFE
Shrink Ratio	2:1	3:1	4:1	2:1	2:1	2:1	3:1	2:1	2:1, 3:1, 4:1
EMI Shielding	Z-3250 Z-7200	Z-3250 Z-7200	Z-3250	Z-3250	Z-3250	Z-3250 (dual layer)	Z-3250	Z-3250	Z-3250 Z-7200
Operational Temp	-67° to 275°F -55° to 135°C	-67° to 275°F -55° to 135°C	-67° to 275°F -55° to 135°C	-67° to 302°F -55° to 150°C	-67° to 302°F -55° to 150°C	-67° to 275°F -55° to 135°C	-67° to 275°F -55° to 135°C	-67° to 257°F -55° to 125°C	-67° to 275°F -55° to 135°C
UL Recognized	Yes	No	No	No	No	No	No	No	Yes
	Specifications are based on finished product attributes								





Shielded Wrap-Around Polyolefin Heat Shrink

PRT®(S) provides a rugged, wraparound heat shrink with EMI shielding.
PRT® (S) is an all-inclusive solution for components that need EMI shielding and a durable secondary jacketing.
Without the need for disconnection,
PRT® (S) can be quickly wrapped and sealed with the use of a standard heat gun.

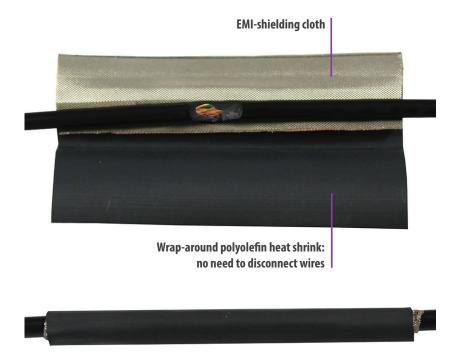
⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov





EMI-shielded transition boots also available









Environmentally Sealed Shielded PRT Heat Shrink

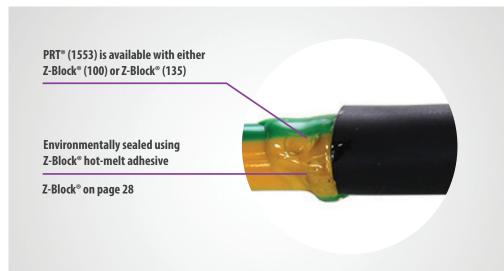
PRT® (1553) combines EMI shielding with heavy-duty heat shrink and a water-blocking hot-melt tape.
PRT® (1553) is the ideal solution for applications experiencing EMI, are in environments that are exposed to fluids or oils, need a quick and long-lasting repair.

⚠ WARNING:

Cancer and Reproductive Harm | www.P65Warnings.ca.gov

★ ★ Best **Abrasion Resistance Material Type** Cross-linked polyolefin -67° to 212°F | -55° to 100°C (100) **Operational Temp** -67° to 275°F | -55° to 135°C (135) **Tensile Strength** 1500 psi. (after shrink) **Dielectric Strength** 500v/mil (after shrink) **Material Thickness** 0.035" - 0.055" **Flame Retardant** UL224, VW-1, Self-extinguishing Mil-Spec SAE-AMS-DTL-23053/5 **Elongation** 200% (after shrink) **Color Options Fungicide** No growth **Water Blocking** Yes Specifications are based on finished product attributes

Environmentally Sealed Option PRT® (ES) on page 26





SNAP - GRIP® (AL)

PVC Jacket with SH1 EMI-Shielding Foil and Snap Closure

Snap-Grip® (AL) is an EMI-shielding solution that is equipped with nylon snap-buttons and a PVC jacket paired with the SH1 aluminum shielding foil. Snap-Grip® (AL) is versatile in that it can be used in a wide range of environments and applications while also offering the benefits of easy installation and exceptional EMI-shielding properties.

⚠ WARNING:

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Material Type PVC-laminated aluminum foil

Operational Temp 5° to 140°F | -15° to 60°C

Ground Braid 15 AWG tin-plated soft copper

Material Thickness 0.010"

Flexibility $\bigstar \Leftrightarrow Good$

Flame Retardant UL94 VTM equivalent (not UL recognized)

Tensile Strength 190N/3cm lengthwise; 130N/3cm

crosswise

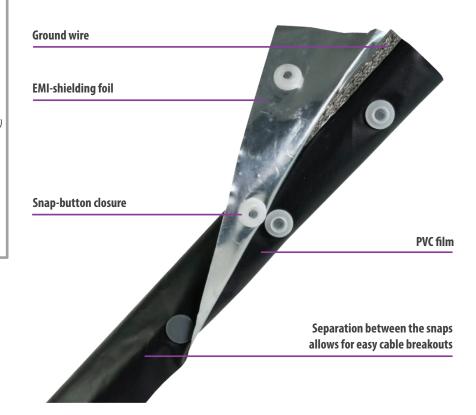
Shielding Effectiveness ★ ★ Best

RoHS Compliant No









Z-3250-TAPE™



Ni/Cu/Polyester Fabric **Shielding Tape**

The **Z-3250-Tape™** is a lightweight and flexible EMI-shielding tape that is easy to install. **Z-3250-Tape™** is the ideal EMI-shielding solution for cable splices, wire connectors, or branch-outs and can be the perfect shield under a jacketing or secondary insulation tape. With a conductive adhesive and paper release liner, **Z-3250-Tape™** is a quick solution to protect components from damaging interference.



★ ★ ☆ Better **Abrasion Resistance**

Material Type

Polyester and Ni/Cu/polyester shield

Operational Temp

-40° to 250°F | -40° to 121°C

Surface Resistivity

<0.1 ohms/sq

Material Thickness

0.004"

Flexibility

★ ★ Best

Elongation

27%

Tensile Strength

74-79 lbs/in

Shielding Effectiveness

★ ★ ☆ Better

RoHS Compliant Yes

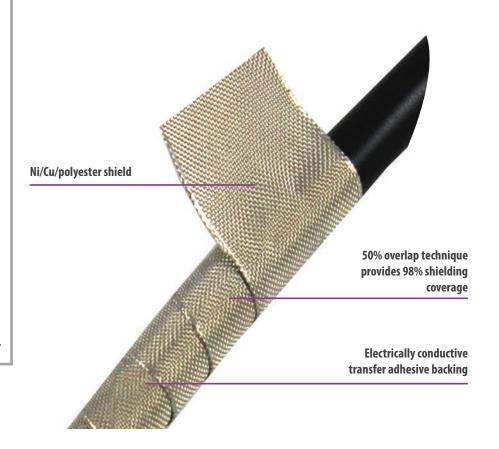
Specifications are based on finished product attributes

⚠ WARNING:

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60" units are available on Amazon





Non-Magnetic and Hypoallergenic EMI-Shielding Tape

The **Z-7200-Tape**[™] is a non-magnetic, nickel-free, halogen-free EMI-shielding tape that is perfect for protecting components with such requirements. The **Z-7200-Tape**[™] is equipped with a conductive adhesive and paper release liner for a quick and clean installation. For applications that have wires or cables that need shielding from EMI without nickel or magnetic properties, **Z-7200-Tape**[™] is the ideal choice.



Abrasion Resistance ★ ★ ☆ Better

Material Type Copper-plated nylon rip-stop fabric

Operational Temp -40° to 302°F | -40° to 150°C

Closure Conductive adhesive

Surface Resistivity <0.07 ohms/sq

Material Thickness 0.004"

Flexibility ★ ★ ☆ Better

Tensile Strength 25/50 lbs/in

Specifications are based on finished product attributes

Copper-plated nylon rip-stop fabric EMI shielding

Non-magnetic, halogen-free, and hypoallergenic

50% overlap technique provides 98% shielding coverage

Electrically conductive transfer adhesive backing





Wrap-Around Aluminum Foil with a Polyester Film

Z-Foil® offers a low-profile, lightweight EMI-shielding solution for round or flat components. **Z-Foil**® is the perfect choice for applications that require excellent shielding properties with a permanent adhesive closure and won't experience a great deal of flexing or movement.



Abrasion Resistance ★ ★ Best

Material Type Aluminum

Operational Temp -40° to 302°F | -40° to 150°C

Tensile Strength 13,500 psi

Dielectric Constant 3.0

Material Thickness 0.002"

Shielding Effectiveness

Flame Retardant

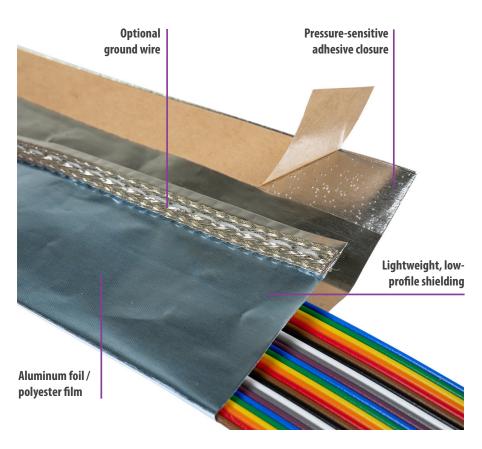
Yes

Elongation 90% at break

Electrical Resistance 15 ohms/mft @ 1.0"

RoHS Compliant

Specifications are based on finished product attributes









EMI-Shielding Knitted Mesh Tape

Zip-Mesh® combines the ease of a tape solution with EMI-shielding mesh. Offered in an aluminum or copper foil tape or just as the EMI-shielding mesh, **Zip-Mesh**® provides protection against interferences and works well alone or underneath another Zippertubing® foil or cloth. The adhesive closure securely seals around the components for a long-lasting solution.





The tape allows the joining of EMI-shielded jacket sections at cable splices, branch-outs, and the transition to connector hardware

	Zip-Mesh° (Standard-No Adhesive)	Zip-Mesh [®] (Standard)	Zip-Mesh® (CU)	Zip-Mesh® (AL)
Material Type	SnCu mesh	SnCu mesh	SnCu mesh-wrapped copper foil	SnCu mesh-wrapped aluminum foil
Operational Temp	-67° to 399°F -55° to 203°C	-40° to 300°F -40° to 149°C	-40° to 300°F -40° to 149°C	-40° to 300°F -40° to 149°C
Material Thickness	0.020"	0.020"	0.040"	0.040"
Shielding Effectiviness	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ★ ★ Best	★ ★ ★ Best
Flame Retardant	Not flammable	Not flammable	Not flammable	Not flammable
Flexibility	★ ★ ☆ Better	★ ★ ☆ Better	★ ☆ ☆ Good	★ ☆ ☆ Good
		Specifications are based on finishe	ed product attributes	





Wrap-Around EMI-Shielding Jacket

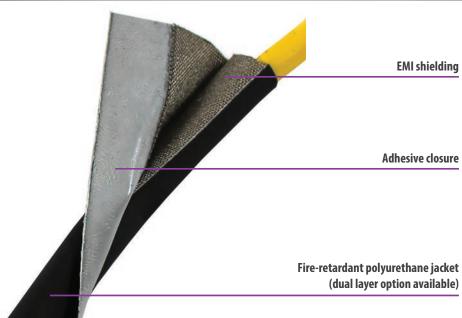
Z-Shield® is a wrap-around EMI-shielding solution that features a polyurethane film jacket with an adhesive closure. Without the need for installation tools, **Z-Shield**® can be quickly and easily assembled. For applications that need a flexible and thin yet durable EMI-shielding solution, **Z-Shield**® is the perfect choice.



⚠ WARNING:

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Extremely useful in electronics applications where limited space requires thin and flexible EMI shielding



Z-Shield® (2L)

Dual-wall, fire-retardant polyurethane jacketing with inner dielectric layer.

Z-Shield® (3250)

Highly flexible, lightweight EMI-shielding cloth. **Z-Shield®** (5080)

Flame-retardant, corrosion-resistant EMIshielding cloth. **Z-Shield® (7200)**

Non-magnetic, halogenfree EMI-shielding cloth. Z-Shield® (AL)

Aluminum foil shielding that provides highest RF attenuation.









Wrap-Around Interlocking Closure with Protective Jacketing

Zip-Shield® is a product line pairing a jacketing, shielding material, and pressure track closure together to create a re-enterable EMI-shielding solution. With a wide range of combinations of materials, **Zip-Shield**® can be completely customized to fit a variety of industry and application needs.



⚠ WARNING:

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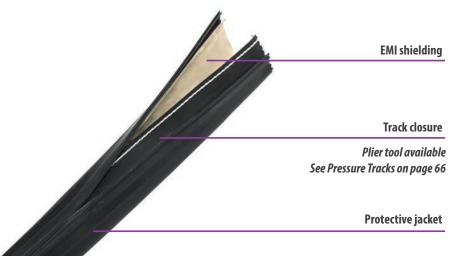
D-Track



EZ-Track



Z-Track



Pick a shield material



SH1 (Foil) SHX-2 (SnCu) SHX-2 (SnCuFe) Z-3250-CN SHX-4 (SnCuFe) Z-5080-CN SHX-2 (S/S) Z-7200-C SHX-4 (S/S)

"EMI Shielding" on page 64

Pick a jacket



63-10 PTG-5 63-20 PVL-10 DVH-20 RPU-17 DVH-40 TPU NET-30 VNH-23 PFR-18

"Jacketing Materials" on page 58

Pick a track closure



R-Track D-Track EZ-Track Z-Track

"Pressure Tracks" on page 66



EMI-Shielding Jacket Paired with a Zipper Closure

Zipper-Mesh™ is an EMI-shielding solution that is equipped with a zipper for a secure and simple closure system. The EMI-shielding mesh paired with a jacketing material create a long-lasting, protective solution. Zipper-Mesh™ is the perfect solution for applications that need an EMI-shielding product with easy installation and the ability to access components as needed.



Cancer and Reproductive Harm | www.P65Warnings.ca.gov



Pick a shield material



SHX-2 (SnCuFe) SHX-4 (SnCuFe) SHX-2 (S/S) SHX-4 (S/S) SHX-2 (SnCu)

"EMI Shielding" on page 64

Pick a jacket



63-10 PTG-5 63-20 PVL-10 DVH-20 RPU-17 DVH-40 TPU NET-30 VNH-23 PFR-18

"Jacketing Materials" on page 58

Pick a zipper style



Continuous Standard Tu-way Tu-way middle

"Available Zippers" on page 67





Polyurethane and Ni/ Cu/Polyester EMI-Shielding Tape

ZT-Shield® combines the high-quality ZT-Tape® with the exceptional EMI shielding of the Z-3250-CN cloth to produce an easy-to-apply yet durable EMI-shielding solution. ZT-Shield® applies like a tape with an electrically conductive adhesive and is ideal for applications that require a stronger jacketing with EMI-shielding properties.

⚠ WARNING:

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ZT-Shield® available on Amazon



Don't start from the ground up!

Zippertubing® offers free engineering design and prototyping services.

Whether it's a video conference or dropping in on-site, our engineers are here to help you every step of the way!





855.289.1874



zippertubing.com



sales@zippertubing.com

CONNECTOR COVER ™



Heat-Reflective Shield for Interconnected Components with Snap Closure

Connector-Cover™ (ALP-500) is a heat-shielding solution that is made of a rugged, high-temperature resistant jacketing, paired with stainless steel snap buttons. Engineered to shield connectors from high-temperature damage,
Connector-Cover™ (ALP-500) creates a fully enclosed jacket assembly to protect critical interconnected components.



Material Type Polyurethane-coated fiberglass

Operational Temp -58° to 350°F | -50° to 177°C

Abrasion Resistance ★ ★ Best

Material Thickness 0.016"

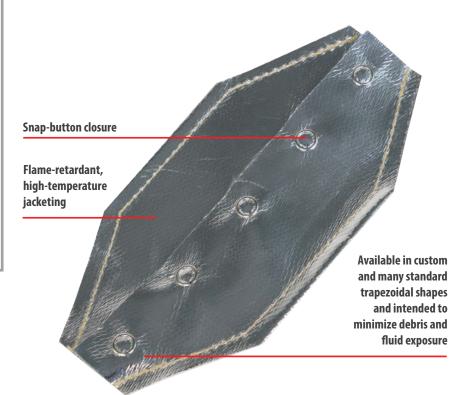
Closure Method Stainless-steel snaps

Flame Retardant Self-extinguishing

RoHS Compliant Yes

Thread Type Kevlar thread

Specifications are based on finished product attributes









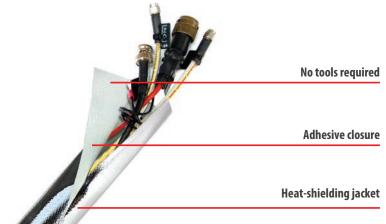
Wrap-Around Heat Shield with Adhesive Closure

Heat-Wrap® is a wrap-around heatshielding solution for components that need a barrier from moderate to high temperatures and abrasion. Depending on application requirements, there are two jacketing options: lightweight ALS-5 or rugged ALP-500. Heat-Wrap® is equipped with a high-temperature acrylic adhesive for a secure seal.









Material Type

material type

Jacketing Operational Temp

Adhesive Operational Temp

RoHS Compliant

Material Thickness

Flexibility

Tensile Strength

ALS-5

Aluminized fiberglass

-58° to 350.6°F | -50° to 177°C

-40° to 300°F days/weeks | -40° to 449°F minutes/hours

No

0.006"

★ ★ Best

2.0 lbs/in (warp) | 2.0 lbs/in (fill)

ALP-500

Polyurethane-coated fiberglass

-58° to 356°F | -50° to 180°C

-40° to 300°F days/weeks | -40° to 449°F minutes/hours

Yes

0.016"

★ ★ ☆ Better

144.5 lbs/in (warp) | 116 lbs/in (fill)

Specifications are based on finished product attributes



Aluminum-Coated Fiberglass Heat-Shielding Tape

HeatReflect® is a heat-shielding tape for wires or cables exposed to high temperatures. Depending on application requirements, there are two jacketing options: lightweight ALS-5 or rugged ALP-500. HeatReflect® is equipped with a high-temperature acrylic adhesive for a secure seal.





Comes standard in 25ft rolls



ALS-5

Abrasion Resistance

Material Type

Jacketing Operational Temp

Adhesive Operational Temp

RoHS Compliant

Material Thickness

Flexibility

Tear Strength

★ ☆ ☆ Good

Aluminized fiberglass

-58 $^{\circ}$ to 350.6 $^{\circ}$ F \mid -50 $^{\circ}$ to 177 $^{\circ}$ C

-40° to 300°F days/weeks | -40° to 449°F minutes/hours

No

0.006"

★ ★ ★ Best

2.0 lbs (warp) | 2.0 lbs (fill)

Specifications are based on finished product attributes

ALP-500

★ ★ Best

Polyurethane-coated fiberglass

-58° to 356°F \mid -50° to 180°C

-40° to 300°F days/weeks | -40° to 449°F minutes/hours

0.016"

★ ★ ☆ Better

144.5 lbs/in (warp) | 116 lbs/in (fill)





Customizable Aluminized Fiberglass Sheet with Full Adhesive Side

HeatReflect® (AFA) is a heatreflective solution used for a wide range of applications from automotive to residential. Since the entire back is adhesive, it can be cut with standard scissors to any size or shape desired. The acrylic adhesive is strong, provides a secure seal, and is equipped with a paper release liner.



Material Type Aluminized coated woven E-glass

Operational Temp

Continuous 356°F Flash exposure 995°F

Abrasion Resistance

★ ★ ☆ Better

Material Thickness 0.022"

Flexibility

★ ★ ☆ Better

Closure

Acrylic adhesive

Tensile Strength

70 +/- 30% N/cm

Specifications are based on finished product attributes

Have a shape in mind? Our enineering and production teams will work with you to produce any custom shape.

HeatReflect® (AFA) available on Amazon

Standard scissors can be used to cut any shape or size

Versatile uses from automotive to residential

Can be used in moderately high ambient temperature and extreme radiant temperature environments

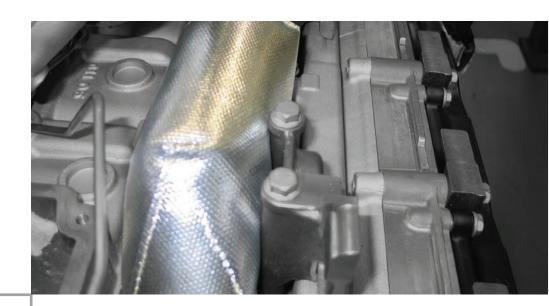
Full adhesive backing provides strong, secure stick and seal

Paper release liner offers quick and clean installation



Composite Heat Shielding up to 1,202°F

Insuflect® is a heat-shielding solution engineered to protect sensitive components located in close proximity to diesel exhaust systems. Insuflect® combines many different fiberglass materials that shield components from extremely high temperatures and stainless-steel snap-buttons for easy installation and re-entry.



Material Type

Aluminized fiberglass / silica glass

(3-layer composite)

Operational Temp

Up to 1,202°F | Up to 650°C

Abrasion Resistance

★ ☆ ☆ Good

Material Thickness

0.625"

Flexibility

★ ☆ ☆ Good

Flame Retardant

Non-flammable

Thread Type

Stainless-steel reinforced Kevlar thread

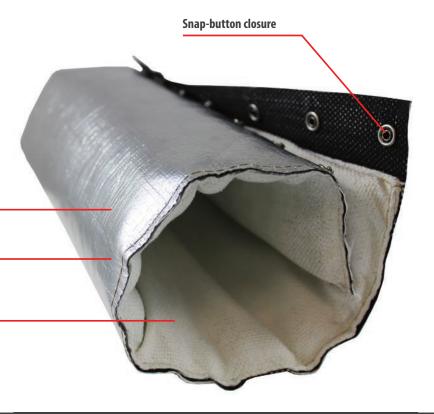
Specifications are based on finished product attributes

Aluminized fiberglass with fiber mat

Up to 1,202°F / 650°C continuous temperatures

Woven silica cloth inner jacket

MARNING: Cancer and Reproductive Harm | www.P65Warnings.ca.gov







Aluminum Silicone-Coated Fiberglass with Snap Closure

Snap-Grip® (SAM-1000) is a rugged heat-shielding solution that features stainless-steel snap-buttons for quick application and high-temperature conditions. The heat-reflective aluminum jacketing can withstand prolonged heat exposure, making Snap-Grip® (SAM-1000) ideal for the automotive industry.



Material Type

Aluminized silicone-coated woven

fiberglass

Operational Temp

-58° to 464°F | -50° to 240°C

Abrasion Resistance

★ ☆ ☆ Good

Material Thickness 0.033"

Closure Stainless-steel snaps

Flame Retardant Self-extinguishing

RoHS Compliant Yes

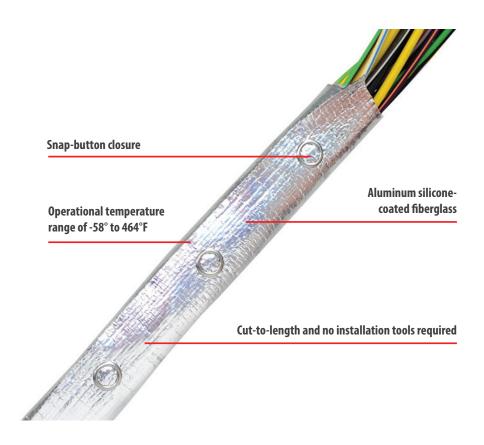
Tear Strength 342 lbs/in (warp) | 228 lbs/in (fill)

Ratings SAE J2302

Specifications are based on finished product attributes







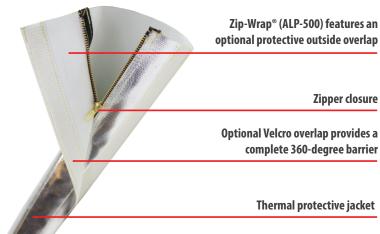




Heat-Shielding Jacket with Zipper Closure

Zip-Wrap® provides 360-degree protection from high temperatures with its thermal protective jacketing and brass zipper closure. For applications needing a solution that offers easy installation, the ability to access components quickly, and an efficient heat shield, **Zip-Wrap®** is the perfect solution.







ALP-500 Kevlar (KWF-24) ★ ☆ ☆ Good ★ ★ Best **Abrasion Resistance** Kevlar (KWF-24) **Material Type** Polyurethane-coated fiberglass -58° to 356°F | -50° to 180°C -50° to 350°F | -46° to 177°C **Operational Temp RoHS Compliant** ★ ★ ☆ Better ★ ★ Best **Flexibility Material Thickness** 0.016" 0.024" Flame Retardant Self-extinguishing N/A Specifications are based on finished product attributes





Heat- and EMI-Shielding Jacket with a Zipper Closure

Zipper-Mesh™ (ALHTG-65) is a truly all-encompassing solution – heat shielding, component protection, and EMI shielding, all in one solution. This product shields from EMI and high temperatures while offering rugged and flexible component protection. In one zip, Zipper-Mesh® (ALHTG-65) protects wires and cables from nearly any damaging hindrance.



Tensile Strength 10.16/in. (warp) | 8.64/cm (fill)

Abrasion Resistance ★ ☆ Good

Shielding Effectiveness ★ ☆ Good

Flexibility ★ ★ ☆ Better

Material Thickness 0.065"

Operational Temp -32° to 399.2°F | −0° to 204°C

Flame Retardant Yes

RoHS Compliant Yes

Specifications are based on finished product attributes



Zipper closure

EMI-shielding mesh







Lightweight, Highly Flexible Pull-Through Heat Shield

ZTT° is a pull-through solution that provides a 360-degree heat shield for wires or cables exposed to high temperatures. Sewn with standard Kevlar thread or stainless-steel reinforced Kevlar thread, ZTT° ensures complete shielding from any damaging heat while also providing protection for applications in rugged environments.





Many different jackets, diameters, and lengths available

350°F up to 1,202°F operational temperature (depending on material)



	ALS-5	ALP-500	ALR-550	ALHTG-65	
Abrasion Resistance	★ ☆ ☆ Good	★ ★ Best	★ ★ ☆ Better	★ ☆ ☆ Good	
Flexibility	★ ★ ★ Best	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	
Material Type	Woven glass fabric with a flame- retardant, heat-reflective, aluminum heat-barrier coating	Woven fiberglass cloth coated with a white polyurethane and a reflective aluminum	E-glass fabric with an aluminum metallized coating	Woven fiberglass fabric, with a double-coated, heat-reflective aluminum/PET film coating	
Operational Temp	-40° to 350.6°F -40° to 177°C	-58° to 356°F -50° to 180°C	-58° to 1,022°F -50° to 550°C	-32° to 1,202°F -36° to 650°C	
Material Thickness	0.006"	0.016"	0.024"	0.065"	
Tensile Strength	100 lbs/min <i>(warp)</i> 50 lbs/min <i>(fill)</i>	>350 daN/50 mm (warp) >250 daN/50 mm (fill)			
		Specifications are based	on finished product attributes		



HEAT-REFLECTIVE MATERIALS

Zippertubing® is a leading manufacturer of thermal protection sleeves and jackets that provide heat barriers designed to protect wiring, hoses, pipes, or a variety of other components from radiant heat sources.

MOORED TOWED FAIRINGS



Significantly Reduce Vibration, Noise, and Drag

Because normal water movement and turbulence creates noise and vibrations that can distort or destroy signals from instruments, similar to interference caused by EMI/RFI, Zippertubing® has developed its Marine Fairings product line to greatly reduce these problems. Moored Cable Fairings are designed to significantly reduce the vibration, noise, and drag created by water movement across the tether cable of a moored buoy.





Designed to significantly reduce vibration, acoustic noise, and drag created by water movement

Z-Track closure

One-piece construction

Excellent flexibility

MARNING: Cancer and Reproductive Harm | www.P65Warnings.ca.gov

MCF-10	(Moored)
--------	----------

Abrasion Resistance * * * Good

Material Type PVL-10: PVC-coated, woven polyester fabric

Operational Temp -4° to 179.62°F | -20° to 82°C

Material Thickness 0.010"

TCF-20 (Towed)

★ ★ ☆ Better

DVH-20: Woven polyester fabric impregnated with PVC

-4° to 185°F | -20° to 85°C

0.02

Specifications are based on finished product attributes

Medium-Duty Towed Cable Fairing with Z-Track Closure, To 5 Knots

Light-Duty Moored Cable Fairing with Z-Track Closure, Tidal Surge

YOU CAN CUSTOMIZE ANY OF OUR STANDARD PRODUCTS

Though we offer fully custom-engineered solutions, you don't always have to start from the ground up. See a product in our catalog that is close to what you had in mind? Talk to one of our in-house engineers and they'll work with you to customize the product to suit your particular needs! 855.289.1874 📞 Toll Free **57**

Jacketing Materials

Coated Fabrics | PVC Jacketing

					4 HA HO 6 HA HO 6 HA HA 6 HA HA 6 HA HA	
	DVH-20	DVH-40	FRC-15	NET-30	PVL-10	VNH-23
Material Type	PVC-impregnated polyester	PVC-impregnated nylon or polyester	Acrylic-coated polyester / cotton	PVC-coated polyester	PVC-coated polyester	PVC-coated nylon
Abrasion Resistance	★ ★ ☆ Better	★ ★ ★ Best	★ ☆ ☆ Good	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better
Thickness	0.020"	0.040"	0.015"	0.030"	0.010"	0.023"
Operational Temp	-34° to 185°F -36° to 85°C	-40° to 179.6°F -40° to 82°C	-22° to 140°F -30° to 60°C	-22° to 140°F -30° to 60°C	-40° to 179.62°F -40° to 82°C	-65° to 171°F -54° to 77°C
Tensile Strength	200 lbs. (warp) 190 lbs. (fill)	385 lbs. (warp) 125 lbs. (fill)	283 lbs. (warp) 214 lbs. (fill)	385 lbs. (warp) 255 lbs. (fill)	120 lbs. (warp) 100 lbs. (fill)	225 lbs. (warp) 225 lbs. (fill)
Flame Retardant	Fed-Std-191A method 5903 - 2 sec. max.	N/A	CCR title 19 and NFPA-701	FS L-S-125B - 10 sec. max.	Fed-Std-191 method 5903	Fed-Std-191 method 5903
Flexibility	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ★ ★ Best	★ ☆ ☆ Good	★ ★ ☆ Better	★ ★ ☆ Better
Fluid Resistance	Hydro resist - 225 psi	Hydro resist - 800 psi	Water resistant	Good, mild solvents	Hydro resist - 150 psi	Water resistant
RoHS Compliant	Yes	Yes	No	Yes	Yes	Yes
Color Options						
Mil-Spec	Mil-C-43006, Type I, Class 1	Mil-C-43006, Type I, Class 1	No	No	Mil-C-43006G, Type II, Class 1	Mil-C-20696, Type II, Class 2
	MILITARY GRADE	MILITARY GRADE			MILITARY GRADE	MILITARY GRADE

Coated Fabrics | Non-PVC Jacketing















	PTG-5	RPA-14	RPH-14	RPU-17	SRA-41	SRFG-32	Trevira
Material Type	PTFE teflon-coated, fine-weave fiberglass	Polyurethane-coated aramid	Polyurethane-coated polyester	Polyurethane-coated polyester	Silicone-coated para- aramid / polyamide knitted fabric	Silicone-coated fiberglass	Woven Canvas
Abrasion Resistance	★ ★ ☆ Better	★ ★ ★ Best	★ ★ ★ Best	★ ★ ★ Best	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆Good
Thickness	0.005"	0.014"	0.014"	0.017"	0.041"	0.032"	0.015"
Operational Temp	-99° to 500°F -73° to 260°C	-4° to 302°F -20° to 150°C	-67° to 356°F -55° to 180°C	-40° to 159.8°F -40° to 71°C	-321° to -196°F -392° to 200°C	-67° to 449.6°F -55° to 232°C	-40° to 320°F -40° to 160°C
Tensile Strength	70 lbs.	N/A	N/A	170 x 150 lbs.	60/50 daN min. (Warp & Fill)	N/A	N/A
Flame Retardant	Self-extinguishing	No	UL94 VTM-0, NFP 92-503	NFPA-701 (2 Sec.) & FAR-25.853a 12 sec. vertical	N/A	Excellent	Self-extinguishing
Flexibility	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ★ Best	★ ★ ☆ Better	★ ★ ★ Best
Fluid Resistance	N/A	N/A	N/A	Most solvents	N/A	Mil-C- 20696, sec. 4.2.4	Chemical resistant
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Color Options					•	-	
Mil-Spec	Mil-I-18746 and AA- 59300, Class 3	No	No	No	No	Mil-l-24576	No

MILITARY GRADE

Jacketing Materials

Extruded Films

	63-10	63-20	FEP-5	FEP-10	FSR-16
Material Type	Polyvinyl chloride	Polyvinyl chloride	FEP teflon film	FEP teflon film	Fluorinated synthetic rubber
Abrasion Resistance	★ ★ ☆ Better	★ ★ ★ Best	★ ★ ★ Best	★ ★ Best	★ ★ ☆ Better
Thickness	0.010"	0.020″	0.005″	0.010"	0.016"
Operational Temp	-4° to 221°F -20° to 105°C	-4° to 221°F -20° to 105°C	-238° to 401°F -150° to 205°C	-238° to 401°F -150° to 205°C	-20.2° to 392°F -29° to 200°C
Tensile Strength	1,800 psi	1,800 psi	2,500 psi	2,500 psi	1,200 psi
Flame Retardant	MIL-1-631	MIL-I-631	Self-extinguishing	Self-extinguishing	Self-extinguishing
Fluid Resistance	★ ☆ ☆Good	★ ☆ ☆ Good	★ ★ ★ Best	★ ★ ★ Best	★ ★ ★ Best
RoHS Compliant	Yes	Yes	Yes	Yes	Yes
Color Options			CL	CL	
Mil-Spec	MIL-I-631D, Type F, Form S, Class I	MIL-I-631D, Type F, Form S, Class I	N/A	N/A	Mil-R-83248C, Type II, Class 1
	MILITARY GRADE	MILITARY GRADE			MILITARY GRADE



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Heat-Shielding Materials

Moderate Temperature Up to 260°C / 500°F



















	SERVICE TARRETTE N								
	AFA-55	ALFG-28	ALK-19	ALP-500	ALS-5	ALSI-520	ALSR-15	ISOSAM-300	Kevlar
Material Type	Aluminized fiberglass	Fiberglass with a metallized polyester and polyurethane	Aluminized woven aramid cloth	Aluminized fiberglass	Aluminized fiberglass polymer coated	Silicone-coated fiberglass	Aluminized silicone-coated fiberglass	Aluminized polyurethane woven fiberglass with felt	Ballistic-grade, woven fabric Kevlar
Abrasion Resistance	★ ★ ☆ Better	★ ★ ☆ Better	★ ☆ ☆ Good	★ ★ ★ Best	★ ☆ ☆ Good	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better
Thickness	0.021"	0.026"	0.019"	0.016"	0.006"	0.018"	0.015"	0.090" or 0.173"	0.024"
Operational Temp	Continuous 356°F Radiant 995°F	-40° to 350.6°F -40° to 177°C	Continuous 350.6°F	-58° to 350°F -50° to 176°C	-58° to 350.6°F -50° to 177°C	-58° to 500°F -50° to 230°C	-67° to 500°F -55° to 260°C	-40° to 392°F -40° to 200°C	-321° to 350°F -196° to 177°C
Tensile Strength	40 lbs/in	571 lbs/in (warp) 542 lbs/in (fill)	350 lbs/in (warp) 300 lbs/in (fill)	400 lbs/in (warp) 286 lbs/in (fill)	100 lbs/in (warp) 50 lbs/in (fill)	400 lbs/in (warp) 343 lbs/in (fill)	150 lbs/in (warp) 150/in lbs (fill)	126 lbs/in (warp) 103/in lbs (fill)	1,600 lbs/in (warp) 1,800 lbs/in (fill)
Flame Retardant	N/A	FED STD 191, Method 5903	N/A	Self- extinguishing	N/A	Self- Extinguishing	10 sec. (flame)	N/A	Heat-resistant
RoHS Compliant	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Mil-Spec	No	No	MIL-C-87076	No	No	No	AMS-367 / Mil-C-27347	No	No
Ratings	N/A	N/A	N/A	N/A	SAE J2302	N/A	SAE AMS-3673 A and B, FED- STD-191	N/A	N/A

MILITARY GRADE

Moderate Temperature Up to 260°C / 500°F

High Temperature Up to 550°C/1,202°F





















SAM-400	SAM-500	SAM-1000	SAM-HT 500DR	ZIPFLECT 2.5	VACUFLECT	ALHTG-65	ALR-550	INS-650C	TEMP-MAT
Aluminized polymer-coated woven fiberglass	Aluminized polymer-coated woven fiberglass	Aluminized silicone-coated woven fiberglass	Aluminized polymer-coated woven fiberglass	PES fibers laminated to an Aluminum-PET foil	Aluminized silicone-coated fiberglass	Glass fiber jacket with aluminum foil	E-glass with a metallized polyester and polyurethane	Woven fiberglass fabric coated with a proprietary coating	Woven fiberglass
★ ☆ ☆ Good	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	★ ☆ ☆ Good	★ ★ ☆ Better	★ ☆ ☆ Good	★ ☆ ☆ Good
0.010"	0.017"	0.033"	0.020"	0.098"	0.015"	0.065"	0.024"	0.0315"	0.25" - 1.0"
-58° to 482°F -50° to 250°C	-58° to 482°F -50° to 250°C	-58° to 464°F -50° to 240°C	-67° to 500°F -55° to 260°C	-58° to 392°F -50° to 200°C	Continuous 626°F	-32° to 1,202°F -0° to 650°C	-58° to 1,022°F -50° to 550°C	Continuous 1,202°F Radiant 1,292°F	Continuous 1,200°F
257 lbs/in (warp) 143 lbs/in (fill)	286 lbs/in (warp) 171 lbs/in (fill)	343 lbs/in (warp) 228 lbs/in (fill)	286 lbs/in (warp) 171 lbs/in (fill))	23 lbs/in (warp) 34 lbs/in (fill)	325 lbs/in (warp) 246 lbs/in (fill)	627 lbs/in. (warp) 571 lbs.in (fill)	502 lbs/in (warp) 308 lbs/in (fill)	N/A	N/A
Self- extinguishing	Self- extinguishing	Self- extinguishing	Self- extinguishing	FMVSS302/ ECE R-118-02	Self- extinguishing	FED-STD-191 Method 5903	Non-combustible	Incombustible	Incombustible
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
No	No	No	No	No	No	No	No	No	MIL-I-16411 Type II, MIL-I-24244
N/A	N/A	SAE J2302	N/A	N/A	SAE J2302	N/A	N/A	N/A	N/A

MILITARY GRADE

EMI-Shielding Materials

Foil Shielding

Cloth Shielding













				Maria Caracter Control Control		NAME OF TAXABLE PARTY.	
	SH1 (Laminate)	Copper	SH1 (Foil)	Z-7200-C	Z-3250-CN	Z-5080-CN	
Material Type	Aluminum/polyvinyl chloride-laminated foil	Copper foil	Aluminum foil	Copper-plated nylon rip-stop	Ni/Cu/polyester	Ni/Cu/modacrylic	
Abrasion Resistance	★ ★ ★ Best	★ ★ ★ Best	★ ★ ★ Best	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	
EMI Shielding	★ ★ ★ Best	★ ★ ★ Best	★ ★ ★ Best	★ ★ ☆ Better	★ ★ ☆ Better	★ ★ ☆ Better	
dB Range	79-115	70-115	70-115	63-82	55-93	45-81	
Thickness	0.010″	0.005"	0.002"	0.005"	0.004"	0.009"	
Operational Temp	-4° to 221°F -20° to 105°C	-22° to 248°F -30° to 120°C	-70° to 302°F -57° to 150°C	-40° to 302°F -40° to 150°C	-40° to 250°F -40° to 121°C	-22° to 248°F -30° to 121°C	
Tensile Strength	27 lbs./in.	28 lbs./in.	27 lbs./in.	25-50 lbs./in.	74-79 lbs./in.	61.7 lbs/in (warp); 33.1 lbs./in. (fill)	
Flame Retardant	MIL-I-631	Not flammable	N/A	N/A	N/A	UL94 V-0	
Elongation	90% at break	10% -25% at break	90% at break	30%	27%	24% (warp); 31% (fill)	
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Yes	
Ratings	Mil-I-631D, Type F, Form S, Class I	N/A	N/A	N/A	N/A	N/A	
Surface Resistivity	N/A	N/A	N/A	<0.07 ohms/sq.	<0.1 ohms/sq.	<0.1 omh/sq.	

MILITARY GRADE

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Mesh Shielding













	SHX-2 (SnCuFe)	SHX-4 (SnCuFe)	SHX-2 (S/S)	SHX-4 (S/S)	SHX-2 (SnCu)	SHX-4 (SnCu)
Material Type	Tinned copper / steel wire mesh, 2-ply	Tinned copper / steel wire mesh, 4-ply	Stainless-steel wire mesh, 2-ply	Stainless-steel wire mesh, 4-ply	Tin-plated copper wire mesh, 2-ply	Tin-plated copper wire mesh, 4-ply
Abrasion Resistance	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good
EMI Shielding	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good	★ ☆ ☆ Good
dB Range	44-85	46-97	44-85	46-97	44-85	44-85
Thickness	0.015"	0.030"	0.015"	0.030"	0.015"	0.030"
Operational Temp	-148° to 400°F -44° to 204°C	-148° to 400°F -44° to 204°C	-422° to 1,600°F -252° to 871°C	-422° to 1,600°F -252° to 871°C	-67° to 399.2°F -55° to 204°C	-67° to 399.2°F -55° to 204°C
Tensile Strength	31.5 lbs./in.	63 lbs./in.	31.8 lbs./in.	63.6 lbs./in.	14.13 lbs./in.	28.26 lbs./in.
Flame Retardant	Non-flammable	Non-flammable	Non-flammable	Non-flammable	Non-flammable	Non-flammable
Elongation	N/A	N/A	N/A	N/A	N/A	N/A
RoHS Compliant	Yes	Yes	Yes	Yes	Yes	Yes
Ratings	ASTM B-452, Grade 40HS; ASTM B-520, Class T40HS	ASTM B-452, Grade 40HS; ASTM B-520, Class T40HS	Stainless steel, type 304	Stainless steel, type 304	ASTM B33-94, MS3304 Type 1	ASTM B33-94, MS3304 Type 1
Surface Resistivity	N/A	1.159 min. 1.225 max. @68 F (ohm/ft)	N/A	N/A	N/A	N/A

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Pressure Tracks

	Good		Bet	ter	Best	
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	R-Track	D-Tr	ack	EZ-1	rack	Z-Track
Profile	Low	Hig	gh	Me	dium	Low
Tool Required	Yes (slider tool available)	Ye (slider & plier t			es tool available)	Yes (plier tool available)
Closure Strength	★ ☆ ☆ Good	**	☆Better	**	☆ Better	★ ★ ★ Best
Flexibility	★ ★ ★ Best	★ ☆	☆ Good	**	★ ★ ☆ Better	
Bundle Size	Small—medium (typical bundle size: 1.5" or smaller)	Medium (typical bundle si		Small— (typical bundle :	Small—medium (typical bundle Size: 3/8" –4.0")	
Material Options	Polyvinyl chloride (PVC)	Polyvinyl ch	loride (PVC)	Polyvinyl chloride, thermoplastic polyurethane (TPU)		Polyvinyl chloride (PVC), poly(ether) urethane, or FEP Teflon
Dust Intrusion	Dust, no intrustion	Dust, no i	ntrustion	Dust, no intrustion		Dust, no intrustion
Water Intrusion	Water splash any direction, no intrustion	Water jet, n	o intrusion	Water jet, I	no intrusion	Water splash any direction, no intrustion (PVC); water jet, no intrusion (TPU)
Ideal Application	Flat jackets or smaller jackets that will have low stresses	Jacketing >1" in diameter that can be closed quickly and easily			at can be closed quickly and sily	Jacketing <4" in diameter that requires a strong and flexible closure
Installation Tool	SLR-Slider	SLD-Slider	ZTD-SP-Plier	EZ-Slider	ZTEZ-SP-Plier	ZTZ-SP-Plier

Zipper Options















	Nylon	Brass	Coil	Tu-Way	Hi-Temp Brass up to 500°F continuous	Tu-Way Middle Opening	Continuous
Configuration	Fixed (w/ pin, box & stops)	Fixed (w/ pin, box & stops)	Fixed (w/ pin, box & stops)	Fixed (w/ long pin & stops; can open from either end)	Fixed (w/ pin, box & stops)	Separating, fixed length (w/ double pin & box)	Continuous (w/no pin, box, & stops)
Slider	Single, locking, plastic (metal when applicable)	Single, locking, metal	Single, locking, plastic	Dual (tail to tail), locking, plastic (metal when applicable)	Single, brass, locking	Dual (head to head), locking, plastic (metal when applicable)	N/A
Stop	Plastic (metal when applicable)	Metal	Plastic (metal when applicable)	Plastic (metal when applicable)	Metal	None	N/A
Таре	Woven polyester, 5/8" & 3/4" wide	Woven polyester, 3/4" wide	Woven polyester, 5/8" wide	Woven polyester, 5/8" & 3/4" wide	Hi-temp aramid or Nomex, 9/16" & 3/4" wide	Woven polyester, 5/8" & 3/4" wide	Woven Polyester, 5/8" wide (min)
Break Strength	30-75 lbs./in. (varies with size)	50-90 lbs./in. (varies with size)	15-20 lbs./in. (typical)	30-50 lbs./in. (varies with size)	50-90 lbs./in. (varies with size)	30-50 lbs./in. (varies with size)	N/A
Tooth	Molded Delrin® Plastic, tooth	Metallic, brass tooth	Delrin® Plastic, coil	Molded Delrin® Plastic, tooth	Metallic, brass tooth	Molded Delrin® Plastic, tooth	Delrin® Plastic
Tooth Size Options	5mm, 10mm, and 15mm	5mm and 10mm	4.5mm or 5mm	5mm and 10mm	5mm	5mm and 10mm	3mm
Color Options		(brass teeth)			(brass teeth)		

Additional Closures



Tapes

	Plasticizer Resistant	Electrically Conductive	High Temperature up to 300°F continuous	Specialty Surface
Adhesive Type	Acrylic	Acrylic	Acrylic	Acrylic
Adhesion Strength	85 oz./in. (to steel)	55 oz./in. (to steel)	150 oz./in. (to steel)	140 oz./in. (to steel) 136 oz./in. (to polypropylene)
Flame Retardant	Yes	Yes	Yes	N/A
Thickness	0.005"	0.002"	0.005"	0.005"
Solvent Resistance	Good	Poor	Best	Best



Sewn

	Nylon	Kevlar high-temp applications up to 410°F	Nomex	S/S Reinforced Kevlar high-temp applications up to 1,650°F	
Material Type	Bonded, twisted polyamide filaments	Spun para-aramid filaments	Meta-aramid	Stainless-steel wire core, PTFE-coated Kevlar	
Flame Retardant	Flame retardant, melts	Decomposes at 448°C	Self-extinguishes w/ flame removal	N/A	
Tensile Strength	11.8 lbs. / min.	16 lbs. / min.	6 lbs. / min.	20.5 lbs. / min.	
Ratings	VT-295, Type II, Class A	A-A-55195	A-A-55195	N/A	
Color Options					
Elongation	26% max.	6% max.	25% min.	N/A	



Hook-and-Loop

	Nylon	Polyester	Aramid & Nylon
Flame Retardant	N/A	N/A	Yes
Mil-Spec	GSA Spec A-A-55126, Type II, Class 1	A-A-55126A, Type II, Class 3 Formerly Mil-F-21840 Type II, Class 3	GSA Spec A-A-55126, Type I, Class 2 Formerly Mil-F-21840 Type I, Class 2
Thickness	0.125"	0.100"	0.125"
Operational Temp	-71° to 199°F -57° to 93°C	-70.6° to 199°F -57° to 93°C	-70.6° to 350.6°F -57° to 177°C



Snaps

Stainless Steel Mechanical Snap-Buttons	Blackened Brass Snaps	
Stainless steel	Brass	



Seamless Heat Seal

Heat-sealed closures are created when a material is formed into a tube and the seam is heat-welded together to form a closed, seamless tubing. This technique creates tubes that far exceed the typical performance characteristics of conventional round extruded tubings. Choose this design when you need a pull-through jacket for short cable runs. It is cost-effective and protects against abrasions.

Additional Options

Rolled or Round Brass Grommets





These commercial-grade, brass, rolled-rim grommets utilize a spur washer that, when punched through a material, creates a strong, tear-resistant eyelet. The grommets conform to government specifications MIL-G-16491F, MS20230, NASM-16491, and NASM-20230.

Once the brass grommet is installed, a smooth coil is made, providing a uniform, one-piece appearance. These grommets are available in eight different sizes, ranging from 0.281" to 1.093".

PPW (50)



This medium-duty, polypropylene belt webbing is ideal for general-purpose strapping on many different types of indoor commercial applications. With breakage strengths of up to 600 lbs. and a thickness of 50 mil, this is the perfect choice for many types of custom applications. This product is available in 1", 2", and 3" widths and in many colors.

Delrin® Buckles



Molded plastic side-release style mechanical buckles are designed to be attached to woven webbing materials and create a quick-release connection between straps. Buckles have a thumb pressure plastic release latch that, when lifted, allows the webbing material to separate.

Wire Terminals



Normally located at the end of a conductor originating from your electrical components, wire terminals can also provide an additional connection point for other external circuits. Many sizes are available: choose from uninsulated, vinyl, or nylon-insulated wire terminals.

Mechanical Cam Lock Zinc Buckles



Zippertubing's cam lock zinc buckles are composed of molded zinc and feature a mechanical-style latch that is designed to be attached to a woven webbing material that creates a locking cinch. These buckles have a spring-loaded latch that, when lifted, allows the webbing material to slide; when released, their molded teeth lock the webbing material in place.

The mechanical, cam-style buckles are available in many size variations and can be ordered in either black or standard zinc.

Braided Ground Wires



Braided ground wires typically allow an electrical connection or transfer of the electromagnetic interference (EMI) from the component to a grounded connector. Zippertubing® offers many different gauges of ground wires to meet the needs of your application.

Four-Leg Metal Staple



Zipper-stops are low-profile, nickel-plated brass staples. These zipper-stops terminate the end of a zipper slide and are easy to install. Alternatively, these staples can combine materials together for a strong reinforcement. The four legs are bent on the reverse side to create the secure stop or closure.

Nylon Oxford Cloth



This nylon cloth leader makes pulling wires through a breeze. This cloth leader is a woven fabric made from DuPont® Type 6 mid-dull nylon yarn. The leader has a urethane back-coated finish and weighs 3.5 to 4.0 ounces per square yard. This material is water repellent and mildew resistant to outlast environments with fluid exposure.



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