



热缩保护解决方案

Heat Shrinkable Products

Tangshan Yuzhong Technology Co., Ltd.

Address: NO. A2157, 2ND FLOOR, BLOCK B, INNOVATION BUILDING, EAST XICHANG ROAD, GAOXIN ZONE, TANGSHAN
Zip code: 063000
Tel / WhatsApp: +86 13752771911
Website: www.chinaptfetube.com
Email: ptfetube@yozonetech.cn

Profile

Tangshan Yuzhong Technology Co., Ltd. specializes in the development and application of new materials and new energy. We provide green energy solutions for urban operations and automotive maintenance, while building robust, smart power grids to ensure the safe transmission of electrical and telecommunication signals.

Our extensive product portfolio comprises over 2,500 items, including heat shrink tubing, heat shrink busbar protection sleeves, cable accessories up to 220kV, cable branch boxes, ring main units, high- and low-voltage switchgears, WQFB fully insulated enclosed busways, eco-friendly high-temperature silicone wires, high-temperature PTFE tubing, conductor connecting tubes, heat shrink dual-wall composite tubing, silicone rubber tubes , PTFE sleeves, anti-slip patterned tubes for civilian use, halogen-free eco-friendly PE cross-linked wires, ceramifiable fire-resistant silicone rubber, and fire-resistant busways. These products are widely applied across diverse sectors such as electronics, power, metallurgy, petrochemicals, automotive, high-speed rail, coal mining, aerospace, and new energy.

Equipped with multiple state-of-the-art electron accelerators from international leaders, each valued at nearly 10 million RMB, we serve as a premier production base for heat shrink materials and products in China. Notably, our heat shrink tubing has ranked first in both production and sales volume domestically for three consecutive years, leading the entire industry nationwide.

Marketing Network

Guided by an innovative mindset, uncompromising quality, and attentive service, we confidently compete alongside the world's top enterprises. We are dedicated to providing premium, convenient, and safe electronic and electrical products to clients across diverse regions and industries globally, striving to create tangible value for our customers.

Our sales network spans over 40 major cities across China, and our products are exported to more than 70 countries and regions, including Europe, the Americas, and Southeast Asia. With consistently stable quality and reliable performance, our products have successfully established a strong brand reputation in the market.

Certifications & Intellectual Property

Guided by an innovative mindset, uncompromising quality, and attentive service, we confidently compete alongside the world's top enterprises. We are dedicated to providing premium, convenient, and safe electronic and electrical products to clients across diverse regions and industries globally, striving to create tangible value for our customers.

Our sales network spans over 40 major cities across China, and our products are exported to more than 70 countries and regions, including Europe, the Americas, and Southeast Asia. With consistently stable quality and reliable performance, our products have successfully established a strong brand reputation in the market.

Total Contents

A

Dual Wall & Other Products

Page A01-A58



Part No.	Item	Pages
SBRS-(2X)G	Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A01
SBRS-(3X)G	Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A03
SBRS-(4X)G	Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A05
SBRS-(2X)QF	Dual Wall Adhesive-Lined Heat-Shrink Tubing for Automotive Oil-pipe Protection	A07
SBRS-(3X,4X)GF	Dual Wall Adhesive Lined Cross -linked Polyolefin tubing	A09
SBRS-(3X)GLW	Flexible, Thick Adhesive-Lined Dual Wall Heat-Shrink Tubing	A11
SBRS-(3X)H	Halogen Free Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A13
SBRS-(4X)GR	High Shrink Ratio, Semi-rigid Dual Wall Adhesive-Lined Cross-Linked Polyolefin Tubing	A15
SBRS-(4X)GRF	Highly Flame Retardant Dual Wall Heat Shrink Polyolefin Tubing	A17
SBRS-(4X)GBK	Adhesive-Lined Cross-Linked Polyolefin Tubing	A19
SBRS-DZ	Heat Shrink Insulation Connectors	A21
SBRS-CAPS	Adhesive-Lined Insulating Caps	A23
SBRS-CAPS NF	Semi-rigid, Adhesive-Lined Insulating Caps	A25
SBRS-CAPS-RL	Semi-rigid, Adhesive-Lined Insulating Caps	A27
SBRSM	Flame Retardant Medium Wall Adhesive Lined Heat Shrink Tubing	A29
SBRSW	Flame Retardant Adhesive-Lined Heavy Wall Cross-linked Polyolefin Heat Shrink Tubing	A31
SBRSM-NF	Medium Wall Adhesive-lined Cross-linked Polyolefin Heat Shrink Tubing	A33
SBRSW-NF	Heavy Wall Adhesive-Lined Cross-linked Polyolefin Heat Shrink Tubing	A35
SBIRSTV	Medium Wall Adhesive-lined Heat Variable Heat Shrink Tubing	A37
WF	PTFE Teflon tubing	A39
RSFR-TFE	Heat Shrink Teflon Tubing	A41
RSFR-DR	Diesel Resistant Flexible Elastomeric Heat Shrink Tubing	A43
RSFR-VDF175 (F-175)	THIN WALL PVDF Heat Shrink Tubing	A45
RSFR-VT200 (F-200)	Thin Wall Fluoroelastomer Heat Shrink Tubing	A47
SRG-N/W	Silicone Rubber Braided Tube	A49
WEPDM	Flexible EPDM Heat-Shrinkable Tubing	A51
WRSJD	Adhesive Lined Cross-Linked Polyolefin Heat Shrink Tape	A53
WPET	Expandable Sleeve	A55
WOLVO	Skidproof Heat Shrink Tubing	A57

B Identification Products For Wire & Cable Page B01-B19 		
Part No.	Item	Pages
AMS	Military Identification Sleeves	B01
RSFR	Heat Shrink Identification Sleeves	B03
PSFR	High-temperature, Heat Shrinkable Identification Sleeves	B06
HMS	Diesel Resistant Identification Sleeves	B08
HNF	Halogen Free Low Smoke Low hazard Identification Sleeves	B10
PUR	Identification Tags	B12
RSFR/AMS/HMS/HNF	Identification Tags "Ladder Type" Thermal transfer	B14
WO-80500BK	Ribbon Data Sheet	B16
SOFTWARE	WOLABEL-1/3 Software for Wire Marker and Label Printing	B18

C Single Wall Products Page C01-C30 		
Part No.	Item	Pages
RSFR-H (H)	Thin wall halogen free, flexible heat shrink tubing	C01
RSFR-HCB (H)	Ultra thin wall halogen free, flexible heat shrink tubing.	C03
RSFR-H	Universal heat shrink tubing with excellent physical and mechanical properties	C05
RSFR-H(3X)	Universal heat shrink tubing with excellent physical and mechanical properties	C07
RSFR-HCB	Ultra thin wall, very flexible heat shrink tubing	C09
RSFR-(2X, 3X) YG	Yellow/Green stripped thin wall cross-linked polyolefin heat shrink tubing	C11
RSFR-135G(2X)	Flame retardant, multi-purpose heat shrink tubing	C13
RSFR-135G(3X)	Ultra thin wall, very flexible heat shrink tubing	C15
RSFR-105	Economical, non self-extinguishing Halogen free, heat shrink tubing	C17
RSFR-HT(2X)	150°C Flame retardant heat shrink tubing	C19
PO	Non-shrinkable, irradiated, flexible flame-retardant, polyolefin tubing	C21
WMPG	Heat Shrink Busbar Tube	C25
RSFRNH-BTM	Medium Voltage Cross-linked Polyolefin Bus-Bar Tubing	C27
WRS LD	Heat Shrink Neoprene Tube	C29
WRS GX	Optical Fiber Fusion Splice Protection Sleeves	C31

Comparison Table

Old Part No.	New Part No.
W-1-SB(2X)	SBRS-(2X)G
W-1-SB(3X)	SBRS-(3X)G
W-1-SB(4X)	SBRS(4X)G
GPFS	SBRS-(2X)QF
W-1-SB(4X)-GR	SBRS-(4X)GR
RSTFE	RSFR-TFE
F-175	RSFR-VDF175
F-200	RSFR-VT200
W-1-HL(2X,3X)	RSFR-(2X,3X)YG
W-1-H(RSFR-H)	RSFR-H(H)
W-1-PT	RSFR-H
W-1-HCB	RSFR-HCB(H)
W-1-PTCB	RSFR-HCB

Dual Wall & Other Products



We offer a wide range of dual wall products. The available combinations of jacket materials and adhesives allow the customer to choose just right tubing for the application and environmental conditions.

CONTENTS

Part No.	Item	Pages
SBRS-(2X)G	Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A01
SBRS-(3X)G	Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A03
SBRS-(4X)G	Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A05
SBRS-(2X)QF	Dual Wall Adhesive-Lined Heat-Shrink Tubing for Automotive Oil-pipe Protection	A07
SBRS-(3X,4X)GF	Dual Wall Adhesive Lined Cross-linked Polyolefin tubing	A09
SBRS-(3X)GLW	Flexible, Thick Adhesive-Lined Dual Wall Heat-Shrink Tubing	A11
SBRS-(3X)H	Halogen Free Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing	A13
SBRS-(4X)GR	High Shrink Ratio, Semi-rigid Dual Wall Adhesive-Lined Cross-Linked Polyolefin Tubing	A15
SBRS-(4X)GRF	Highly Flame Retardant Dual Wall Heat Shrink Polyolefin Tubing	A17
SBRS-(4X)GBK	Adhesive-Lined Cross-Linked Polyolefin Tubing	A19
SBRS-DZ	Heat Shrink Insulation Connectors	A21
SBRS-CAPS	Adhesive-Lined Insulating Caps	A23
SBRS-CAPS NF	Semi-rigid, Adhesive-Lined Insulating Caps	A25
SBRS-CAPS-RL	Semi-rigid, Adhesive-Lined Insulating Caps	A27
SBRSM	Flame Retardant Medium Wall Adhesive Lined Heat Shrink Tubing	A29
SBRSW	Flame Retardant Adhesive-Lined Heavy Wall Cross-linked Polyolefin Heat Shrink Tubing	A31
SBRSM-NF	Medium Wall Adhesive-lined Cross-linked Polyolefin Heat Shrink Tubing	A33
SBRSW-NF	Heavy Wall Adhesive-Lined Cross-linked Polyolefin Heat Shrink Tubing	A35
SBIRSTV	Medium Wall Adhesive-lined Heat Variable Heat Shrink Tubing	A37
WF	PTFE Teflon tubing	A39
RSFR-TFE	Heat Shrink Teflon Tubing	A41
RSFR-DR	Diesel Resistant Flexible Elastomeric Heat Shrink Tubing	A43
RSFR-VDF175 (F-175)	THIN WALL PVDF Heat Shrink Tubing	A45
RSFR-VT200 (F-200)	Thin Wall Fluoroelastomer Heat Shrink Tubing	A47
SRG-N/W	Silicone Rubber Braided Tube	A49
WEPDM	Flexible EPDM Heat-Shrinkable Tubing	A51
WRSJD	Adhesive Lined Cross-Linked Polyolefin Heat Shrink Tape	A53
WPET	Expandable Sleeve	A55
WOLVO	Skidproof Heat Shrink Tubing	A57

SBRS-(2X)G

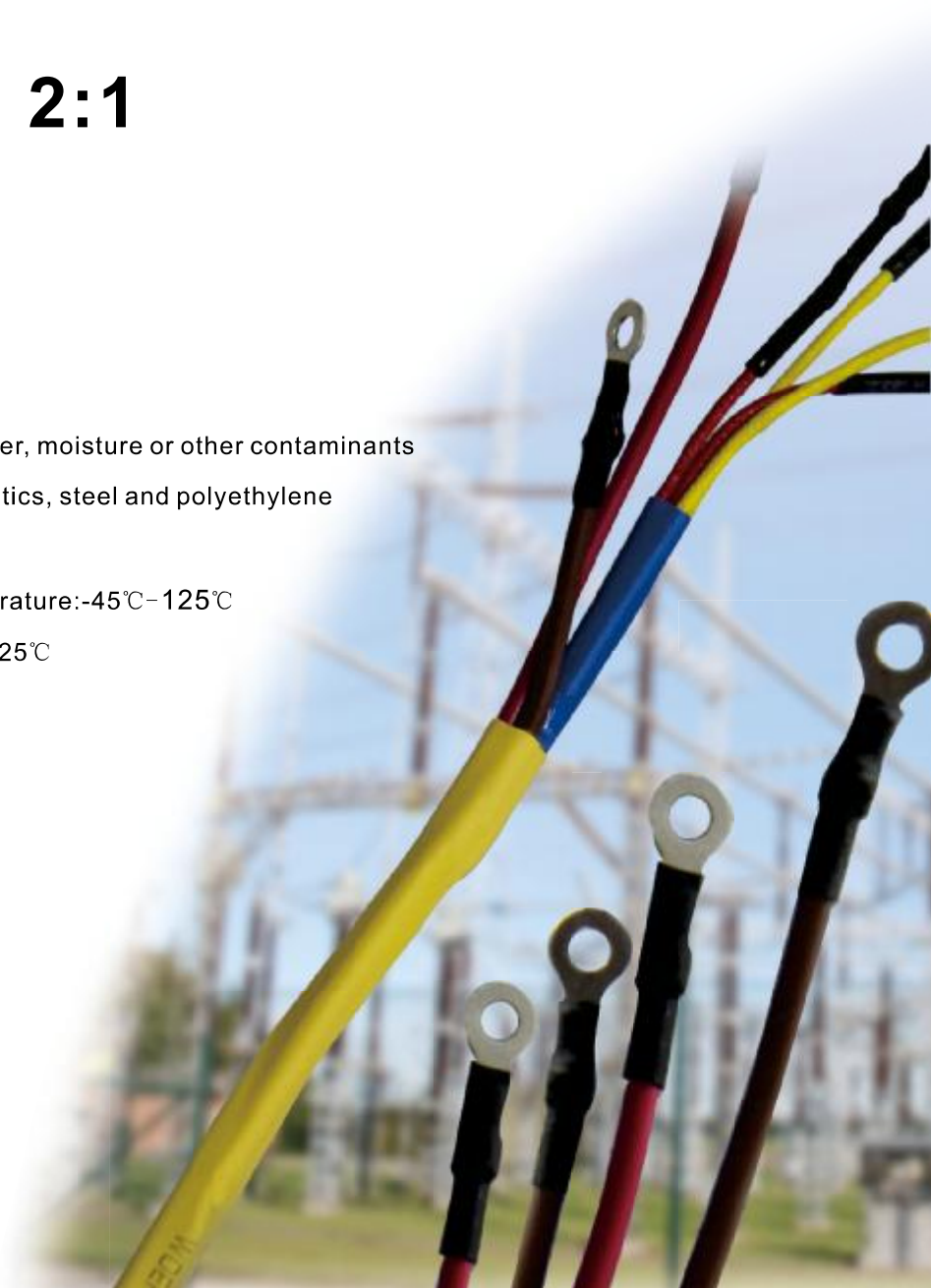
Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing

Adhesive lined heat shrink tubing with environmental sealing capability for a wide variety of electrical applications, including automotive and marine wire harness, wire splices, breakouts, and connector-to-cable transitions.



Features

- 2:1 shrink ratio
- Superior sealing against water, moisture or other contaminants
- Inner adhesive bonds to plastics, steel and polyethylene
- Out jacket flame retardant
- Continuous operating temperature:-45℃-125℃
- Fully shrink temperature:≥125℃



Dimensions

Size		As Supplied	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
1/16	1.6	1.6	0.8	0.60±0.30	0.30±0.2	200
3/32	2.4	2.4	1.2	0.70±0.30	0.35±0.2	200
1/8	3.2	3.2	1.6	0.70±0.30	0.35±0.2	200
3/16	4.8	4.8	2.4	0.80±0.30	0.40±0.2	100
1/4	6.4	6.4	3.2	0.80±0.30	0.40±0.2	100
5/16	7.9	7.9	3.9	0.90±0.30	0.45±0.2	100
3/8	9.5	9.5	4.8	0.90±0.30	0.45±0.2	50
1/2	12.7	12.7	6.4	0.95±0.40	0.45±0.2	1.22 OR 25M/Roll
5/8	15.9	15.9	7.9	0.95±0.40	0.45±0.2	1.22 OR 25M/Roll
3/4	19.1	19.1	9.5	1.00±0.40	0.45±0.2	1.22 OR 25M/Roll
1	25.4	25.4	12.7	1.10±0.40	0.50±0.2	1.22 OR 25M/Roll
1 1/4	31.8	31.8	15	1.15±0.40	0.50±0.2	1.22 OR 25M/Roll
1 1/2	38.1	38.1	19	1.25±0.40	0.50±0.2	1.22 OR 25M/Roll
1 3/4	44.5	44.5	22	1.35±0.40	0.55±0.2	1.22 OR 25M/Roll
2	50.8	50.8	25.4	1.50±0.40	0.60±0.2	1.22 OR 25M/Roll

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158℃X168hr	≥7.3	8.5
Elongation after aging(%)	UL224 158℃X168hr	≥200	350
Dielectric strength(kv/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴
Flammability	ASTM D2671B	Self-extinguish within 30s	

Hot Melt Adhesive Property

Property	Test Method	Stantard
Water Absorption	ASTM D570	≤0.2%
Sofening Point(℃)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(3X)G

Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing

Adhesive lined heat shrink tubing with environmental sealing capability for a wide variety of electrical applications, including automotive and marine wire harness, wire splices, breakouts, and connector-to-cable transitions.



Features

- 3:1 shrink ratio
- Low longitudinal shrinkage
- Flame retardant (out jacket only)
- Super sealing against water, moisture or other contaminates
- Continuous operating temperature:-45℃-125℃
- Fully shrink temperature:≥125℃



Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
3/32	2.4	2.4	0.8	0.80±0.30	0.40±0.20	200
1/8	3.2	3.2	1.0	0.90±0.30	0.40±0.20	200
3/16	4.8	4.8	1.6	1.05±0.30	0.40±0.20	100
1/4	6.4	6.4	2.2	1.25±0.30	0.45±0.20	100
5/16	7.9	7.9	2.7	1.35±0.30	0.50±0.20	100
3/8	9.5	9.5	3.2	1.45±0.30	0.50±0.20	50
1/ 2	12.7	12.7	4.2	1.65±0.30	0.50±0.20	1.22 OR 25M/Roll
5/8	15	15	5.2	1.80±0.30	0.55±0.30	1.22 OR 25M/Roll
3/4	19.1	19.1	6.3	1.95±0.30	0.60±0.30	1.22 OR 25M/Roll
1	25.4	25.4	8.5	2.00±0.40	0.60±0.30	1.22 OR 25M/Roll
1-1/4	30	30	10.2	2.15±0.40	0.65±0.30	1.22 OR 25M/Roll
1-1/2	39	39	13.5	2.45±0.40	0.60±0.30	1.22 OR 25M/Roll
2	50	50	17	2.75±0.40	0.75±0.30	1.22 OR 25M/Roll
5/2	64	64	21	3.05±0.40	0.80±0.30	1.22 OR 25M/Roll
3	75	75	25	3.05±0.40	1.05±0.40	1.22 OR 25M/Roll
7/2	90	90	30	3.10±0.50	1.05±0.40	1.22 OR 25M/Roll
4	100	100	34	3.10±0.50	1.05±0.40	1.22 OR 25M/Roll
5	125	125	42	3.10±0.50	1.10±0.40	1.22 OR 25M/Roll

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UI224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°CX168hr	≥200	350
Flammability	ASTM D2671B	Self-extinguish within 30s	Self-extinguish within 30s
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Hot Melt Adhesive Property

Property	Test Method	Stantard
Water Absorption	ASTM D570	<0.2%
Sofening Point(℃)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(4X)G

Dual Wall



SBRS-(4X)G
Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing

Adhesive lined heat shrink tubing with environmental sealing capability for a wide variety of electrical applications, including automotive and marine wire harness, wire splices, breakouts, and connector-to-cable transitions.



Features

- 4:1 shrink ratio
- Low longitudinal shrinkage
- Superior sealing against water, moisture or other contaminants
- Ideal for connector sealing covering large diameter differences
- Inner adhesive bonds to plastics, steel and polyethylene
- Flame retardant(out jacket only)
- Continuous operating temperature:-45℃-125℃
- Fully shrink temperature:≥125℃

Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
5/32	4.0	4.0	1.0	1.05±0.30	0.50±0.30	200
1/4	6.0	6.0	1.5	1.15±0.30	0.50±0.30	100
5/16	8.0	8.0	2.0	1.55±0.30	0.60±0.30	50
1/ 2	12.0	12.0	3.0	1.75±0.30	0.60±0.30	1.22 OR 25M/Roll
5/8	16.0	16.0	4.0	2.00±0.30	0.70±0.30	1.22 OR 25M/Roll
25/32	20.0	20.0	5.0	2.30±0.40	0.70±0.30	1.22 OR 25M/Roll
1	24.0	24.0	6.0	2.60±0.40	0.75±0.30	1.22 OR 25M/Roll
1-1/4	32.0	32.0	8.0	3.00±0.40	0.90±0.30	1.22 OR 25M/Roll
2	52.0	52.0	13.0	3.35±0.50	0.95±0.30	1.22 OR 25M/Roll

Technical Data

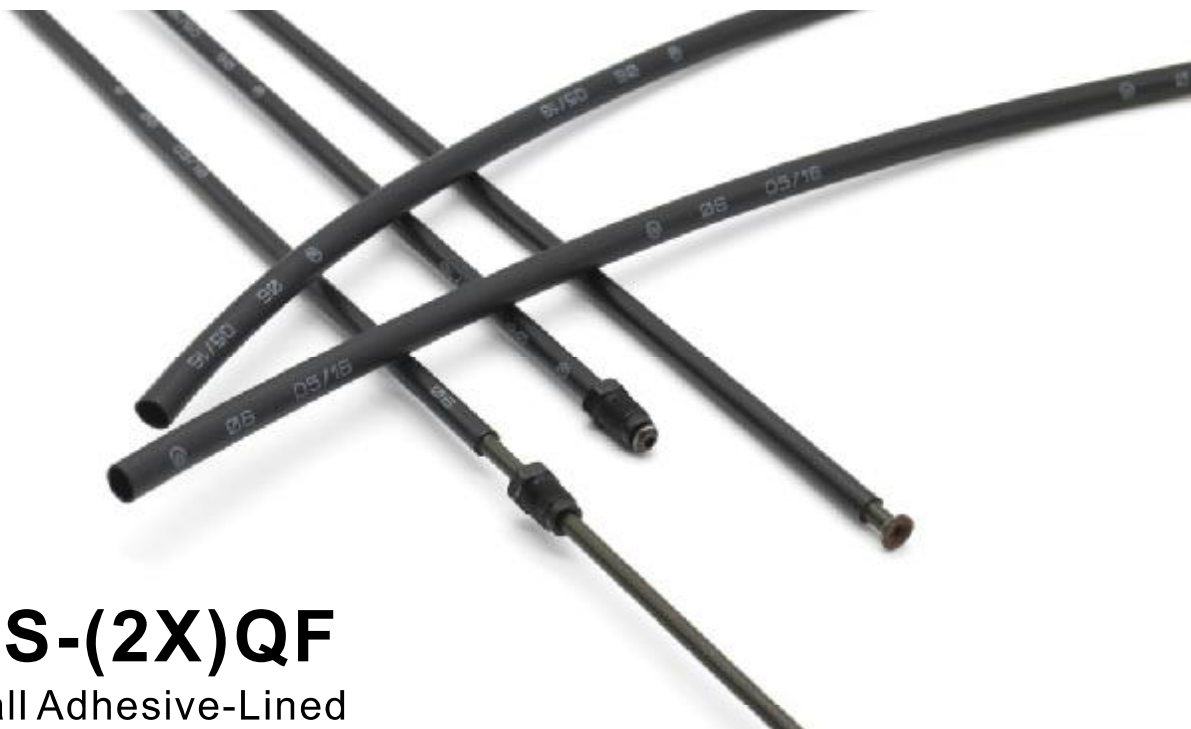
Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UI224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°CX168hr	≥200	350
Flammability	ASTM D2671B	Self-extinguish within 30s	Self-extinguish within 30s
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Hot Melt Adhesive Property

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(℃)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(2X)QF

Dual Wall



SBRS-(2X)QF

Dual Wall Adhesive-Lined
Heat-Shrink Tubing for Automotive Oil-pipe Protection

SBRS-(2X)QF Adhesive-lined Heat-shrinkable Tubing is specially designed for Automotive Oil-pipe Protection, providing preventive protection to break line, fuel line, hydraulic line and other metal pipeline which is subject to bending or clamping during manufacturing, installation or operation.



Features

- Semi-rigid outer jacket for mechanical damage prevention
- Adhesive inner layer for sealing against moisture and corrosion
- Easy installation
- High strength bonding, the adhesive layer is hard to be peeled off from pipeline
- Continuous operating temperature:-45℃-105℃
- Fully shrink temperature:≥125℃

Dimensions

Size	Expanded	After Recovery			Standard Package
mm	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Total Wall Thickness Nom(mm)	Adhesive Thickness Nom(mm)	Spool Length M/spool
Φ6.0	6	4.5	1.20±0.20	0.20±0.05	300
Φ8.0	8	6.1	1.30±0.20	0.20±0.05	200
Φ11.0	11	7.1	1.30±0.20	0.20±0.05	200
Φ13.0	13	9.8	1.30±0.20	0.20±0.05	100
Φ15.0	15	11.5	1.30±0.20	0.20±0.05	100

Technical Data

Property	Test Method	Standard Performance
Tensile Strength(MPa)	ASTM D2671	≥12
Elongation(%)	ASTM D2671	≥300
Longitudinal change	ASTM D2671	-10%~+10%
Tensile strength after aging(MPa)	120°CX24h	≥12
Non-deformability	140°C, 10min, 2kg/cm ² , loaded 5min	≤60%
Low-temperature impact	ASTM D 746	-35°C, no cracking
Impact resistance to fall	Room temperature&-40°CX30min, impacted by a weight of 200g, 0.5m high	no cracking
Stress-crack resistance	ASTM D 1693	no cracking
Chemical reagents resistance: 0.1mol/L H ₂ SO ₄ , 0.1mol/L NaOH, Brake fluid, Engine oil, Gasoline	No abnormal in appearance	20°C, 120hr

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.5%
Sofening Point(°C)	ASTM E28	105±5
Strength of pearing(AL)	ASTM D 1000	120N/25mm
Strength of pearing(PE)	ASTM D 1000	80N/25mm



SBRS-(3X, 4X) GF

Dual Wall Adhesive Lined Cross -linked Polyolefin tubing

Adhesive lined heat shrink tubing ideal for applications where both exceptional flame retardancy and environmental sealing capabilities are required



Features

- 3:1&4:1 shrink ratio
- Highly flame retardant
- Superior sealing against water, moisture or other contaminants
- High shrink ratio allows for coverage of irregularly shaped connectors and components
- Superior sealing against water, moisture and other contaminants
- Continuous operating temperature:-55℃-135℃
- Fully shrink temperature:≥125℃
- Meets MIL-DTL-23053/4

Dimensions

SBRS-(3X)GF

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
1/8	3.2	3.2	1.0	0.90±0.30	0.40±0.20	200
3/16	4.8	4.8	1.6	1.05±0.30	0.40±0.20	100
1/4	5.4	5.4	2.2	1.25±0.30	0.45±0.20	100
5/16	7.9	7.9	2.7	1.35±0.30	0.45±0.20	100
3/8	9.5	9.5	3.2	1.45±0.30	0.50±0.20	50
1/ 2	12.7	12.7	4.2	1.650±0.30	0.50±0.20	1.22 OR 25M/Roll
5/8	15	15	5.2	1.80±0.30	0.55±0.30	1.22 OR 25M/Roll
3/4	19.1	19.1	6.3	1.95±0.30	0.60±0.30	1.22 OR 25M/Roll
1	25.4	25.4	8.5	2.00±0.40	0.60±0.30	1.22 OR 25M/Roll
1-1/4	30	30	10.2	2.15±0.40	0.65±0.30	1.22 OR 25M/Roll
1-1/2	39	39	13.5	2.45±0.40	0.75±0.30	1.22 OR 25M/Roll
2	50	50	17.0	2.75±0.40	0.80±0.30	1.22 OR 25M/Roll

SBRS-(4X)GF

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
5/32	4.0	4,0	1.0	1.05±0.30	0.50±0.20	200
1/4	6.0	6,0	1.5	1.15±0.30	0.50±0.20	100
5/16	8.0	8,0	2.0	1.55±0.30	0.60±0.25	50
1/ 2	12.0	12,0	3.0	1.75±0.30	0.60±0.25	1.22 OR 25M/Roll
5/8	16.0	16,0	4.0	2.00±0.35	0.70±0.30	1.22 OR 25M/Roll
25/32	20.0	20,0	5.0	2.30±0.40	0.70±0.30	1.22 OR 25M/Roll
1	24.0	24,0	6.0	2.60±0.40	0.75±0.30	1.22 OR 25M/Roll
1-1/4	32.0	32,0	8.0	3.00±0.50	0.90±0.30	1.22 OR 25M/Roll
2	52.0	52,0	13.0	3.35±0.50	0.95±0.30	1.22 OR 25M/Roll

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥12	12.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	MIL-DTL-23053/4	≥8.4	8.5
Elongation after aging(%)	MIL-DTL-23053/4	≥100	350
Dielectric strength(kv/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(3X)GLW

Flexible, Thick Adhesive-Lined Dual Wall Heat-Shrink Tubing

Flexible, Thick Adhesive-Lined Dual Wall Heat-Shrink Tubing is manufactured by co-extrusion of polyolefin and hot-melt adhesive. Designed to provide both insulation and sealing for protected articles, Used to protect bundles wires and metal tubes against water and moisture.



Features

- Low longitudinal shrinkage
- Thick adhesive liner bonding to a wide variety of plastics, rubber and metals forms an effective barrier against fluids and moisture,
- Flexible
- Continuous operating temperature:-45°C–125°C
- Min shrink temperature:110°C
- Shrink ratio: 3:1



Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
1/8	3.2	3.2	1.0	0.90±0.30	0.45±0.20	200
3/16	4.8	4.8	1.6	1.20±0.30	0.55±0.20	100
1/4	6.4	6.4	2.2	1.25±0.30	0.55±0.20	100
5/16	7.9	7.9	2.7	1.35±0.30	0.65±0.20	100
3/8	9.5	9.5	3.2	1.35±0.30	0.65±0.20	50
1/2	12.7	12.7	4.2	1.55±0.40	0.75±0.20	1.22 OR 25M/Roll
5/8	15.0	15.0	5.2	1.65±0.40	0.75±0.20	1.22 OR 25M/Roll
3/4	19.1	19.1	6.3	1.90±0.40	0.85±0.20	1.22 OR 25M/Roll
1	25.4	25.4	8.5	2.00±0.40	0.90±0.20	1.22 OR 25M/Roll
5/4	30.0	30.0	10.2	2.05±0.40	0.90±0.20	1.22 OR 25M/Roll
1-1/2	38.1	38.1	13.5	2.35±0.40	1.05±0.20	1.22 OR 25M/Roll

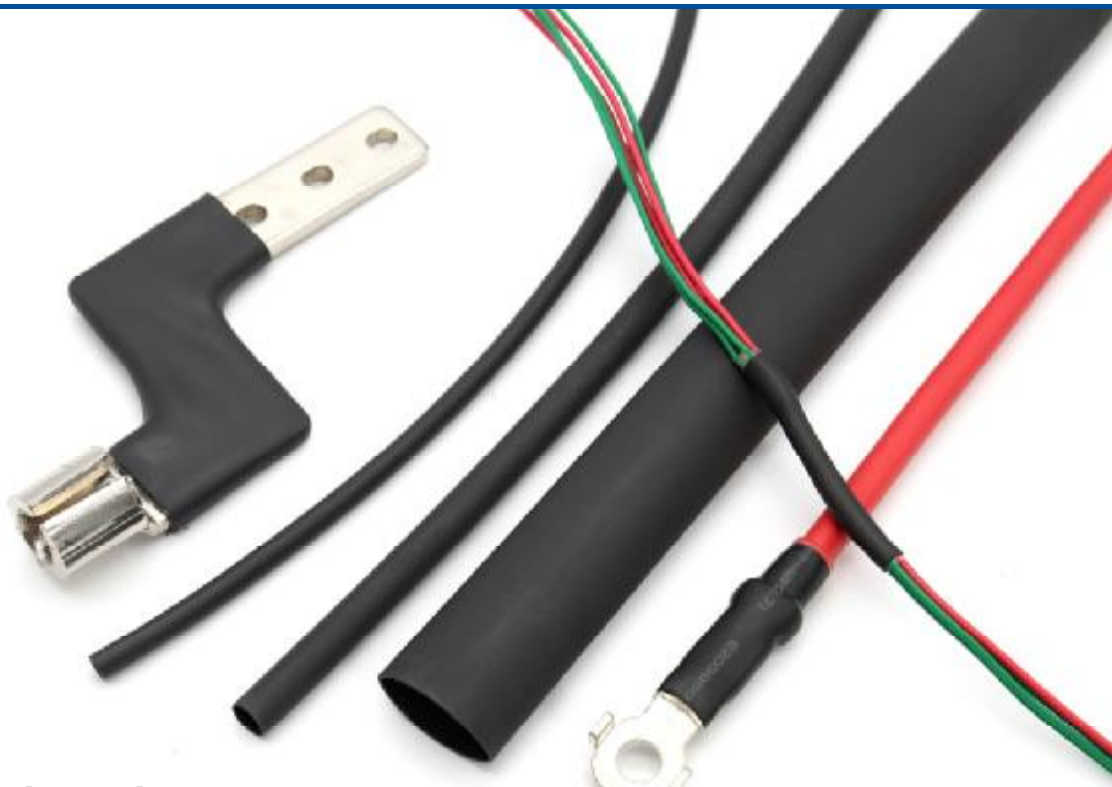
Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UI224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(3X)H



SBRS-(3X)H

Halogen Free Dual Wall Adhesive-Lined Heat-Shrink Polyolefin Tubing

Adhesive lined heat shrink tubing with environmental sealing capability for a wide variety of electrical applications, including automotive and marine wire harness, wire splices, breakouts, and connector-to-cable transitions.



Features

- 3:1 shrink ratio
- Halogen free
- Super sealing against water, moisture or other contaminates
- Continuous operating temperature:-45°C–125°C
- Fully shrink Temperature:≥125°C
- Shrink ratio: 3:1
- Sony compliant

Dual Wall

Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Total Wall Thickness mm	Adhesive Thickness mm	Spool Length M/spool
3/32	2.4	2,4	0.8	0.85±0.15	0.40±0.10	200
1/8	3.2	3,2	1.0	0.95±0.15	0.40±0.10	200
3/16	4.8	4,8	1.6	1.10±0.15	0.40±0.10	100
1/4	6.4	6,4	2.2	1.20±0.15	0.45±0.12	100
5/16	7.9	7,9	2.7	1.35±0.15	0.50±0.12	100
3/8	9.5	9,5	3.2	1.45±0.20	0.50±0.12	50
1/ 2	12.7	12,7	4.2	1.70±0.20	0.50±0.12	1.22 OR 25M/Roll
5/8	15	15	5.2	1.80±0.20	0.55±0.15	1.22 OR 25M/Roll
3/4	19.1	19,1	6.3	2.00±0.20	0.55±0.15	1.22 OR 25M/Roll
1	25.4	25,4	8.5	2.10±0.25	0.55±0.15	1.22 OR 25M/Roll
1-1/4	30	30	10.2	2.20±0.25	0.60±0.15	1.22 OR 25M/Roll
1-1/2	39	39	13.5	2.40±0.25	0.60±0.15	1.22 OR 25M/Roll
2	50	50	17	2.70±0.25	0.70±0.15	1.22 OR 25M/Roll
5/2	64	64	21	3.00±0.30	0.70±0.15	1.22 OR 25M/Roll
3	75	75	25	3.00±0.30	1.00±0.20	1.22 OR 25M/Roll
7/2	90	90	30	3.00±0.30	1.00±0.20	1.22 OR 25M/Roll
4	100	100	34	3.00±0.30	1.00±0.20	1.22 OR 25M/Roll
5	125	125	42	3.00±0.30	1.00±0.20	1.22 OR 25M/Roll

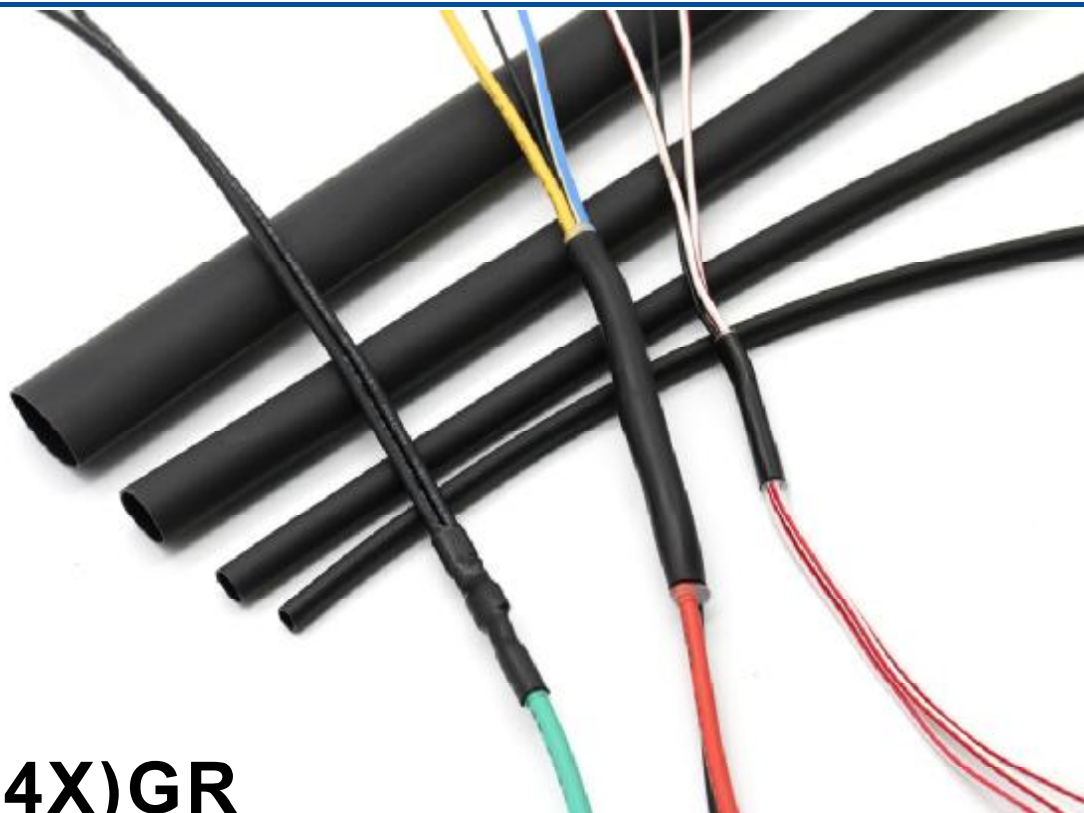
Technical Data

Property	Test Method	Standard
Tensile Strength(MPa)	ASTM D2671	≥10.4
Elongation(%)	ASTM D2671	≥300
Tensile Strength after aging (MPa)	UI224 158°CX168hr	≥7.3
Elongation after aging(%)	UI224 158°CX168hr	≥200
Flammability	ASTM D2671B	Self-extinguish within 30s
Dielectric strength(kV/mm)	IEC 60243	≥15
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.5
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(4X)GR



SBRS-(4X)GR

High Shrink Ratio, Semi-rigid Dual Wall
Adhesive-Lined Cross-Linked Polyolefin Tubing

Adhesive Semi-rigid, dual wall heat shrink tubing designed to seal&
environmentally protect splice in the most,



Features

- 4:1 shrink ratio
- Super sealing against water, moisture or other contaminates
- Continuous operating temperature:-45℃-125℃
- Fully shrink Temperature:≥125℃
- Shrink ratio: 4:1

Dual Wall

Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Total Wall Thickness Nom(mm)	Adhesive Thickness Nom(mm)	Spool Length M/spool
2/13	4	4.0	0.95	1.40±0.30	0.60±0.20	200
1/4	6	6.0	1.27	1.70±0.30	0.80±0.20	100
5/16	8	8.0	1.65	2.00±0.30	0.95±0.20	100
	10	10.0	2.00	2.30±0.40	1.10±0.20	1.22 OR 25M/Roll
1/ 2	12	12.0	2.41	2.45±0.40	1.20±0.20	1.22 OR 25M/Roll
3/4	18	18.0	4.45	2.60±0.40	1.34±0.30	1.22 OR 25M/Roll

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(4X)GRF

Dual Wall



SBRS-(4X)GRF

Highly Flame Retardant
Dual Wall Heat Shrink Polyolefin Tubing

Highly flame retardant, semi-rigid, cross-linked dual wall heat-shrink tubing designed for splice sealing and fuse link protection



4:1

Features

- 3:1&4:1 shrink ratio to cover varying splice configurations and substrate profiles
- Jacket and adhesive are exceptionally flame retardant
- Economical way to environmentally seal and protect automotive fuse-links, splice and terminals
- Highly resistance to common automotive fluids and solvents
- Semi-rigid and mechanically tough outer jacket provides added strain relief and excellent abrasion protection
- Thick adhesive liner forms an effective barrier against fluids and moisture penetration
- Continuous operating temperature:-45°C–125°C
- Fully shrink Temperature:≥125°C

Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Total Wall Thickness Nom(mm)	Adhesive Thickness Nom(mm)	
2/13	4	4.0	0.95	1.40±0.30	0.60±0.20	1.22
1/4	6	6.0	1.27	1.70±0.30	0.80±0.20	1.22
5/16	8	8.0	1.65	2.00±0.30	0.95±0.20	1.22
	10	10.0	2.00	2.30±0.40	1.10±0.20	1.22
1/2	12	12.0	2.41	2.45±0.40	1.20±0.20	1.22
3/4	18	18.0	4.45	2.60±0.40	1.34±0.30	1.22

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS-(4X)GBK



SBRS-(4X)GBK

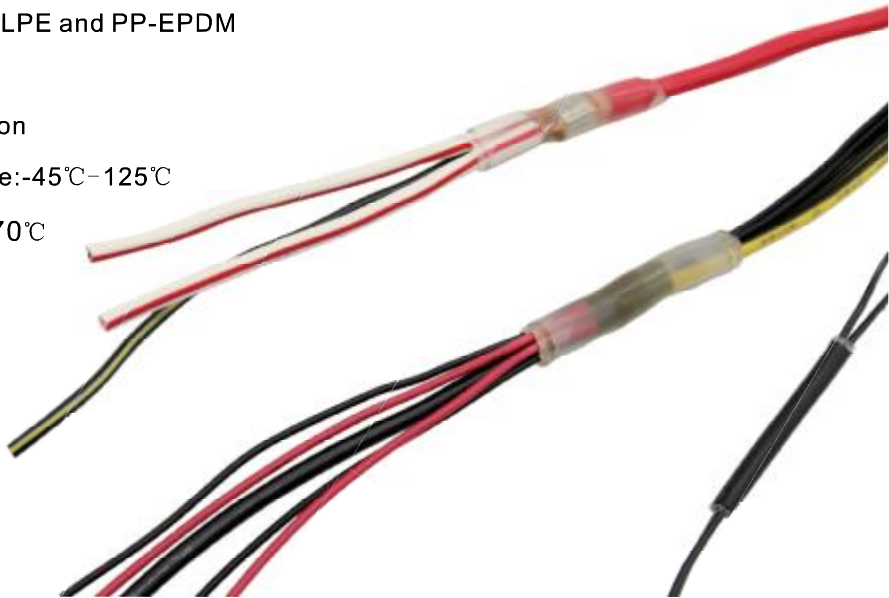
Adhesive-Lined Cross-Linked Polyolefin Tubing

Adhesive lined heat shrink specifically designed to insulate, seal and protect in-line splices in automotive wire harnesses and electronic assemblies



Features

- 4:1 shrink ratio allows for fewer sizes to cover numerous splice configurations and diameters.
- Seals and protects against water, moisture and chemicals
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Shrinks rapidly for quick installation
- Continuous operating temperature:-45°C–125°C
- Initial shrinkage temperature:70°C
- Fully shrink Temperature:≥110°C
- Black and clear



Dual Wall

Dimensions

Size		Expanded	After Recovery			Standard Package
Inch	mm	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Total Wall Thickness Nom(mm)	Adhesive Thickness Nom(mm)	
5/32	4	4.0	0.95	1.40±0.30	0.60±0.20	1.22 OR 25M/Roll
1/4	6	6.0	1.27	1.70±0.30	0.80±0.20	1.22 OR 25M/Roll
5/16	8	8.0	1.65	2.00±0.30	0.95±0.20	1.22 OR 25M/Roll
2/5	10	10.0	2.00	2.20±0.40	1.10±0.20	1.22 OR 25M/Roll
1/ 2	12	12.0	2.41	2.45±0.40	1.20±0.20	1.22 OR 25M/Roll
3/4	18	18.0	4.45	2.60±0.40	1.34±0.30	1.22 OR 25M/Roll

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UL224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS- DZ



SBRS- DZ

Heat Shrink Insulation Connectors

Crystal clear, semi-rigid, adhesive lined tubing with
integral solderless splice connector



4:1

Features

- Exceptional clarity for visual confirmation of seal
- Seal& protects against water, corrosive compounds, moisture& contaminants
- Tough, durable heat shrink tubing resists abrasion, crimp tool damage& splitting
- Shrinks 40% faster than nylon, preventing.
- Inner adhesive bonds to plastics, rubbers & metals
- Meets& conforms to OEM wiring specifications for installation& repairs
- Continuous operating temperature:-45℃-125℃
- Minimum shrinking temperature: 80℃

Dual Wall

Dimensions

Code	Size		Tube Diameter			Color	Standard Package
	AWG	mm ²	Expanded Min(mm)	Recovered Max(mm)	Length (mm)		
SBRS-DZ-1	22-18	0.5-1.0	4.8	1.2	35.0	red	1000pc/bag
SBRS-DZ-2	16-14	1.5-2.5	5.5	1.4	35.0	blue	1000pc/bag
SBRS-DZ-3	12-10	4.0-6.0	6.5	1.5	42.0	yellow	500pc/bag

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥14	16
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158℃CX168hr	≥7.3	15
Elongation after aging(%)	UI224 158℃CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.5%
Sofening Point(℃)	ASTM E28	95±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRS- CAPS



SBRS- CAPS

Adhesive-Lined Insulating Caps

Adhesive lined, heat shrink insulating caps specifically designed to insulate, seal and protect end or stub splices in wiring harness and electronic assemblies.



Features

- 4:1 shrink ratio allows fewer sizes to cover a wide range of profiles
- Seals and protects against water, moisture and chemical
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Shrinks rapidly for quick installation
- Continuous operating temperature:-45℃-125℃
- Minimum shrinking temperature: 125℃

Dual Wall

Dimensions

Code	Size (mm)	Standard Length(mm)	Expanded	Recoverd			
			Internal Diameter Min(mm)	Internal Diameter Max(mm)	Outer Layer Thickness (mm)	Adhesive Thickness (mm)	Total Wall Thickness (mm)
CAPS-1	3.2	22	≥5. 72	≤1.27	≥0.64	≥0. 56	≥1.20
CAPS-2	4.8	25.4	≥7.44	≤1.65	≥0.76	≥0.76	≥1.52
CAPS-3	6.4	28.4	≥10.85	≤2.41	≥0.89	≥1.37	≥1.91

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158℃X168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158℃X168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

SBRS- CAPS NF



SBRS- CAPS NF

Semi-rigid, Adhesive-Lined Insulating Caps

Semi-rigid, adhesive lined, heat shrink insulating caps specifically designed to insulate, seal and protect end or stub splices under extreme operating conditions



Features

- 4:1 shrink ratio allows fewer sizes to cover a wide range of profiles
- Seals and protects against water, moisture and chemical
- Adhesive bonds readily to PVC, XLPE and PP-EPDM cable jackets
- Shrinks rapidly for quick installation
- Continuous operating temperature:-45°C–125°C
- Fully shrink temperature: 125°C
- Not flame-retardant

Dual Wall

Dimensions

Code	Size (mm)	Standard Length (mm)	Expanded	Recoverd			
			Internal Diameter Min(mm)	Internal Diameter Max(mm)	Outer Layer Thickness (mm)	Adhesive Thickness (mm)	Total Wall Thickness (mm)
CAPS NF-1	3.2	22	3.2	0.80	0.64	0.56	1.20
CAPS NF-2	4.8	25.4	4.8	1.30	0.76	0.76	1.52
CAPS NF-3	6.4	28.4	6.4	1.52	1.00	0.91	19.10
CAPS NF-4	9.5	31.8	9.5	2.00	1.08	1.00	2.08
CAPS NF-5	12.7	38.1	12.7	2.41	1.30	1.24	2.54

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UL224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

SBRS-CAPS-RL



SBRS-CAPS-RL

Semi-rigid, Adhesive-Lined Insulating Caps

Heat shrink end caps are a simple yet effective method for sealing cable ends, pipe, conduit or other similar objects.

Typical Applications Watertight sealing of cable ends and pipe conduit

Standards Rated for 600/1000V



Features

- 3:1 shrink ratio
- Resistant to common fluids and solvents
- Superior resistance to weathering ,moisture contamination and adverse environmental conditions
- Standard adhesive liner provides complete environmental protection and insulation
- Heat indicating lines
- Resistant to common fluids and solvents
- Coated hot melt adhesive resists pull-off
- Fully shrink temperature :125°C
- Continuous operating temperature: -55°C to 110°C

Dual Wall

Dimensions

Expanded Length (Nom)		Expanded		Recoverd				General Use Diameter		Cable Range
		InternalDiameter Min		InternalDiameter Max-d		Wall Thickness Nom-W				
mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	AWG/MCM
50.80	2.00	10.20	0.40	3.80	0.15	2.00	0.080	4.5-8.5	0.18-0.34	#8-#1
63.50	2.50	19.10	0.75	5.60	0.22	2.00	0.080	6-16.5	0.24-0.65	#2-4/0
76.20	3.00	27.90	1.10	10.20	0.40	2.40	0.095	11.5-25	0.45-1	2/0-500
76.20	3.00	33.00	1.30	10.20	0.40	2.40	0.095	11.5-30	0.45-1.2	300-1000
88.90	3.50	38.10	1.50	12.70	0.50	2.40	0.095	14-35	0.55-1.4	500-1500
88.90	3.50	43.20	1.70	12.70	0.50	2.50	0.100	14-40	0.55-1.6	650-1750
88.90	3.50	52.10	2.05	19.00	0.75	2.50	0.100	21-45	0.82-1.8	900-2500
101.60	4.00	69.80	2.75	25.40	1.00	2.50	0.100	30-63	1.2-2.5	2000-2500
114.30	4.50	88.90	3.50	30.00	1.18	2.50	0.100	33-83.8	1.3-3.3	—
139.70	5.50	119.40	4.70	39.90	1.57	2.70	0.105	40.6-114.3	1.6-4.5	—

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158°C X168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°C X168hr	≥200	350
Dieletric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	≤0.2%
Sofening Point(°C)	ASTM E28	90±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm



SBRSM

Flame Retardant Medium Wall Adhesive Lined Heat Shrink Tubing

Medium wall adhesive-lined heat Shrink tubing suitable for a variety of low voltage electrical and mechanical application, where lighter weight and greater flexibility are important.



Features

- Seals and protects cable splices and terminations
- High resistance to impact and abrasion
- Thermoplastic adhesive liner for complete environmental protection and insulation
- Continuous operating temperature:-45℃–125℃
- Fully shrink temperature: 125℃

Dimensions

Size	Expanded	After Recovery				Standard Package
mm	Internal Diameter mm	Internal Diameter mm	Jacket Thickness mm	Adhesive Thickness mm	Total Wall Thickness mm	M/pc
10.2/3.0	10.2	3.0	1.40±0.20	0.35±0.15	1.75±0.30	1.22
16.0/5.0	16.0	5.0	1.50±0.20	0.40±0.15	1.90±0.30	1.22
19.1/5.6	19.1	5.6	2.00±0.20	0.45±0.15	2.45±0.40	1.22
25.0/8.0	25.0	8.0	2.00±0.20	0.45±0.15	2.45±0.40	1.22
28.0/9.0	28.0	9.0	2.00±0.20	0.50±0.20	2.60±0.40	1.22
35.0/10.2	35.0	10.2	2.20±0.20	0.78±0.20	2.70±0.40	1.22
38.1/12.0	38.1	12.0	2.20±0.20	0.50±0.20	2.70±0.40	1.22
43.2/12.7	43.2	12.7	2.20±0.25	0.50±0.20	2.70±0.40	1.22
52.1/16.0	52.1	16.0	2.30±0.25	0.50±0.20	2.80±0.45	1.22
55.0/16.0	55.0	16.0	2.30±0.25	0.50±0.20	2.80±0.45	1.22
63.0/19.0	63.0	19.0	2.50±0.25	0.50±0.20	3.00±0.45	1.22
75.0/22.0	75.0	22.0	2.60±0.25	0.50±0.20	3.00±0.45	1.22
85.0/25.0	85.0	25.0	2.80±0.35	0.50±0.20	3.30±0.45	1.22
95.0/29.0	95.0	29.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22
115.0/34.0	115.0	34.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22
140.0/42.0	140.0	42.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22
160.0/48.0	160.0	48.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22
180.0/58.0	180.0	58.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22
200.0/60.0	≥200.0	≤60.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22
230.0/69.0	≥230.0	≤69.0	3.10±0.45	0.60±0.20	3.70±0.50	1.22

Note: Tubing without adhesive is available upon request

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UL224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(°C)	ASTM E28	95±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm



SBRSW

Flame Retardant Adhesive-Lined Heavy Wall Cross-linked Polyolefin Heat Shrink Tubing

Adhesive-lined heavy wall heat shrink tubing insulates and protects electrical splice and terminations where maximum flame retardancy and exceptional insulating and sealing characteristics are required.



Features

- 3:1 shrink ratio
- Flame retardant
- SBRSW tubing will not split or rupture during installation, when overheated
- Thermoplastic adhesive liner for complete environmental protection and insulation
- Continuous operating temperature:-45℃–125℃
- Fully shrink temperature: 125℃

Dimensions

Size	Expanded	After Recovery				Standard Package M/pc
mm	Internal Diameter mm	Internal Diameter mm	Jacket Thickness mm	Adhesive Thickness mm	Total Wall Thickness mm	
9.0/3.0	9.0	3.0	2.00±0.35	0.45±0.20	2.45±0.35	1.22
13.0/4.0	13.0	4.0	2.30±0.35	0.45±0.20	2.80±0.35	1.22
20.0/6.0	20.0	6.0	2.30±0.35	0.60±0.20	2.90±0.35	1.22
28.0/9.0	28.0	9.0	2.30±0.35	0.70±0.20	3.00±0.40	1.22
33.0/10.2	33.0	10.2	2.80±0.35	0.70±0.20	3.60±0.40	1.22
38.1/12.0	38.1	12.0	3.10±0.35	0.70±0.20	3.85±0.50	1.22
43.2/12.7	43.2	12.0	3.50±0.35	0.70±0.20	4.20±0.50	1.22
51.0/16.0	55.0	16.0	3.85±0.40	0.70±0.20	4.50±0.50	1.22
70.0/21.0	75.0	22.0	3.65±0.40	0.70±0.20	4.40±0.50	1.22
85.0/25.0	85.0	25.0	3.65±0.40	0.70±0.20	4.40±0.50	1.22
105.0/30.0	105.0	30.0	3.85±0.40	0.70±0.20	4.50±0.50	1.22
120.0/36.0	120.0	36.0	3.85±0.40	0.70±0.20	4.50±0.50	1.22
130.0/36.0	130.0	36.0	3.85±0.40	0.70±0.20	4.50±0.50	1.22
140.0/42.0	140.0	42.0	3.85±0.40	0.70±0.20	4.50±0.50	1.22

Note: Tubing without adhesive is available upon request

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158℃CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158℃CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0. 2%
Sofening Point(℃)	ASTM E28	95±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm



SBRSM-NF

Medium Wall Adhesive-lined Cross-linked Polyolefin Heat Shrink Tubing

Medium wall heat shrinkable tubing suitable for a variety of low voltage electrical and mechanical application, where lighter weight and greater flexibility are important



Features

- 3:1 shrink ratio, not Flame-retardant
- Seal and protect cable splice and terminations
- Rugged mechanical protection
- Complete moisture sealing
- Strain relief for delicate wire connections
- High resistance to impact and abrasion
- Thermoplastic adhesive liner for complete environmental protection and insulation
- Continuous operating temperature:-45℃-125℃
- Fully shrink temperature: 125℃
- RoHS compliant

Dimensions

Size	Expanded	After Recovery				Standard Package
mm	Internal Diameter mm	Internal Diameter mm	Jacket Thickness mm	Adhesive Thickness mm	Total Wall Thickness mm	M/pc
6.0/2.0	6.0	2.0	1.40±0.20	0.45±0.15	1.85±0.30	1.22
8.0/2.0	8.0	2.0	1.40±0.20	0.45±0.15	1.85±0.30	1.22
10.2/3.0	10.2	3.0	1.40±0.20	0.50±0.15	1.90±0.30	1.22
12.0/3.0	12.0	3.0	1.40±0.20	0.50±0.15	1.90±0.30	1.22
16.0/5.0	16.0	5.0	1.50±0.20	0.55±0.20	2.15±0.35	1.22
19.1/5.6	19.1	5.6	1.80±0.20	0.60±0.20	2.40±0.40	1.22
22.0/6.0	22.0	6.0	2.00±0.30	0.60±0.20	2.60±0.40	1.22
25.0/8.0	25.0	8.0	2.00±0.30	0.65±0.20	2.70±0.40	1.22
28.0/6.0	28.0	6.0	2.40±0.30	0.95±0.25	3.30±0.45	1.22
33.0/8.0	33.0	8.0	2.50±0.30	0.80±0.25	3.30±0.45	1.22
38.1/12.0	38.1	12.0	2.40±0.30	0.80±0.25	3.30±0.45	1.22
43.2/12.7	43.2	12.7	2.40±0.30	0.80±0.25	3.30±0.45	1.22
55.0/16.0	55.0	16.0	2.40±0.30	0.80±0.25	3.30±0.45	1.22
65.0/19.0	65.0	19.0	2.50±0.30	0.80±0.25	3.30±0.45	1.22
75.0/22.0	75.0	22.0	2.90±0.30	0.80±0.25	3.70±0.50	1.22
85.0/25.0	85.0	25.0	2.90±0.30	0.80±0.25	3.70±0.50	1.22
95.0/30.0	95.0	30.0	3.00±0.30	0.80±0.25	3.70±0.50	1.22
115.0/34.0	115.0	34.0	3.00±0.30	0.80±0.25	3.70±0.50	1.22
140.0/42.0	140.0	42.0	3.00±0.30	0.80±0.25	3.70±0.50	1.22
160.0/50.0	160.0	50.0	3.10±0.30	0.80±0.25	3.70±0.50	1.00
180.0/65.0	180.0	65.0	3.10±0.30	0.80±0.25	3.70±0.50	1.00
200.0/69.0	200.0	69.0	3.10±0.30	0.80±0.25	3.70±0.50	1.00
230.0/78.0	230.0	78.0	3.10±0.30	0.80±0.25	3.70±0.50	1.00

Note: Tubing without adhesive is available upon request

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥14	15
Elongation(%)	ASTM D2671	≥400	450
Tensile Strength after aging (MPa)	UL224 158℃CX168hr	≥12	12.5
Elongation after aging(%)	UI224 158℃CX168hr	≥300	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(℃)	ASTM E28	95±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm



SBRSW-NF

Heavy Wall Adhesive-Lined Cross-linked Polyolefin Heat Shrink Tubing

Heavy wall adhesive-lined heat shrink tubing provides maximum reliability for insulating and protecting cable joints and terminations.



Features

- 3: 1 shrink ratio, not flame-retardant
- Withstands severe mechanical requirements of U.R.D., submersible and direct burial installations
- High impact, abrasion, corrosion and chemical resistance
- Rated for 1kv, 90°C continuous use application
- Thermoplastic adhesive liner provides complete environmental protection and installation
- Continuous operating temperature:-45°C–110°C
- Fully shrink temperature: 125°C

Dimensions

Size	Expanded	After Recovery				Standard Package
mm	Internal Diameter mm	Internal Diameter mm	Jacket Thickness mm	Adhesive Thickness mm	Total Wall Thickness mm	M/pc
8.0/2.0	8.0	2.0	1.80±0.30	0.55±0.20	2.35±0.35	1.22
9.0/3.0	9.0	3.0	2.00±0.30	0.55±0.20	2.55±0.40	1.22
13.0/4.0	13.0	4.0	2.30±0.30	0.55±0.20	2.85±0.40	1.22
16.0/5.0	16.0	5.0	2.30±0.30	0.60±0.20	2.90±0.50	1.22
22.0/6.0	22.0	6.0	2.50±0.40	0.60±0.25	3.10±0.50	1.22
28.0/6.0	28.0	6.0	2.70±0.40	0.70±0.25	3.40±0.50	1.22
33.0/8.0	33.0	8.0	2.80±0.40	0.80±0.25	3.60±0.60	1.22
38.1/12.0	38.1	12.0	3.10±0.50	0.80±0.25	3.90±0.60	1.22
43.2/12.0	43.2	12.0	3.50±0.50	0.80±0.25	4.30±0.70	1.22
55.0/16.0	55.0	16.0	3.60±0.50	0.80±0.25	4.40±0.70	1.22
65.0/19.0	65.0	19.0	3.60±0.50	0.80±0.25	4.40±0.70	1.22
75.0/22.0	75.0	22.0	3.60±0.50	0.80±0.25	4.40±0.70	1.22
85.0/25.0	85.0	25.0	3.60±0.50	0.80±0.25	4.40±0.70	1.22
95.0/30.0	95.0	30.0	3.60±0.50	0.80±0.25	4.40±0.70	1.22
105.0/30.0	105.0	30.0	3.80±0.60	0.80±0.25	4.60±0.70	1.22
120.0/39.0	120.0	39.0	3.80±0.60	0.80±0.25	4.60±0.70	1.22
130.0/40.0	130.0	40.0	3.80±0.60	0.80±0.25	4.60±0.70	1.22
140.0/42.0	140.0	42.0	3.80±0.60	0.80±0.25	4.60±0.70	1.22
160.0/50.0	160.0	50.0	3.80±0.60	0.80±0.25	4.60±0.70	1.00
180.0/60.0	180.0	60.0	3.80±0.60	0.80±0.25	4.60±0.70	1.00
200.0/69.0	200.0	69.0	3.80±0.60	0.80±0.25	4.60±0.70	1.00

Note: Tubing without adhesive is available upon request

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥ 14	15
Elongation(%)	ASTM D2671	≥ 400	450
Tensile Strength after aging (MPa)	UL224 158°CX168hr	≥ 12	12.5
Elongation after aging(%)	UI224 158°CX168hr	≥ 300	350
Dielectric strength(kV/mm)	IEC 60243	≥ 15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥ 1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0. 2%
Sofening Point(°C)	ASTM E28	95±5
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

SBRSTV

Medium&Heavy Wall



SBRSTV

Medium Wall Adhesive-lined Heat Variable Heat Shrink Tubing

Heat shrinkable tubing and adhesive liner combination that established the CATV industry standard for splice and connector protection



3:1

Features

- 3: 1 shrink ratio
- Flame retardant
- Excellent resistance to weathering , moisture contamination and adverse environmental conditions
- Heat indicating lines
- Adhesive liner provides complete environmental protection and insulation
- Resists common fluids and solvents
- Continuous operating temperature:-45℃-110℃
- Fully shrink temperature: 125℃

Dimensions

Size mm	Expanded	After Recovery				Standard Package M/pc
	Internal Diameter mm	Internal Diameter mm	Jacket Thickness mm	Adhesive Thickness mm	Total Wall Thickness mm	
10.2/3.8	10.2	3.8	1.40±0.20	0.50±0.10	1.90±0.25	1.22
19.0/5.6	19.0	5.6	1.80±0.20	0.60±0.15	2.40±0.30	1.22
28.0/6.0	28.0	6.0	2.40±0.30	0.95±0.20	3.30±0.35	1.22
33.0/8.0	33.0	8.0	2.50±0.30	0.80±0.15	3.30±0.35	1.22
38.1/12.0	38.1	12.0	2.40±0.30	0.80±0.15	3.30±0.35	1.22
43.2/12.7	43.2	12.7	2.40±0.30	0.80±0.15	3.30±0.35	1.22
55.0/16.0	55.0	16.0	2.40±0.30	0.80±0.15	3.30±0.35	1.22
70.0/25.4	70.0	25.4	2.80±0.30	0.60±0.15	3.40±0.40	1.22

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UL224 158℃X168hr	≥7.3	8.5
Elongation after aging(%)	UL224 158℃X168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	<0.2%
Sofening Point(℃)	ASTM E28	85
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm



WF
PTFE Teflon tubing

Specially designed for protecting applications in extreme electrical
Chemical and thermal environment



Features

- Chemical insert
- High temperature resistance
- Continuous operating
- Temperature:-65°C-200°C
- Corrosion resistance(acid/alkali resistance, chemical reagents oil-proof)
- High pressure resistance
- Standard: UL224 VW-1 C-UL CSA22.20FT
- UL file number: E203950

Dimensions

Size AWG	Expanded	External Diameter			Standard Package M/Spool
	Internal Diameter mm	(S)	(T)	(L)	
30	0.30±0.10	0.80±0.10	0.70±0.10	0.60±0.10	305
28	0.38±0.10	0.88±0.10	0.78±0.10	0.68±0.10	305
26	0.46±0.10	0.96±0.10	0.86±0.10	0.76±0.10	305
24	0.56±0.10	1.16±0.10	1.06±0.10	0.86±0.10	305
23	0.66±0.10	1.26±0.10	1.16±0.10	0.96±0.10	305
22	0.71±0.10	1.31±0.10	1.21±0.10	1.01±0.10	305
21	0.81±0.10	1.41±0.10	1.31±0.10	1.11±0.10	305
20	0.86±0.10	1.66±0.10	1.46±0.10	1.16±0.10	305
19	0.96±0.20	1.76±0.20	1.56±0.20	1.26±0.20	200
18	1.07±0.20	1.87±0.20	1.67±0.20	1.37±0.20	200
17	1.19±0.20	1.99±0.20	1.79±0.20	1.49±0.20	200
16	1.34±0.20	2.14±0.20	1.94±0.20	1.64±0.20	153
15	1.50±0.20	2.30±0.20	2.10±0.20	1.80±0.20	153
14	1.68±0.20	2.48±0.20	2.28±0.20	2.08±0.20	100
13	1.93±0.20	2.73±0.20	2.53±0.20	2.33±0.20	100
12	2.16±0.25	2.96±0.25	2.76±0.25	2.56±0.25	100
11	2.41±0.25	3.21±0.25	3.01±0.25	2.81±0.25	150
10	2.86±0.25	3.49±0.25	3.29±0.25	3.09±0.25	150
9	3.00±0.25	4.00±0.25	3.80±0.25	3.40±0.25	150
8	3.38±0.25	4.38±0.25	4.18±0.25	3.78±0.25	100
7	3.76±0.25	4.76±0.25	4.56±0.25	4.16±0.25	100
6	4.22±0.25	5.22±0.25	5.02±0.25	4.80±0.25	100
5	4.72±0.25	5.72±0.25	5.52±0.25	5.32±0.25	50
4	5.28±0.30	6.28±0.30	6.08±0.30	5.88±0.25	50
3	5.94±0.30	6.94±0.30	6.74±0.30	6.54±0.25	1.00
2	6.68±0.30	7.68±0.30	7.48±0.30	7.28±0.25	1.00
1	7.46±0.30	8.46±0.30	8.26±0.30	8.06±0.25	1.00
0	8.38±0.30	9.38±0.30	9.18±0.30	8.98±0.25	1.00

Technical Data

Property	Method Test	Standard
Tensile Strength(MPa)	ASTMD 2671	≥25
Elongation(%)	ASTMD 2671	≥300
Flammablity	VW-1	Pass
Dielectric strength(kV/mm)	IEC 60243	≥26
Volume resistivity(Q.cm)	IEC 60093	≥1X10 ¹⁴

RSFR-TFE



RSFR-TFE

Heat Shrink Teflon Tubing

Heat Shrink Teflon Tubing can be widely used in science & technology field, such as chemistry, mechanical industries, astronautic industry, vehicles, transformers, communications, etc



1.7:1

Features

- High performance for anti-corrosion (anti-acid/alkali/chemical/oil)
- High voltage resistant
- Operating Temperature: -65℃-200℃
- Standard color: Clear
- Shrink ratio:1.7:1, shrink temperature:>350℃



RSFR-TFE

Dimensions

Size (mm)	Expanded	Recovered		Standard Package (m/spool)	Round/Flat
	Internal Diameter (mm)	Internal Diameter (mm)	Wall Thickness (mm)		
1.0	1.0±0.2	≤0.6	0.20±0.05	200	Round
1.5	1.5±0.2	≤0.9	0.20±0.05	200	Round
2.0	2.0±0.2	≤1.3	0.20±0.05	200	Round
2.5	2.5±0.2	≤1.5	0.20±0.05	200	Round
3.0	3.0±0.2	≤1.8	0.20±0.05	200	Round
3.5	3.5±0.2	≤2.0	0.20±0.05	100	Round
4.0	4.0±0.3	≤2.5	0.25±0.05	100	Round
4.5	4.5±0.3	≤2.8	0.25±0.05	100	Round
5.0	5.0±0.3	≤3.0	0.25±0.05	100	Round
6.0	6.0±0.3	≤3.8	0.25±0.05	100	Round
7.0	7.0±0.3	≤4.0	0.25±0.05	100	Round
8.0	8.0±0.3	≤4.8	0.25±0.05	1	Flat
9.0	9.0±0.3	≤5.0	0.30±0.05	1	Flat
10.0	10.0±0.3	≤5.8	0.30±0.05	1	Flat
11.0	11.0±0.3	≤6.4	0.30±0.05	1	Flat
12.0	12.0±0.3	≤7.0	0.30±0.05	1	Flat
13.0	13.0±0.3	≤7.5	0.35±0.05	1	Flat
14.0	14.0±0.3	≤8.0	0.35±0.05	1	Flat
15.0	15.0±0.3	≤8.5	0.40±0.05	1	Flat
16.0	16.0±0.3	≤9.0	0.40±0.05	1	Flat

Technical Data

Property	Method Test	Typical Performance
Tensile Strength(MPa)	ASTMD 2671	19
Elongation(%)	ASTMD 2671	200
Cold impact (-65℃)	ASTMD 2671 Method C	No cracking
Flammability	ASTMD 2671	VW-1
Dielectric strength(kV/mm)	VDE 0303 Part2	26
Volume resistivity(Ω.cm)	VDE 0303 Part2	1.0X10 ¹⁴

RSFR-DR



RSFR-DR

Diesel Resistant Flexible Elastomeric Heat Shrink Tubing

Diesel resistant elastomeric heat shrink tubing for protecting cables, wire harness and brake lines in transportation and military applications where resistance to diesel, oil, hydraulic fluids and other chemicals is critical



Features

- 2:1 shrink ratio
- Long term resistance to diesel, hydraulic fluids and chemicals
- Flexible
- Flame ratardant
- High abrasion and cut resistance
- Continuous operating temperature:-75℃-150℃
- Fully shrink temperature:130℃
- Meets 23053/16

RSFR-DR

Dimensions

Size		Expanded	Recovered		Standard Package	Round/Flat
Inch	mm	Internal Diameter (mm)	Internal Diameter (mm)	Wall Thickness (mm)		
1/8	3.2	3.2	1.6	0.76±0.15	200m/spool	Round
3/16	4.8	4.8	2.4	0.84±0.15	100m/spool	Round
1/4	6.4	6.4	3.2	0.89±0.15	100m/spool	Round
3/8	9.5	9.5	4.8	1.02±0.20	50m/spool	Round
1/2	12.7	12.7	6.4	1.22±0.20	25m/spool	Round
3/4	19.0	19.0	9.5	1.45±0.28	25m/spool	Round
1	25.4	25.4	12.7	1.78±0.28	25m/spool	Round
1-1/2	38.1	38.1	19.0	2.41±0.41	25m/spool	Round
2	50.8	50.8	25.4	2.79±0.41	25m/spool	Round
3	76.0	76.0	38.0	3.18±0.50	1.00m/pc	Flat

Note: 3:1 shrink ratio is available upon request

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥250	350
Tensile Strength after aging (MPa)	150°C X168hr	≥8.0	8.5
Elongation after aging(%)	150°C X168hr	≥200	300
Dielectric strength(kV/mm)	IEC 60243	≥11.9	15
Flammability	ASTM D2671 B	Pass	Pass

RSFR-VDF175



RSFR-VDF175

THIN WALL PVDF Heat Shrink Tubing

Transparent, thin wall PVDF (polyvinylidene fluoride) heat shrink tubing ideal for electronic, automotive and military applications requiring protection and see-through inspection in aggressive environments



Features

- 2:1 shrink ratio
- Long term resistance to diesel, hydraulic fluids and chemicals
- Semi-rigid
- Flame retardant
- High abrasion and cut resistance
- Continuous operating temperature:-55°C–175°C
- Fully shrink temperature:175°C
- Meets 23053/18

RSFR-VDF175

Dimensions

Size		Expanded	Recovered		Standard Package M/Spool	Round/Flat
Inch	mm	Internal Diameter (mm)	Internal Diameter (mm)	Wall Thickness (mm)		
3/64	1.2	1.2	0.6	0.25±0.05	200	Round
1/16	1.6	1.6	0.8	0.25±0.05	200	Round
3/32	2.4	2.4	1.2	0.25±0.05	200	Round
1/8	3.2	3.2	1.6	0.25±0.05	200	Round
3/16	4.8	4.8	2.4	0.25±0.05	100	Round
1/4	6.4	6.4	3.2	0.30±0.05	100	Round
3/8	9.5	9.5	4.8	0.30±0.05	50	Round
1/2	12.7	12.7	6.4	0.30±0.05	50	Round
3/4	19.1	19.1	9.5	0.42±0.05	50	Round
1	25.4	25.4	12.7	0.50±0.05	50	Round
1-1/2	38.1	38.1	19.1	0.50±0.05	50	Round

Note: 3:1 shrink ratio is available upon request

Property	Test Method	Typical Performance
Tensile Strength(MPa)	ASTM D 2671	≥30
Elongation(%)	ASTM D 2671	≥150
Tensile	250°CX168hr	≥100
Cold Bend	No cracking	≥220
Flammability	ASTM D 2671	VW-1
Volume resistivity(Ω.cm)	IEC 60093	≥10 ¹⁴

RSFR-VT200



RSFR-VT200

Thin Wall Fluoroelastomer Heat Shrink Tubing

Thin wall Viton fluoroelastomer heat shrink tubing suitable for use in electronic systems and components in automotive, military/ aerospace and industrial applications requiring outstanding heat and fluid resistance.



Features

- 2:1 shrink ratio
- High withstand to corrosive fluids in extreme temperatures
- Flame retardant
- Very flexible
- Easy to stamped
- Continuous operating temperature:-55℃–200℃
- Fully shrink temperature:175℃
- Meets 23053/13

RSFR-VT200

Dimensions

Size		Expanded	Recovered		Standard Package M/Spool	Round/Flat
Inch	mm	Internal Diameter (mm)	Internal Diameter (mm)	Wall Thickness (mm)		
3/32	2.4	2.4	1.2	0.70±0.20	200	Round
1/8	3.2	3.2	1.6	0.75±0.20	200	Round
3/16	4.8	4.8	2.4	0.89±0.20	100	Round
1/4	6.4	6.4	3.2	0.89±0.20	100	Round
3/8	9.5	9.5	4.8	0.89±0.20	50	Flat
1/2	12.7	12.7	6.4	0.89±0.20	25	Flat
3/4	19.0	19.0	9.5	1.07±0.30	25	Flat
1	25.4	25.4	12.7	1.25±0.30	25	Flat
1-1/2	38.1	38.1	19.0	1.40±0.30	25	Flat
2	50.8	51.0	25.4	1.65±0.30	15	Flat

Note: 3:1 shrink ratio is available upon request

Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥8.5	10.0
Elongation(%)	ASTM D2671	≥250	300
Tensile Strength after aging (MPa)	UL224 158℃X168hr	≥7.3	8.5
Elongation after aging(%)	UL224 158℃X168hr	≥200	250
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	IEC 60093	≥1X10 ⁹	2.5X10 ⁹
Flammability	UI224 VW-1	Pass	Pass



SRG-N/W
Silicone Rubber Braided Tube

General insulating protection for various household appliances, light fitting, machines, electronic instruments, etc



Features

- Two types: Inner fiberglass outside braided silicone rubber(SRG-N)
Inner silicone rubber outside fiberglass braided(SRG-W)
- Operating temperature:-55℃-200℃
- RoHS compliant
- Good flexibility, arc resistance, corona resistance
- Standard color: white (Other colors upon request)

Dimensions

SRG-N

Size (mm)	Allowance (mm)	Average Wall Thickness Min (mm)					Packing standard M/Spool
		1200V	1500V	2500V	4000V	7000V	
0.5	+0.3,-0.1	≥0.20	≥0.23	≥0.25	≥0.35	≥0.37	200/100
1.0	+0.3,-0.1	≥0.20	≥0.23	≥0.25	≥0.35	≥0.37	200/100
1.5	+0.3,-0.1	≥0.20	≥0.23	≥0.25	≥0.35	≥0.37	200/100
2.0	+0.3,-0.1	≥0.20	≥0.23	≥0.25	≥0.35	≥0.37	100
2.5	+0.3,-0.1	≥0.20	≥0.23	≥0.25	≥0.35	≥0.37	100
3.0	+0.3,-0.1	≥0.23	≥0.25	≥0.27	≥0.37	≥0.40	100
3.5	+0.3,-0.1	≥0.23	≥0.25	≥0.27	≥0.37	≥0.40	100
4.0	+0.3,-0.1	≥0.23	≥0.25	≥0.27	≥0.37	≥0.40	100
4.5	+0.3,-0.1	≥0.23	≥0.25	≥0.27	≥0.37	≥0.40	100
5.0	+0.3,-0.1	≥0.25	≥0.30	≥0.32	≥0.40	≥0.45	100
6.0	+0.3,-0.1	≥0.25	≥0.30	≥0.32	≥0.40	≥0.45	100
7.0	+0.3,-0.1	≥0.25	≥0.30	≥0.32	≥0.40	≥0.45	50
8.0	+0.3,-0.1	≥0.25	≥0.30	≥0.32	≥0.40	≥0.45	50
9.0	+0.3,-0.1	≥0.25	≥0.30	≥0.32	≥0.40	≥0.45	50
10.0	+0.3,-0.1	≥0.38	≥0.40	≥0.42	≥0.45	≥0.50	50
12.0	+1.0,-1.0	≥0.38	≥0.40	≥0.42	≥0.45	≥0.50	50/25
13.0	+1.0,-1.0	≥0.38	≥0.40	≥0.42	≥0.45	≥0.50	50/25
14.0	+1.0,-1.0	≥0.38	≥0.40	≥0.42	≥0.45	≥0.50	50/25
18.0	+1.0,-1.0	≥0.38	≥0.40	≥0.42	≥0.45	≥0.50	25
20.0	+1.0,-1.0	≥0.40	≥0.40	≥0.42	≥0.45	≥0.50	25
25.0	+1.0,-1.0	≥0.40	≥0.45	≥0.47	≥0.50	≥0.55	25
30.0	+1.0,-1.0	≥0.40	≥0.45	≥0.47	≥0.50	≥0.55	25
35.0	+1.0,-1.0	≥0.40	≥0.45	≥0.47	≥0.50	≥0.55	25
40.0	+1.0,-1.0	≥0.40	≥0.45	≥0.47	≥0.50	≥0.55	25

SRG-W

Size (mm)	Allowance (mm)	Average Wall Thickness Min (mm)	Packingstandard M/Spool
		7000V	
1.0	+0.2,-0.1	≥0.60	100
1.5	+0.3,-0.2	≥0.60	100
2.0	+0.3,-0.2	≥0.60	100
2.5	+0.3,-0.2	≥0.60	100
3.0	+0.3,-0.2	≥0.80	100
3.5	+0.3,-0.2	≥0.80	100
4.0	+0.4,-0.2	≥0.80	100
4.5	+0.3,-0.2	≥0.80	100
5.0	+0.4,-0.2	≥0.80	100
6.0	+0.4,-0.2	≥1.00	100
7.0	+0.5,-0.3	≥1.00	50
8.0	+0.5,-0.3	≥1.00	50
9.0	+0.5,-0.3	≥1.00	50
10.0	+1.0,-0.5	≥1.00	50

WEPDM



WEPDM

Flexible EPDM Heat-Shrinkable Tubing

Suitable for jacketing and protection to cables, pipes, and connectors .
Used for protecting solder joints, wires, cables, terminals, connectors and various electronic apparatus.



Features

- 2:1 shrink ratio
- Environmental friendly
- Outstanding low and high-temperature
- Higher shrink ratio than heat shrinkable tubes
- Resists acids and alkalis
- Resists chemical solvent
- Resists ultraviolet light and weather aging
- Resists ozone
- Minimum shrink temperature:100℃
- Minimum full recovery temperature: 135℃
- Continuous operating temperature:-45℃-125℃
- Standard color: Black



EPDM

Dimensions

Size mm	Expanded	After Recovery		Standard Package M/Spool
	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Wall Thickness mm	
6.0	6.5	3	0.80±0.10	50
8.0	8.5	4	0.90±0.10	50
10	10.0	5	1.20±0.10	50
12	12.0	6	1.20±0.10	20
16	16.0	8	1.50±0.15	20
20	20.0	10	1.50±0.15	20
30	30.0	15	1.80±0.15	20
40	40.0	20	2.00±0.15	20
50	50.0	25	2.00±0.20	10
60	60.0	30	2.00±0.30	10
70	70.0	35	2.00±0.30	10

Technical Data

Property	Test Method	Typical Performance
Tensile Strength(MPa)	GB/T 528	≥14
Elongation(%)	GB/T 528	≥400
Dielectric strength(kV/mm)	ASTM D 149	≥12
Volume resistivity(Ω.cm)	ASTM D 257	≥2X10 ¹³

WRSJD



WRSJD

Adhesive Lined Cross-Linked Polyolefin Heat Shrink Tape

Adhesive lined, heat shrink duct and vacuum tape specifically designed for sealing joints on spiral, flexible or flat oval ducts used in heating, ventilating, air conditioning and exhaust recovery systems



Features

- Eliminates air leakage in vacuum and ventilation systems
- Seals against moisture ingress and other contaminants
- Powerful adhesive bonds to galvanized steel, Aluminum and stainless steel
- Effective, reproducible seal allows for resistance to bending, vibrations and other mechanical stresses over a wide range of temperatures
- Application procedure is quick, simple and clean
- Continuous operating temperature:-45°C–125°C
- Fully shrink temperature: 120°C
- Color: Black, Red, Green, Yellow



Dimensions

Order Number	Width	Wall Thickness	Standard Length(m)
WRSJD-0825	25	0.80±0.10	5,10
WRSJD-0850	50	0.80±0.10	5,10
WRSJD-08100	100	0.80±0.10	5,10
WRSJD-1025	25	1.00±0.10	5,10
WRSJD-1050	50	1.00±0.10	5,10
WRSJD-10100	100	1.00±0.10	5,10

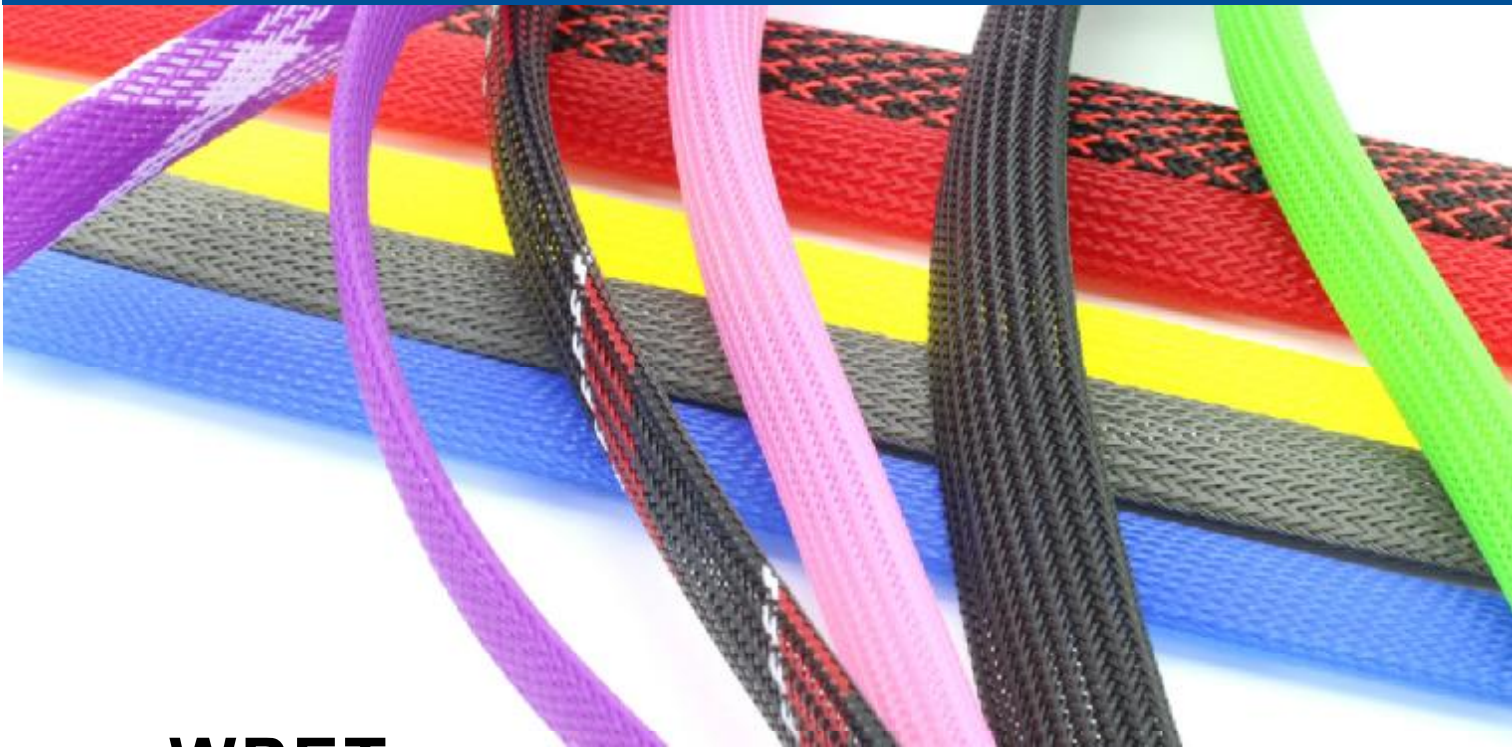
Technical Data

Property	Test Method	Standard	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile Strength after aging (MPa)	UI224 158°C X168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°C X168hr	≥200	350
Dielectric strength(kv/mm)	IEC243	≥15	17.5
Volume resistivity(Ω.cm)	ASTM D876	≥1X10 ¹⁴	2.5X10 ¹⁴

Adhesive

Property	Test Method	Standard
Water Absorption	ASTM D570	≤0.2%
Sofening Point(°C)	ASTM E28	95
Strength of pearing(PE)	ASTM D 1000	120N/25mm
Strength of pearing(AL)	ASTM D 1000	80N/25mm

WPET



WPET
Expandable Sleeve

PET(polyethylene terephthalate) material, excellent application for various bundle wires, wiring harness and hoses protection, etc



1.4:1

Features

- Good flexibility, easy to bend
- Excellent abrasion resistance
- Convenient installation
- Continuous operating temperature:-50℃-150℃
- Fusing point: 240℃ ±10℃
- Flame retardant rating: Self-extinguish
- Color: Black or upon request

Dimensions

N0.	Specification	Application range (mm)	Number	Packing(m/roll)
1	1*0.20mm*24	1~5	1000	3±1
2	1*0.25mm*24	1~5	1000	3±1
3	1*0.20mm*32	1~6	1000	3±1
4	1*0.25mm*32	1~6	1000	5±2
5	1*0.20mm*40	1~8	1000	3±1
6	1*0.25mm*40	2~8	1000	4±2
7	1*0.20mm*48	2~10	1000	5±2
8	1*0.25mm*48	3~12	1000	6±2
9	1*0.20mm*56	3~12	1000	6±2
10	3*0.20mm*24	1~5	500	4±2
11	1*0.25mm*56	5~14	500	8±2
12	1*0.20mm*64	3~14	500	7±2
13	1*0.25mm*64	5~15	500	9±2
14	3*0.25mm*24	3~12	500	6±2
15	3*0.20mm*32	5~15	500	6±2
16	1*0.20mm*72	5~16	500	10±2
17	1*0.25mm*72	6~17	500	10±2
18	3*0.25mm*32	5~15	500	8±2
19	3*0.20mm*40	7~20	500	8±2
20	3*0.25mm*40	8~21	250	12±2
21	3*0.20mm*48	6~24	250	10±2
22	3*0.25mm*48	7~25	250	14±2
23	4*0.25mm*48	8~26	250	16±4
24	3*0.20mm*56	8~28	250	12±4
25	3*0.25mm*56	9~30	250	16±4
26	3*0.20mm*64	10~32	250	16±4
27	3*0.25mm*64	11~33	250	20±4
28	3*0.20mm*72	12~38	250	18±4
29	4*0.20mm*72	13~39	100	22±4
30	4*0.25mm*64	12~35	100	28±5
31	4*0.25mm*72	15~42	100	32±5
32	4*0.20mm*96	16~46	150	30±5
33	3*0.20mm*120	18~56	100	35±5
34	5*0.25mm*64	14~38	100	35±5
35	4*0.25mm*96	18~50	100	36±5
36	3*0.25mm*120	19~57	100	38±5
37	5*0.25mm*72	16~45	100	25±5
38	4*0.25mm*120	20~70	100	45±5
39	5*0.25mm*96	19~51	100	40±5
40	5*0.25mm*120	22~85	50	50±5
41	6*0.25mm*120	25~95	50	60±5
42	3*0.38mm*120	26~100	50	64±5
43	4*0.38mm*120	32~110	50	76±5

WOLVO



WOLVO

Skidproof Heat Shrink Tubing

Polyolefin tubing with skidproof figured surface, used for various fishing tackles, sport fittings, and equipments and commodities with hand device.



2:1

Features

- Good abrasion resistant and anti-skid performance
- High flexibility
- Quick installation
- Continuous operating temperature:-55℃-125℃
- Shrink temperature: started at 70℃, full recovery at 110℃
- Standard color: Black, Red, Yellow, Green, Blue



Dimensions

Size	Expanded		After Recovery		Standard Package M/pc
mm	Internal Diameter mm	Wall Thickness mm	Internal Diameter mm	Wall Thickness mm	
15	15	0.45±0.15	8.0	0.85±0.15	1.0
18	18	0.45±0.15	10.0	0.85±0.15	1.0
20	20	0.50±0.15	11.0	0.90±0.15	1.0,1.6
22	22	0.50±0.15	12.5	0.90±0.15	1.0,1.6
25	25	0.50±0.15	14.5	1.00±0.15	1.0,1.6
28	28	0.50±0.15	15.5	1.00±0.15	1.0,1.6
30	30	0.60±0.15	17.5	1.20±0.15	1.0,1.6
35	35	0.60±0.15	20.0	1.20±0.15	1.0,1.6
40	40	0.60±0.15	23.0	1.20±0.15	1.0,1.6
45	45	0.65±0.15	25.0	1.25±0.15	1.0,1.6
50	50	0.65±0.15	28.0	1.25±0.15	1.0,1.6

Technical Data

Property	Test Method	Typical Performance
Tensile Strength(MPa)	ASTM D2671	≥10.4
Elongation(%)	ASTM D2671	≥200

B Identification Products

For Wire & Cable



A comprehensive line of heat shrinkable sleeves, labels, tie-on cable markers to meet a broad range of needs including UL, CSA and Mil-Spec requirements, for a variety of Applications. WOER's identification sleeves are Heat shrinkable marking sleeves for wire and cable identification. Made from permanent, flame retarded, radiation crosslinked heat shrinkable polyolefin. This identification sleeves are permanent immediately after printing and remain legible even when exposed to abrasion, aggressive cleaning solvents.

CONTENTS

Part No.	Item	Pages
AMS	Military Identification Sleeves	B01
RSFR	Heat Shrink Identification Sleeves	B03
PSFR	High-temperature, Heat Shrinkable Identification Sleeves	B06
HMS	Diesel Resistant Identification Sleeves	B08
HNF	Halogen Free Low Smoke Low hazard Identification Sleeves	B10
PUR	Identification Tags	B12
RSFR/AMS/HMS/HNF	Identification Tags "Ladder Type" Thermal transfer	B14
WO-80500BK	Ribbon Data Sheet	B16
SOFTWARE	WOLABEL-1/3 Software for Wire Marker and Label Printing	B18

AMS



AMS

Military Identification Sleeves

Description: AMS marker sleeves are designed to meet the wire and cable permanent marking needs. It is made of durable and flame retardant heat shrinkable polyolefin, and radiation cross-linked by high energy electronic beam.

Standard: AMS meets AMS-DTL-23053/5 Class 1&3, SAE-AS 81531, MIL-STD-202F/Method 215J, UL224, VW-1, RoHS.

Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound
Application range	Military industry; Aerospace & defense; Marine;
Operating temperature range	-55~+135°C
Minimum recovery temperature	+135°C
Maximum storage temperature	+50°C
Shrink ratio	2:1, 3:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Either Thermal transfer printer or Laser printer is OK.
Recommended Ribbons	WO-80500BK resin ribbon, Black

Dimensions

Shrink ratio-2X

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
AMS-M-2X-1.6-	2.00±0.20	3.7±0.3	0.48±0.10	≤0.79	0.45±0.06
AMS-M-2X-2.4-	2.79±0.20	5.0±0.3	0.48±0.10	≤1.18	0.49±0.06
AMS-M-2X-3.2-	3.64±0.23	6.3±0.4	0.48±0.10	≤1.59	0.51±0.06
AMS-M-2X-4.8-	5.26±0.25	8.9±0.4	0.49±0.10	≤2.36	0.54±0.06
AMS-M-2X-6.4-	6.92±0.28	11.5±0.4	0.50±0.10	≤3.18	0.56±0.06
AMS-M-2X-9.5-	10.2±0.32	16.7±0.5	0.51±0.11	≤4.75	0.59±0.06
AMS-M-2X-12.7-	13.5±0.36	21.8±0.6	0.52±0.11	≤6.35	0.60±0.07
AMS-M-2X-19-	20.1±0.40	32.2±0.6	0.53±0.11	≤9.53	0.62±0.07
AMS-M-2X-25-	26.7±0.45	42.5±0.7	0.55±0.12	≤12.7	0.63±0.07
AMS-M-2X-38-	39.8±0.51	63.2±0.8	0.57±0.12	≤19.1	0.64±0.07
AMS-M-2X-51-	53.0±0.56	83.9±0.9	0.58±0.13	≤25.4	0.64±0.08
AMS-M-2X-76-	79.4±0.56	125.3±1.0	0.59±0.13	≤38.1	0.64±0.09

Shrink ratio-3X

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
AMS-M-3X-1.6-	2.00±0.20	3.7±0.3	0.47±0.10	≤0.53	0.52±0.06
AMS-M-3X-2.4-	2.79±0.20	5.0±0.3	0.47±0.10	≤0.79	0.57±0.06
AMS-M-3X-3.2-	3.64±0.23	6.3±0.4	0.48±0.10	≤1.06	0.61±0.06
AMS-M-3X-4.8-	5.26±0.25	8.9±0.4	0.49±0.10	≤1.59	0.67±0.06
AMS-M-3X-6.4-	6.92±0.28	11.5±0.4	0.50±0.10	≤2.13	0.71±0.06
AMS-M-3X-9.5-	10.2±0.32	16.7±0.5	0.52±0.11	≤3.18	0.77±0.06
AMS-M-3X-12.7-	13.5±0.36	21.8±0.6	0.53±0.11	≤4.23	0.80±0.07
AMS-M-3X-19-	20.1±0.40	32.2±0.6	0.55±0.11	≤6.35	0.84±0.07
AMS-M-3X-25-	26.7±0.45	42.5±0.7	0.565±0.12	≤8.47	0.86±0.07
AMS-M-3X-38-	39.8±0.51	63.2±0.8	0.57±0.12	≤12.9	0.89±0.07
AMS-M-3X-51-	53.0±0.56	83.9±0.9	0.57±0.12	≤17.2	0.90±0.08
AMS-M-3X-76-	79.4±0.56	125.3±1.0	0.57±0.13	≤25.8	0.92±0.09

Package information

Ordering Size (AMS-M-2X/3X)	Ladder Format Type	Continuous Type	
	A&B-Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)	B-Plastic reel Packing (m/reel)
Φ1.6	2500	50	25
Φ2.4	2500	50	25
Φ3.2	2000	100	25
Φ4.8	2000	100	25
Φ6.4	2000	100	25
Φ9.5	1000	100	25
Φ12.7	1000	100	25
Φ19	500	100	25
Φ25	500	100	25
Φ38	500	50	25
Φ51	250	50	25
Φ76	250	50	25

Part Numbering System

AMS-M-3X-4.8-50-2.0K-Y 0 P2 W

Package: W for WOLABLE painting package. O for OEM package

Printing: P0/P1/P2 for printing/single-side printing/ double-side printing

Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....

Color: Y for yellow, W for white and ten colors are available

Standard pack :2.5K/2K/1.5K/1K/0.5K/0.25K/for 2500/...../500 and 250 pieces

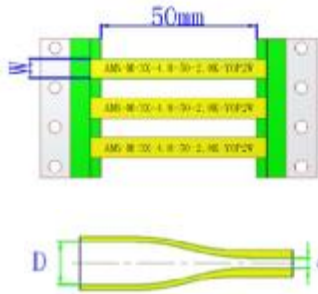
Sleeve length: nominal length is 50mm(the total length is 56.5mm)

Expanded ID: as suppld,nominal inside diameter

Expansion ratio: 2X/3X refers to 2:1or 3:1

Standard wall thickness

Product family:AMS refer to AMS-DTL-23053/5



RSFR
Heat Shrinkable Identification Sleeves

Description: RSFR marker sleeve is a flattened, heat-shrinkable tubing intended for wire and cable harness identification. It can also be used for applications where limited fire hazard characteristics are necessary. When RSFR is printed with Woer recommended printers and ink ribbons, the marks remain legible, durable, even when exposed to abrasion, aggressive cleaning solvents, and industrial fluids.

Standard: SAE-AS 81531, MIL-STD-202F/Method 215J, UL224, RoHS

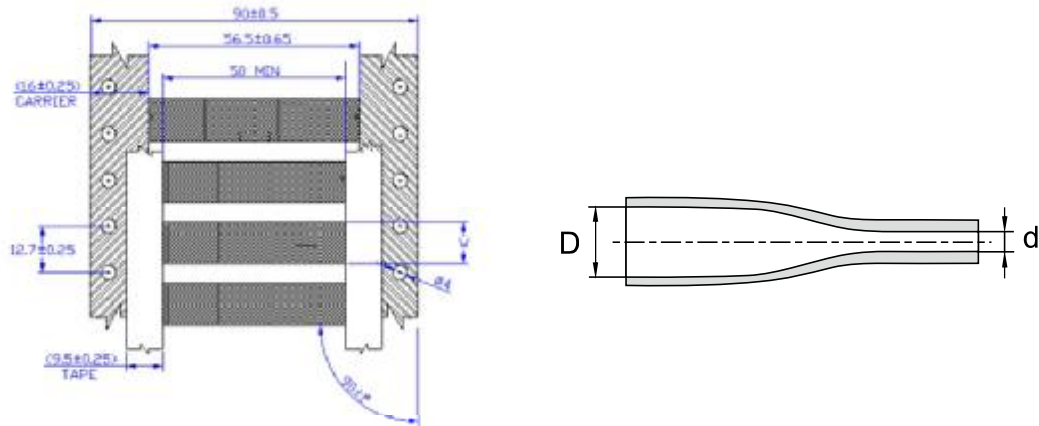
Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound containing no halogens or cadmium in the formulation.
Application range	commercial ,Industrial environment
Operating temperature range	-55~+125℃
Minimum recovery temperature	+125℃
Maximum storage temperature	+50℃
Shrink ratio	2:1, 3:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Thermal transfer printer
Recommended Ribbons	N85 resin ribbon, Black, 100mm(width)*300m(length)

Physic performance

Property	Unit	Testing Requirement	WOER Results
Tensile strength	MPa	10.3	14.3
Ultimate elongation	%	200	330
Low temperature flexibility 4 hours at -55±1℃	-	No cracking	Pass(no cracking)
Dielectric strength	kV/mm	19.7	20
Volume Resistivity	Ω·cm	10 ¹⁴	2.0×10 ¹⁴
Corrosive effect	-	No corrosive	pass
Heat aging	-	168 hours at 158±2℃	Pass(no cracking, print is legible)
Print performance	Rubs	SAE-AS 81531	Pass(legible after 100 rubs)
	Strokes	MIL-STD-202F	Pass(legible after 100 Strokes)

Part Numbering System



- RSFR-M-3X-4.8-50-2.0K-Y 0 P2 W
- Package: W for WOLABLE painting package. O for OEM package
 - Printing: PO/P1/P2 for printing/single-side printing/ double-side printing.
 - Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....
 - Color: Y for yellow, W for white and ten colors are available
 - Standard pack: 2.5K/2K/1.5K/1K/0.5K/0.25K/for 2500/...../500 and 250 pieces
 - Sleeve length: nominal length is 50mm(the total length is 56.5mm)
 - Expanded ID: as supplid,nominal inside diameter
 - Expansion ratio: 2X/3X refers to 2:1 or 3:1
 - Standard wall thickness
 - Product family: RSFR refers to UL 224

Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.

Dimensions

Shrink ratio-2X

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
RSFR-M-2X-2.4-	2.79±0.20	5.0±0.3	0.48±0.10	≤1.18	0.49±0.06
RSFR-M-2X-3.2-	3.64±0.23	6.3±0.4	0.48±0.10	≤1.59	0.51±0.06
RSFR-M-2X-4.8-	5.26±0.25	8.9±0.4	0.49±0.10	≤2.36	0.54±0.06
RSFR-M-2X-6.4-	6.92±0.28	11.5±0.4	0.50±0.10	≤3.18	0.56±0.06
RSFR-M-2X-9.5-	10.2±0.32	16.7±0.5	0.51±0.11	≤4.75	0.59±0.06
RSFR-M-2X-12.7-	13.5±0.36	21.8±0.6	0.52±0.11	≤6.35	0.60±0.07
RSFR-M-2X-19-	20.1±0.40	32.2±0.6	0.53±0.11	≤9.53	0.62±0.07
RSFR-M-2X-25-	26.7±0.45	42.5±0.7	0.55±0.12	≤12.7	0.63±0.07
RSFR-M-2X-38-	39.8±0.51	63.2±0.8	0.57±0.12	≤19.1	0.64±0.07
RSFR-M-2X-51-	53.0±0.56	83.9±0.9	0.58±0.13	≤25.4	0.64±0.08

Shrink ratio-3X

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
RSFR-M-3X-2.4-	2.79±0.20	5.0±0.3	0.47±0.10	≤0.79	0.57±0.06
RSFR-M-3X-3.2-	3.64±0.23	6.3±0.4	0.48±0.10	≤1.06	0.61±0.06
RSFR-M-3X-4.8-	5.26±0.25	8.9±0.4	0.49±0.10	≤1.59	0.67±0.06
RSFR-M-3X-6.4-	6.92±0.28	11.5±0.4	0.50±0.10	≤2.13	0.71±0.06
RSFR-M-3X-9.5-	10.2±0.32	16.7±0.5	0.52±0.11	≤3.18	0.77±0.06
RSFR-M-3X-12.7-	13.5±0.36	21.8±0.6	0.53±0.11	≤4.23	0.80±0.07
RSFR-M-3X-19-	20.1±0.40	32.2±0.6	0.55±0.11	≤6.35	0.84±0.07
RSFR-M-3X-25-	26.7±0.45	42.5±0.7	0.56±0.12	≤8.47	0.86±0.07
RSFR-M-3X-38-	39.8±0.51	63.2±0.8	0.57±0.12	≤12.9	0.89±0.07
RSFR-M-3X-51-	53.0±0.56	83.9±0.9	0.57±0.13	≤17.2	0.90±0.08

Package Information

Ordering Size (RSFR-M-2X/3X)	Ladder Format Type	Continuous Type
	Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)
Φ2.4	2500	50
Φ3.2	2000	100
Φ4.8	2000	100
Φ6.4	2000	100
Φ9.5	1000	100
Φ12.7	1000	100
Φ19	500	100
Φ25	500	100
Φ38	500	50
Φ51	250	50



PSFR



PSFR
High-temperature,Heat Shrinkable Identification Sleeves

Description: PSFR marker sleeve is flattened, heat-shrinkable tubing designed for wire and cable identification in high temperature applications or where extreme resistance to fuels, lubricants and cleaning solvents is required. When PSFR is printed with Woer recommended printers and ink ribbon, the marks remain legible, durable, even when exposed to abrasion, aggressive cleaning solvents, and industrial fluids.

Standard : AMS-DTL-23053/18, SAE-AS 81531, MIL-STD-202F/Method 215J, UL224, RoHS

Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified PVDF
Application range	Aerospace, defense and mass transit industries.
Operating temperature range	-55~+225℃
Minimum recovery temperature	+150℃
Maximum storage temperature	+50℃
Shrink ratio	2:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Thermal transfer printer
Recommended Ribbons	N95 resin ribbon, Black, 100mm(width)*300m(length)

Dimensions

Part Number	As Supplied (mm)	After Recovery(mm)	
	ID (D)	ID (d)	Single Wall Thickness
PSFR-2X-2.4-*	2.4	1.2	0.25±0.05
PSFR-2X-3.2-*	3.2	1.6	0.25±0.05
PSFR-2X-4.8-*	4.8	2.4	0.25±0.05
PSFR-2X-6.4-*	6.4	3.2	0.30±0.08
PSFR-2X-9.5-*	9.5	4.8	0.30±0.08
PSFR-2X-12.7-*	12.7	6.4	0.30±0.08
PSFR-2X-19.1-*	19.1	9.5	0.43±0.08
PSFR-2X-25.4-*	25.4	12.7	0.48±0.08
PSFR-2X-38.1-*	38.1	19.1	0.60±0.10

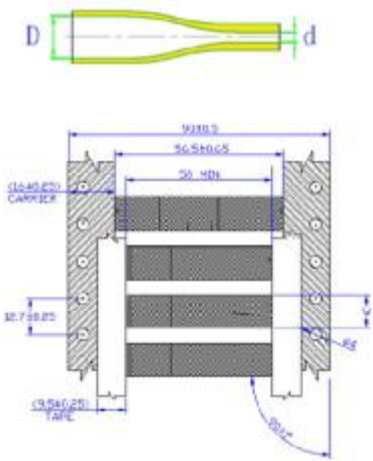
Package Information

Ordering Size (PSFR-M-2X)	Ladder Format Type	Continuous Type
	Small Box Packing (PCS/Box)	Paper reel Packing (m/reel)
Φ2.4	2500	50
Φ3.2	2000	100
Φ4.8	2000	100
Φ6.4	2000	100
Φ9.5	1000	100
Φ12.7	1000	100
Φ19	500	100
Φ25	500	100
Φ38	500	50

Part Numbering System

PSFR-M-2X-4.8-50-2.0K-Y 0 P2 W

- Package: W for WOLABLE painting package.O for OEM package
- Printing :PO/P1/P2 for printing/single-side printing/ double-side printing.
- Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....
- Color: Y for yellow, W for white and ten colors are available
- Standard pack: 2.5K/2K/1.5K/1K/0.5K/0.25K for 2500/...../500 and 250 pieces
- Sleeve length: nominal length is 50mm(the total length is 56.5mm)
- Expanded ID : as suppld,nominal inside diameter
- Expansion ratio: 2X refers to 2:1
- Standard wall thickness
- Product family:PVDF



Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.



HMS

Diesel Resistant Identification Sleeves

Description: HMS marker sleeves are used to identify wires and cables where exposure to organic fluids, especially diesel oils, for long period of high of temperatures.

Standard : HMS meets AMS-DTL-23053/6 Class 1, NF F 00608
Categories A&H, SAE-AS 81531, MIL-STD-202F/Method 215J, RoHS

Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound
Application range	Military industry; Aerospace & defense; Marine;
Operating temperature range	-55~+135°C
Minimum recovery temperature	+135°C
Maximum storage temperature	+50°C
Shrink ratio	3:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Either Thermal transfer printer or Laser printer is OK.
Recommended Ribbons	N85 resin ribbon, Black, 100mm(width)*300m(length)

Dimensions

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
HMS-M-3X-2.4-	2.79±0.20	5.0±0.3	0.47±0.10	≤0.79	0.57±0.06
HMS-M-3X-3.2-	3.64±0.23	6.3±0.4	0.48±0.10	≤1.06	0.61±0.06
HMS-M-3X-4.8-	5.26±0.25	8.9±0.4	0.49±0.10	≤1.59	0.67±0.06
HMS-M-3X-6.4-	6.92±0.28	11.5±0.4	0.50±0.10	≤2.13	0.71±0.06
HMS-M-3X-9.5-	10.2±0.32	16.7±0.5	0.52±0.11	≤3.18	0.77±0.06
HMS-M-3X-12.7-	13.5±0.36	21.8±0.6	0.53±0.11	≤4.23	0.80±0.07
HMS-M-3X-19-	20.1±0.40	32.2±0.6	0.55±0.11	≤6.35	0.84±0.07
HMS-M-3X-25-	26.7±0.45	42.5±0.7	0.56±0.12	≤8.47	0.86±0.07
HMS-M-3X-38-	39.8±0.51	63.2±0.8	0.57±0.12	≤12.9	0.89±0.07

Package Information

Ordering Size (HMS-M-3X)	Ladder Format Type	Continuous Type	
	A&B-Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)	B-Plastic reel Packing (m/reel)
Φ2.4	2500	50	25
Φ3.2	2000	100	25
Φ4.8	2000	100	25
Φ6.4	2000	100	25
Φ9.5	1000	100	25
Φ12.7	1000	100	25
Φ19	500	100	25
Φ25	500	100	25
Φ38	500	50	25

Part Numbering System

HMS-M-3X-4.8-50-2.0K-Y 0 P2 W

- Package: W for WOLABLE painting package, O for OEM package
- Printing: P0/P1/P2 for printing/single-side printing/ double-side printing
- Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....
- Color: Y for yellow, W for white and ten colors are available
- Standard pack: 2.5K/2K/1.5K/1K/0.5K/0.25K for 2500/...../500 and 250 pieces
- Sleeve length: nominal length is 50mm(the total length is 56.5mm)
- Expanded ID: as supplid,nominal inside diameter
- Expansion ratio: 3X refers to 3:1
- Standard wall thickness
- Product family:HMS refer to AMS-DTL-23053/6

Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.



HNF

Halogen Free Low Smoke Low Hazard Identification Sleeves

Description: HNF marker sleeve is a flattened, heat-shrinkable tubing designed for wire and cable harness identification. It can also be used for applications where limited fire hazard characteristics are necessary. The zero halogen material coupled with low smoke and low toxic fume emissions make this product perfectly used in enclosed spaces such as mass transit, marine and industrial installations.

Standard : NF F16-101, DIN5510-2, BS 6853, EN45545-2, SAE-AS 81531, MIL-STD-202F/Method 215J, RoHS ,FPA130

Features

Material	The sleeving shall be fabricated from irradiated, thermally stabilized and flame retarded modified polyolefin compound containing no halogens or cadmium in the formulation.
Application range	Industrial environment ; Rail & mass transit; Aerospace & defense; Marine;
Operating temperature range	-55~+125℃
Minimum recovery temperature	+115℃
Maximum storage temperature	+40℃
Shrink ratio	2:1
Color	White, Yellow, other color is available if ordered
Printing mode	Single sided printing and Double sided printing formats available
Supplied mode	Either Continuous type or Ladder format type is available
Recommended Printers	Thermal transfer printer
Recommended Ribbons	N85 resin ribbon, Black, 100mm(width)*300m(length)

Dimensions

Part Number	As Supplied (mm)			After Recovery(mm)	
	ID (D)	Flatten Width (W)	Double Wall Thickness	ID (d)	Single Wall Thickness
HNF-M-2X-2.4-	2.79±0.20	5.0±0.3	0.48±0.10	≤1.18	0.49±0.06
HNF-M-2X-3.2-	3.64±0.23	6.3±0.4	0.48±0.10	≤1.59	0.51±0.06
HNF-M-2X-4.8-	5.26±0.25	8.9±0.4	0.49±0.10	≤2.36	0.54±0.06
HNF-M-2X-6.4-	6.92±0.28	11.5±0.4	0.50±0.10	≤3.18	0.56±0.06
HNF-M-2X-9.5-	10.2±0.32	16.7±0.5	0.51±0.11	≤4.75	0.59±0.06
HNF-M-2X-12.7-	13.5±0.36	21.8±0.6	0.52±0.11	≤6.35	0.60±0.07
HNF-M-2X-19-	20.1±0.40	32.2±0.6	0.53±0.11	≤9.53	0.62±0.07
HNF-M-2X-25-	26.7±0.45	42.5±0.7	0.55±0.12	≤12.7	0.63±0.07
HNF-M-2X-38-	39.8±0.51	63.2±0.8	0.57±0.12	≤19.1	0.64±0.07

Package Information

Ordering Size (HNF-M-2X)	Ladder Format Type	Continuous Type	
	A&B-Small Box Packing (PCS/Box)	A-Paper reel Packing (m/reel)	B-Plastic reel Packing (m/reel)
Φ2.4	2500	50	25
Φ3.2	2000	100	25
Φ4.8	2000	100	25
Φ6.4	2000	100	25
Φ9.5	1000	100	25
Φ12.7	1000	100	25
Φ19	500	100	25
Φ25	500	100	25
Φ38	500	50	25

Part Numbering System

HNF-M-3X-4.8-50-20K-Y0 P2 W

- Package: W for WOLABLE painting package, O for OEM package
- Printing: P0/P1/P2 for printing/single-side printing/ double-side printing
- Dash line: 0/1/2/3.....for not need/one line/two-line/three-line.....
- Color: Y for yellow, W for white and ten colors are available
- Standard pack: 2.5K/2K/1.5K/1K/0.5K/0.25K for 2500/...../500 and 250 pieces
- Sleeve length: nominal length is 50mm(the total length is 56.5mm)
- Expanded ID: as supplid,nominal inside diameter
- Expansion ratio: 2X refers to 2:1
- Standard wall thickness
- Product family: HNF

Color code	BL	Br	R	Or	Y	G	Blu	V	Gr	W
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

Note: Yellow and white are standard, other color is available if ordered.



PUR

Indentification Tags

Description: The PUR cable markers are made of a thermoplastic polyurethane material, which is a halogen free, flame retardant, hydrolysis and micro organism resistant material. The raw material fulfills UL94-V0. For identification of cables and wires, the markers are supplied on rolls for thermal transfer print.

Use : Markers can be easily removed from the carrier, and applied to cables and wire bundles using cable dies. Thermal transfer printer and WO-80500BK ribbon are recommended for meeting printing performance requirements of SAE AS 81531 and MIL-STD-202F.

Specification and size

Order Code	Color	Pack size (pcs/coil)	Marker high (mm)	Marker length (mm)
PUR-M-4H-10-60-1K-W	White	1000	10	60
PUR-M-4H-15-75-1K-W	White	1000	15	75
PUR-M-4H-25-75-0.5K-W	White	500	25	75
PUR-M-4H-10-60-1K-BL	Black	1000	10	60
PUR-M-4H-15-75-1K-BL	Black	1000	15	75
PUR-M-4H-25-75-0.5K-BL	Black	500	25	75
PUR-M-4H-10-60-1K-Y	Yellow	1000	10	60
PUR-M-4H-15-75-1K-Y	Yellow	1000	15	75
PUR-M-4H-25-75-0.5K-Y	Yellow	500	25	75
PUR-M-4H-10-60-1K-R	Red	1000	10	60
PUR-M-4H-15-75-1K-R	Red	1000	15	75
PUR-M-4H-25-75-0.5K-R	Red	500	25	75

Physic Performance

Properties	Test Method	Typical value
Hardness	DIN 53505	58 Shore D
Density	DIN 53475	1.27g/cm ³
Tensile strength	DIN 53504	30MPa
Ultimate elongation	DIN 53504	400%
Stress at 20% elongation	DIN 53504	13MPa
Stress at 100% elongation	DIN 53504	19MPa
Stress at 300% elongation	DIN 53504	33MPa
Tear Strength	DIN 53515	110N/mm
Abrasion Loss	DIN 53516	30 mm ³
Compression set at room temperature	DIN EN ISO 815	30%
Compression set at 70°C	DIN EN ISO 815	45%
Notched impact strength (Charpy) +23°C	DIN EN ISO 179	50 kJ/m ²



RSFR / AMS / HMS / HNF

Identification Tags“Ladder Type”

Thermal transfer

Description: According to the structure of label card, the identification tag is made of environment-friendly polyolefin material by means of bombardment and cross-link of high energy electron bunch.

They are mainly applied in the domains such as high-trials, subways, MU train□ nuclear power station, airplane and space shuttles where the wide-diameter cable and bundle labels with high reliability are required to applied, especially in severe environment.

Use : Markers can be easily removed from the carrier, and applied to cables and wire bundles using cable dies. Thermal transfer printer and WO-80500BK ribbon are recommended for meeting printing performance requirements of SAE AS 81531 and MIL-STD-202F.

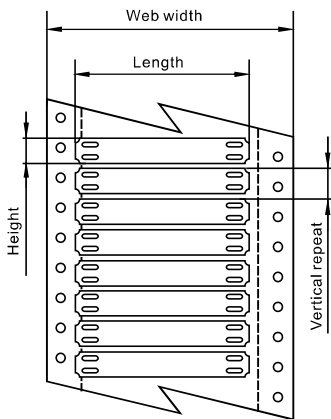
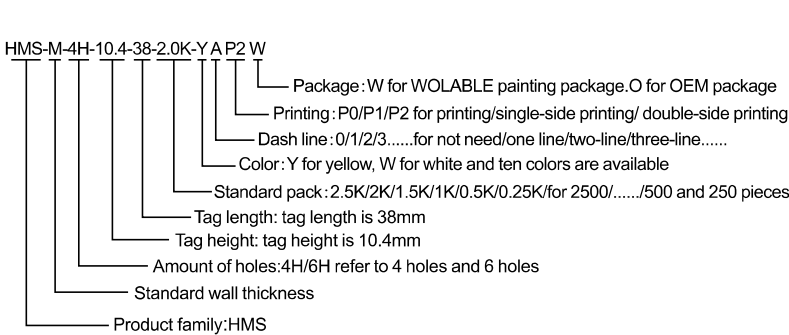
Physic performance

Properties	AMS	HMS	HNF	RSFR	Test Method
Tensile strength (MPa)	≥10.3	≥13.8	≥10.3	≥10.3	ASTM D2671
Tensile strength after aging (MPa)	≥6.9	≥11.1	≥6.9	≥6.9	ASTM D2671
Ultimate elongation after aging(%)	≥200	≥200	≥200	≥200	ASTM D2671
Ultimate elongation(%)	≥100	≥100	≥100	≥100	ASTM D2671
Voltage withstand(V)	2500 V,60s,Pass	2500 V,60s,Pass	2500 V,60s,Pass	2500 V,60s,Pass	UI224
Dielectric strength (MV/m)	≥19.7	≥19.7	≥19.7	≥19.7	ASTM D2671
Volume resistivity(Ω • cm)	≥10 ¹⁴	≥10 ¹⁴	≥10 ¹⁴	≥10 ¹⁴	ASTM D2671
Water absorption(%)	≤0.5	≤0.5	≤1.0	≤1.0	ASTM D570
Corrosion	Pass	Pass	Pass	Pass	UL 224
Heat shock	No cracks , flowing or dripping	No cracks , flowing or dripping	No cracks , flowing or dripping	No cracks , flowing or dripping	UL 224
Low temperature flexibility	No cracks	No cracks	No cracks	No cracks	UL 224
Flammability	VW-1	VW-1	DIN5510-2 S3	60s self-extingish	UL 224 □ DIN5510-2
Smoke density Ao	NG	NG	0.17	NG	BS6853
Index of toxic fume R	NG	NG	0.56	NG	BS6853

Specification and size

Order Code	Pack size (pcs/coil)	Marker high (mm)	Marker length (mm)
RSFR-4H-10.4-45-2K-W-B-P0-*	2000	10.4	45
RSFR-4H-10.4-53-2K-W-B-P0-*	2000	10.4	53
RSFR-4H-10.4-64-2K-W-B-P0-*	2000	10.4	64
RSFR-6H-10.4-76-2K-W-B-P0-*	2000	10.4	76
RSFR-6H-10.4-90-2K-W-B-P0-*	2000	10.4	90
RSFR-4H-12.0-102-2K-W-B-P0	2000	12.0	102
RSFR-4H-15.0-45-1.5K-W-B-P0	1500	15.0	45
RSFR-4H-15.0-53-1.5K-W-B-P0	1500	15.0	53
RSFR-4H-15.0-64-1.5K-W-B-P0	1500	15.0	64
RSFR-6H-15.0-76-1.5K-W-B-P0	1500	15.0	76
RSFR-6H-15.0-90-1.5K-W-B-P0	1500	15.0	90
RSFR-4H-20.3-45-1K-W-B-P0-*	1000	20.3	45
RSFR-4H-20.3-53-1K-W-B-P0-*	1000	20.3	53
RSFR-4H-20.3-64-1K-W-B-P0-*	1000	20.3	64
RSFR-6H-20.3-76-1K-W-B-P0-*	1000	20.3	76
RSFR-6H-20.3-90-1K-W-B-*-P0	1000	20.3	90
RSFR-4H-25.4-45-1K-W-B-*-P0	1000	25.4	45
RSFR-4H-25.4-53-1K-W-B-*-P0	1000	25.4	53
RSFR-4H-25.4-64-1K-W-B-*-P0	1000	25.4	64
RSFR-6H-25.4-76-1K-W-B-*-P0	1000	25.4	76
RSFR-6H-25.4-90-1K-W-B-*-P0	1000	25.4	90

Part Numbering System





WO-80500BK

Ribbon Data Sheet

Description&application: WO-80500BK (N85) — is an ultra- high durability black resin thermal transfer ribbon, tested and approved for use on WOER AMS-M, HMS-M, DIN-M and HNF-M wire marker sleeves as well as RSFR/AMS/HMS/HNF cable marker tags. For reliable print performance and durability, please use WOER recommended compatible printers.

Characteristics

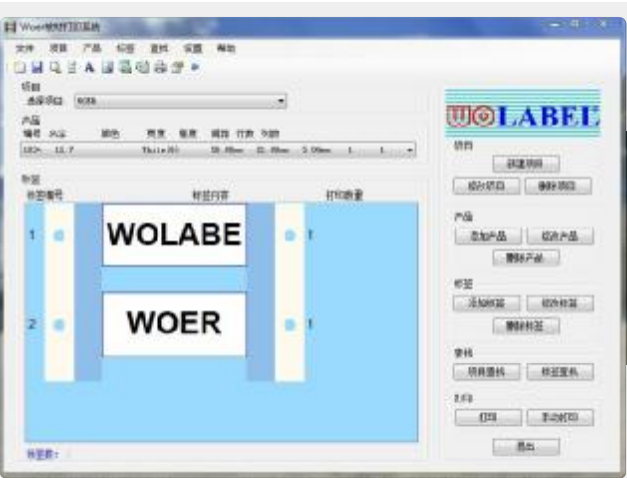
Manufacturer:	WOER
The max storage temperature:	-5°C-40°C
Operating temperature:	5°C-35°C
The delivery temperature:	-5°C-45°C
Complied standards:	SAE AS 81531 and MIL-STD-202F/215J
Ribbon width:	100 mm ; 60mm; 40mm
Ribbon length:	300 m
Printable area:	100% full area
Internal diameter:	25mm
Outside diameter:	62mm
Ink:	Resin
Standard color:	Black
Ribbon wind direction:	Ink exterior

Recommended printers and materials

Properties	Typical value
Compatible printer:	WO-III,110-600DPI
	WO-III,110-300DPI
Compatible materials:	AMS, HMS, RSFR, HNF

SOFTWARE

WOLABEL-1/3 Software for Wire Marker and Label Printing



Computer Configuration
Processor: Intel Pentium CPU, 400MHz minimum
Ram: 64Mb minimum.
Operation system: Windows 95/ 98/ 2000/ Me / NT/ XP.
Hardware: 250 Mb minimum.
Software: Office 2000 or higher version can support data importing and exporting.

- Order Infor
- Printing software:
- WOLABEL-3/ENG (tri-users, English version)
 - WOLABEL-1/ ENG (single-user, English version)
 - WOLABEL-3/CHN (tri-users, Chinese version)
 - WOLABEL-1/CHN (single--user, Chinese version)

Description: The customized printing software for WOLABEL wire marker and label printing is specially designed and developed industrial software by the R&D department of Shenzhen Woer Heat-shrinkable Material Co, Ltd.

The WOLABEL wire marker and label printing software can be used in industrial manufacturing environment. The easy and simple operation interface enables the customers to learn and master it fast. In the mean while, the printing fault ratio is controlled to the lowest.

This WOLABEL software offers English and Chinese operation interface with powerful editing functions to satisfy the needs of users.

The WOLABEL software can meet the printing requirements of labels for all kinds of cables and wires.

Characteristics

WOLABEL software can save data to let user's repeat calling, edition. What is more, for the powerful design functions for label, this software not only can print commercial labels but also can print labels of cables and wires.

1. Design Label
 - Self-defining function enable the users to set the sizes and styles of label as they will.
 - Insertion new label function enable the users to insert 1 to n pieces of labels between any ones.
 - Supports multi-line and parades editing.
 - Can set the sizes and styles of characters, with different to be edited and the length of characters can be set as users want.
 - Can insert logo or pictures.
2. Set Printing
 - Default auto and manual printing.
 - Can repute printing for any times.
 - Can print multi-line and parades in one time.
3. Data management
 - Easy to search and locate the saved labels, the user can edit them in the same time.
 - Can browse, display and edit a lot of labels on a same Interface.
 - The edited labels can be saved as a document then be called again.
 - Can get one or several parades of labels and are export from or import into an Excel.
 - Can recall or print data for any times.
 - Auto array transposition for data in an Excel.



Single Wall Products

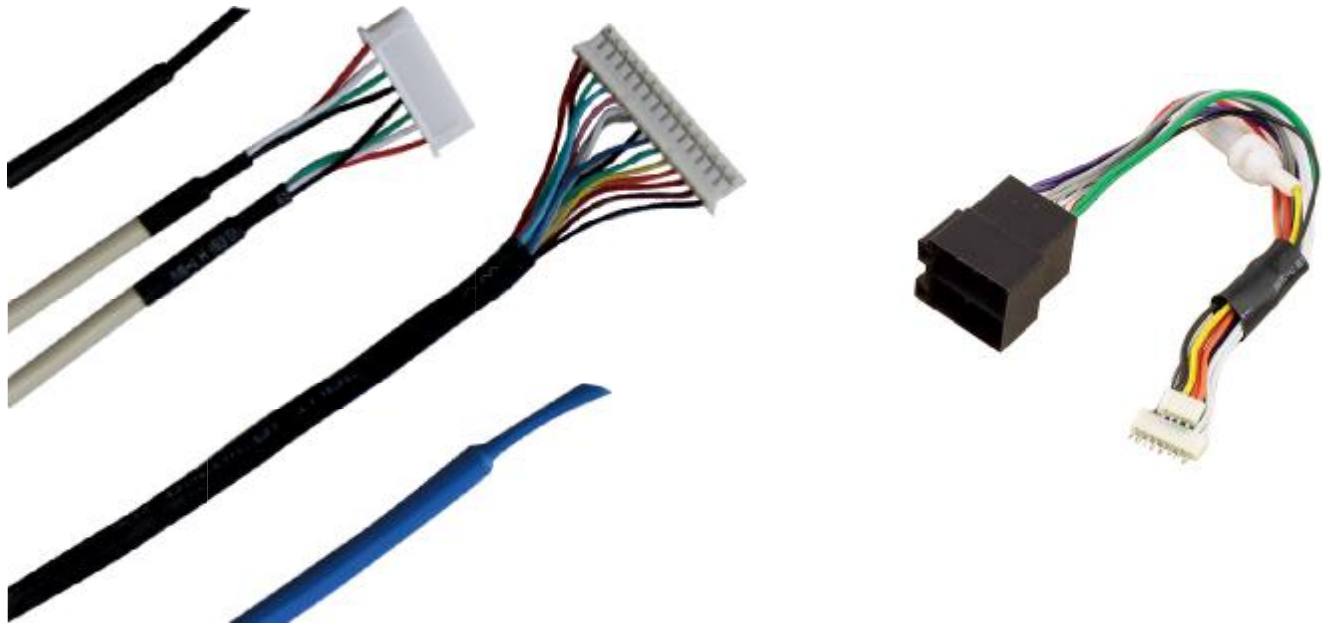
C

Single Wall heat shrinkable tubing is used in the electronics,automotive, military&aerospace sectors in a variety of applications,including:

- Mechanical Protection
- Abrasion Protection
- Strain Relief
- Moisture Protection
- Cable Insulation
- Marking & Bundling of electronic components

CONTENTS

Part No.	Item	Pages
RSFR-H (H)	Thin wall halogen free,flexible heat shrink tubing	C01
RSFR-HCB (H)	Ultra thin wall halogen free,flexible heat shrink tubing.	C03
RSFR-H	Universal heat shrink tubing with excellent physical and mechanical properties	C05
RSFR-H(3X)	Universal heat shrink tubing with excellent physical and mechanical properties	C07
RSFR-HCB	Ultra thin wall, very flexible heat shrink tubing	C09
RSFR-(2X, 3X) YG	Yellow/Green stripped thin wall cross-linked polyolefin heat shrink tubing	C11
RSFR-135G(2X)	Flame retardant,multi-purpose heat shrink tubing	C13
RSFR-135G(3X)	Ultra thin wall, very flexible heat shrink tubing	C15
RSFR-105	Economical, non self-extinguishing Halogen free, heat shrink tubing	C17
RSFR-HT(2X)	150°C Flame retardant heat shrink tubing	C19
PO	Non-shrinkable,Irradiated,Flexible Flame-retardant,Polyolefin Tubing	C21
WMPG	Heat Shrink Busbar Tube	C25
RSFRNH-BTM	Medium Voltage Cross-linked Polyolefin Bus-Bar Tubing	C27
WRS LD	Heat Shrink Neoprene Tube	C29
WRS GX	Optical Fiber Fusion Splice Protection Sleeves	C31





RSFR-H(H)

Thin wall halogen free,flexible
heat shrink tubing.



Features

- Ultra thin wall
- Flexible
- Halogen free
- Flame retardant
- low smoke generation if burning
- Continuous operating
Temperature:-55℃ to 125℃
- Fully shrink temperature:125℃
- RoHS and Sony compliant



Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter Max mm	Wall Thickness Nom mm	Spool Length M/spool
3/64	0.8	1.1±0.2	0.50	0.22	200
1/16	1.0	1.5±0.2	0.65	0.28	200
	1.5	2.0±0.2	0.85	0.32	200
3/32	2.0	2.5±0.2	1.00	0.35	200
	2.5	3.0±0.2	1.30	0.38	200
1/8	3.0	3.5±0.2	1.50	0.40	200
	3.5	4.0±0.2	1.80	0.42	200
	4.0	4.5±0.2	2.00	0.45	200
3/16	4.5	5.0±0.2	2.30	0.50	100
	5.0	5.5±0.2	2.5	0.55	100
1/4	6.0	6.5±0.2	3.0	0.55	100
5/16	7.0	7.5±0.3	3.5	0.55	100
	8.0	8.5±0.3	4.0	0.60	100
3/8	9.0	9.5±0.3	4.5	0.60	100
	10.0	10.5±0.3	5.0	0.60	100
	11.0	11.5±0.3	5.5	0.60	100
1/2	12.0	12.5±0.3	6.0	0.60	100
	13.0	13.5±0.3	6.5	0.65	100
	14.0	14.5±0.3	7.0	0.65	100
5/8	15.0	15.5±0.4	7.5	0.70	100
	16.0	16.5±0.4	8.0	0.70	100
	17.0	17.5±0.4	8.5	0.70	100
3/4	18.0	19.0±0.5	9.0	0.80	100
	20.0	21.0±0.5	10.0	0.80	100
	22.0	23.0±0.5	11.0	0.80	100
1	25.0	26.0±0.5	12.5	0.90	50
	28.0	29.0±0.5	14.0	0.90	50
1-1/4	30.0	31.5±1.0	15.0	0.95	50
	35.0	36.5±1.0	17.5	1.00	50
1-1/2	40.0	41.5±1.0	20.0	1.00	50
	45.0	46.5±1.0	22.5	1.00	25
2	50.0	≥50	25.0	1.00	25
	60.0	≥60	31.0	1.30	25
	70.0	≥70	36.0	1.30	25
3	80.0	≥80	41.0	1.46	25
	90.0	≥90	46.0	1.46	25
4	100.0	≥100	51.0	1.46	25
5	120.0	≥120	61.0	1.56	25
6	150.0	≥150	76.0	1.56	25
7	180.0	≥180	91.0	1.56	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥ 10.4
Ultimate elongation(%)	ASTM D 2671	≥ 200
Tensile strength after heat aged (Mpa)	158°CX168h	≥ 7.3
Ultimate elongation after heat aged (%)	158°CX168h	≥ 100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Dielectric strength (kV/mm)	ASTM D 149	≥ 15
Volume resistivity (Ω·cm)	ASTM D 876	≥ 10 ¹⁴



RSFR-HCB(H)

Ultra thin wall halogen free,flexible
heat shrink tubing.



Features

- Ultra thin wall
- Flexible
- Halogen free
- Flame retardant
- low smoke generation if burning
- Continuous operating
Temperature:-55℃ to 125℃
- Fully shrink temperature:110℃
- RoHS and Sony compliant

Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Wall Thickness mm	Spool Length M/spool
1/16	1.0	1.4±0.2	0.65	0.20	200
	1.5	1.9±0.2	0.85	0.20	200
3/32	2.0	2.4±0.2	1.00	0.22	200
	2.5	2.9±0.2	1.30	0.25	200
1/8	3.0	3.4±0.2	1.50	0.28	200
	3.5	3.9±0.2	1.80	0.28	200
	4.0	4.4±0.2	2.00	0.30	200
3/16	4.5	4.9±0.2	2.30	0.30	100
	5.0	5.5±0.2	2.5	0.32	100
1/4	6.0	6.5±0.2	3.0	0.32	100
5/16	7.0	7.5±0.3	3.5	0.32	100
	8.0	8.5±0.3	4.0	0.32	100
3/8	9.0	9.5±0.3	4.5	0.35	100
	10.0	10.5±0.3	5.0	0.35	100
	11.0	11.5±0.3	5.5	0.40	100
1/2	12.0	12.5±0.3	6.0	0.40	100
	13.0	13.5±0.3	6.5	0.40	100
	14.0	14.5±0.3	7.0	0.40	100
5/8	15.0	15.5±0.4	7.5	0.40	100
	16.0	16.5±0.4	8.0	0.40	100
	17.0	17.5±0.4	8.5	0.40	100
3/4	18.0	18.5±0.4	9.0	0.42	100
	20.0	20.5±0.5	10.0	0.45	100
	22.0	22.5±0.5	11.0	0.45	100
1	25.0	25.5±0.5	12.5	0.45	50

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥10.4
Ultimate elongation(%)	ASTM D 2671	≥200
Tensile strength after heat aged (Mpa)	158°CX168h	≥7.3
Ultimate elongation after heat aged (%)	158°CX168h	≥100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Dielectric strength (kV/mm)	ASTM D 149	≥15
Volume resistivity (Ω·cm)	ASTM D 876	≥10 ¹⁴



RSFR-H

Universal heat shrink tubing with
excellent physical and mechanical
properties



Features

- Flexible
- Flame retardant
- Continuous operating temperature:-55℃~125℃
- Fully shrink temperature:≥125℃
- RoHS compliant

Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Wall Thickness mm	Spool Length M/spool
3/64	0.8	1.1±0.2	0.50	0.22	200
1/16	1.0	1.5±0.2	0.65	0.28	200
	1.5	2.0±0.2	0.85	0.32	200
3/32	2.0	2.5±0.2	1.00	0.35	200
	2.5	3.0±0.2	1.30	0.38	200
1/8	3.0	3.5±0.2	1.50	0.40	200
	3.5	4.0±0.2	1.80	0.42	200
	4.0	4.5±0.2	2.00	0.45	200
3/16	4.5	5.0±0.2	2.30	0.50	200
	5.0	5.5±0.2	2.5	0.55	100
1/4	6.0	6.5±0.2	3.0	0.55	100
5/16	7.0	7.5±0.3	3.5	0.55	100
	8.0	8.5±0.3	4.0	0.60	100
3/8	9.0	9.5±0.3	4.5	0.60	100
	10.0	10.5±0.3	5.0	0.60	100
	11.0	11.5±0.3	5.5	0.60	100
1/2	12.0	12.5±0.3	6.0	0.60	100
	13.0	13.5±0.3	6.5	0.65	100
	14.0	14.5±0.3	7.0	0.65	100
5/8	15.0	15.5±0.4	7.5	0.70	100
	16.0	16.5±0.4	8.0	0.70	100
	17.0	17.5±0.4	8.5	0.70	100
3/4	18.0	19.0±0.5	9.0	0.80	100
	20.0	21.0±0.5	10.0	0.80	100
	22.0	23.0±0.5	11.0	0.80	100
1	25.0	26.0±0.5	12.5	0.90	50
	28.0	29.0±0.5	14.0	0.90	50
1-1/4	30.0	31.5±1.0	15.0	0.95	50
1-1/2	35.0	36.5±1.0	17.5	1.00	50
	40.0	41.5±1.0	20.0	1.00	50
2	45.0	46.5±1.0	22.5	1.00	25
	50.0	≥50	25.0	1.00	25
	60.0	≥60	31.0	1.30	25
	70.0	≥70	36.0	1.30	25
	80.0	≥80	41.0	1.46	25
3	90.0	≥90	46.0	1.46	25
	100.0	≥100	51.0	1.46	25
5	120.0	≥120	61	1.56	25
6	150.0	≥150	76	1.56	25
7	180.0	≥180	91	1.56	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥10.4
Ultimate elongation(%)	ASTM D 2671	≥200
Tensile strength after heat aged(Mpa)	158°CX168h	≥7.3
Ultimate elongation after heat aged (%)	158°CX168h	≥100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Voltage withstand	UL 224, 2500V, 60s	No breakdown
Dielectric strength (kV/mm)	ASTM D 149	≥15
Volume resistivity (Ω·cm)	ASTM D 876	≥10 ¹⁴



RSFR-H(3X)

Universal heat shrink tubing with excellent physical and mechanical properties



Features

- Flexible
- Flame retardant
- Ultra thin wall
- Continuous operating temperature:-55℃~125℃
- Fully shrink temperature:≥125℃
- RoHS compliant

Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Wall Thickness mm	Spool Length M/spool
1/16	1.5	1.6±0.1	≤0.50	0.45±0.10	200
1/8	3.0	3.2±0.1	≤1.00	0.55±0.10	200
3/16	4.5	4.7±0.1	≤1.50	0.60±0.10	200
1/4	6.0	6.2±0.1	≤2.00	0.65±0.10	100
3/8	9.0	9.3±0.2	≤3.00	0.75±0.15	100
1/2	12.0	12.3±0.2	≤4.00	0.75±0.15	100
5/8	15.0	15.3±0.2	≤5.00	0.80±0.15	100
3/4	18.0	18.3±0.2	≤6.00	0.85±0.15	100
1	24.0	24.4±0.3	≤8.00	1.00±0.20	50
1-1/4	30.0	30.4±0.3	≤10.0	1.15±0.20	50
1-1/2	39.0	39.6±0.5	≤13.0	1.50±0.20	50
2	50.0	50.6±0.5	≤16.0	2.50±0.20	25
	60.0	61.5±1.0	≤20.0	2.60±0.20	25
	70.0	71.5±1.0	≤23.0	2.60±0.20	25
3	80.0	81.5±1.0	≤26.0	2.60±0.20	25
	90.0	91.5±1.0	≤30.0	2.60±0.20	25
4	100.0	101.5±1.0	≤33.0	2.60±0.20	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥10.4
Ultimate elongation(%)	ASTM D 2671	≥200
Tensile strength after heat aged(Mpa)	158℃X168h	≥7.3
Ultimate elongation after heat aged (%)	158℃X168h	≥100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Voltage withstand	UL 224, 2500V, 60s	No breakdown
Dielectric strength (kV/mm)	ASTM D 149	≥15
Volume resistivity (Ω·cm)	ASTM D 876	≥10 ¹⁴



RSFR-HCB

Ultra thin wall, very flexible Heat shrink tubing



Features

- Ultra thin wall
- Very flexible
- Flame retardant
- Continuous operating
Temperature:-55℃ to 125℃
- Fully shrink temperature:≥110℃
- RoHS compliant

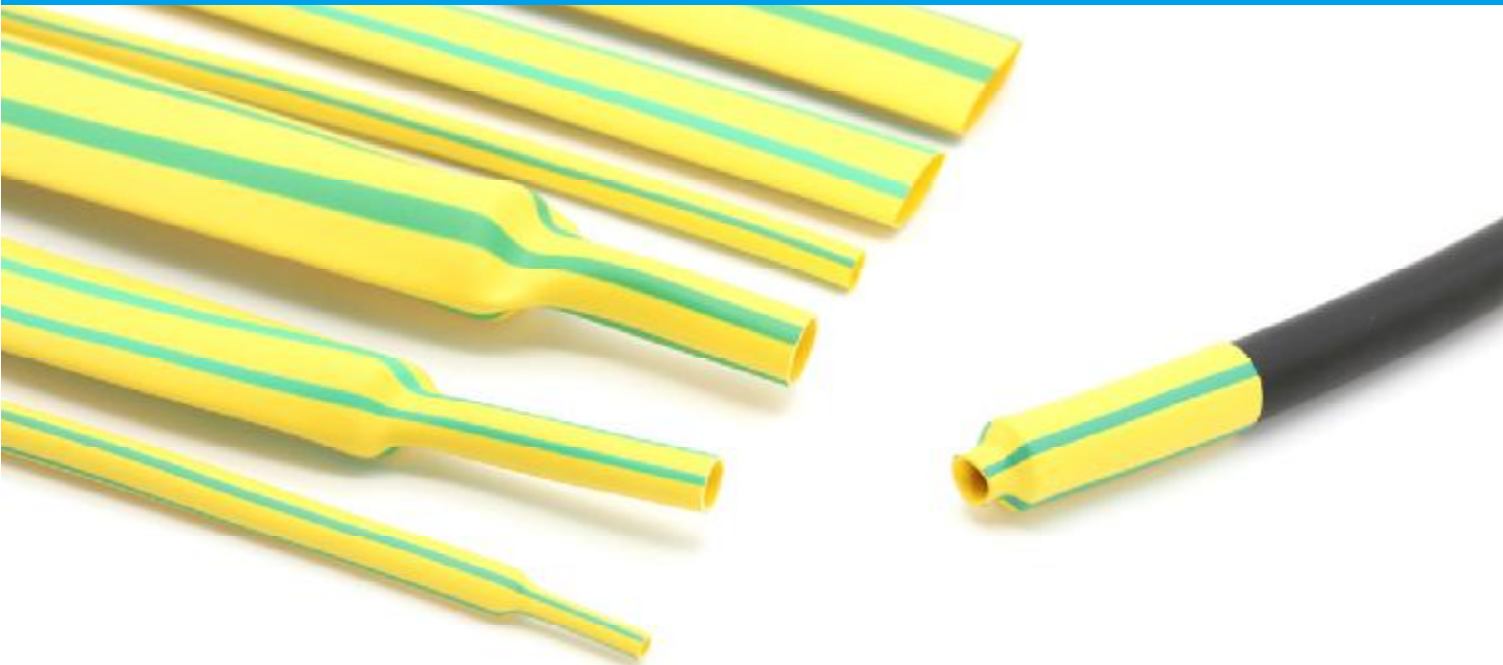
Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Wall Thickness mm	Spool Length M/spool
1/16	1.0	1.4±0.2	0.65	0.20	200
	1.5	1.9±0.2	0.85	0.20	200
3/32	2.0	2.4±0.2	1.00	0.22	200
	2.5	2.9±0.2	1.30	0.25	200
1/8	3.0	3.4±0.2	1.50	0.28	200
	3.5	3.9±0.2	1.80	0.28	200
	4.0	4.4±0.2	2.00	0.30	200
3/16	4.5	4.9±0.2	2.30	0.30	200
	5.0	5.5±0.2	2.5	0.32	100
1/4	6.0	6.5±0.2	3.0	0.32	100
5/16	7.0	7.5±0.3	3.5	0.32	100
	8.0	8.5±0.3	4.0	0.32	100
3/8	9.0	9.5±0.3	4.5	0.35	100
	10.0	10.5±0.3	5.0	0.35	100
	11.0	11.5±0.3	5.5	0.40	100
1/2	12.0	12.5±0.3	6.0	0.40	100
	13.0	13.5±0.3	6.5	0.40	100
	14.0	14.5±0.3	7.0	0.40	100
5/8	15.0	15.5±0.4	7.5	0.40	100
	16.0	16.5±0.4	8.0	0.40	100
	17.0	17.5±0.4	8.5	0.40	100
3/4	18.0	18.5±0.4	9.0	0.42	100
	20.0	20.5±0.5	10.0	0.45	100
	22.0	22.5±0.5	11.0	0.45	100
1	25.0	25.5±0.5	12.5	0.45	50

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥ 10.4
Ultimate elongation(%)	ASTM D 2671	≥ 200
Tensile strength after heat aged (Mpa)	158℃CX168h	≥ 7.3
Ultimate elongation after heat aged (%)	158℃CX168h	≥ 100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Dielectric strength (kV/mm)	ASTM D 149	≥ 15
Volume resistivity (Ω·cm)	ASTM D 876	≥ 10 ¹⁴

RSFR-(2X,3X) YG



RSFR-(2X,3X) YG

Yellow/Green Stripped Thin Wall Cross-linked Polyolefin Heat Shrink Tubing

Yellow/Green stripped, flexible, flame-retardant.



Features

- Stripped color combination designates international electrical grounding
- Flame retardant
- Flexible
- Resists common fluids and solvents
- Continuous operating temperature:-55℃-125℃
- Shrink Temperature:90℃



Single Wall

Dimensions

RSFR-(2X)YG

Size (mm)	Expanded	After Recovery		ROUND/FLAT	Standard Package M/Spool
	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Wall Thickness mm		
1.0	1.5±0.3	0.7	0.28±0.10	Round	200
1.5	2.0±0.3	0.9	0.30±0.10	Round	200
2.0	2.5±0.3	1.0	0.35±0.10	Round	200
2.5	3.0±0.3	1.3	0.36±0.10	Round	200
3.0	3.5±0.4	1.5	0.38±0.10	Round	200
3.5	4.0±0.4	1.8	0.40±0.10	Round	200
4.0	4.5±0.4	2.0	0.45±0.10	Round	200
4.5	5.0±0.4	2.3	0.45±0.10	Round	100
5.0	5.5±0.4	2.5	0.45±0.10	Round	100
6.0	6.5±0.4	3.0	0.50±0.10	Round	100
7.0	7.5±0.4	3.5	0.50±0.10	Flat	100
8.0	8.5±0.5	4.0	0.55±0.10	Flat	100
9.0	9.5±0.5	4.5	0.55±0.10	Flat	100
10.0	10.5±0.5	5.0	0.55±0.10	Flat	100
11.0	11.5±0.5	5.5	0.60±0.10	Flat	100
12.0	12.5±0.5	6.0	0.60±0.10	Flat	100
13.0	13.5±0.5	6.5	0.60±0.10	Flat	100
14.0	14.5±0.5	7.0	0.65±0.10	Flat	100
15.0	15.5±0.6	7.5	0.70±0.10	Flat	100
16.0	17.0±0.6	8.0	0.70±0.10	Flat	100
17.0	17.5±0.6	8.5	0.70±0.10	Flat	100
18.0	19.0±0.7	9.0	0.70±0.15	Flat	100
20.0	22.0±0.7	10.0	0.75±0.15	Flat	100
22.0	24.0±0.7	11.0	0.80±0.15	Flat	100
25.0	26.0±0.7	12.5	0.90±0.15	Flat	50
28.0	29.0±0.7	14.0	0.90±0.15	Flat	50
30.0	31.5±0.7	15.0	0.95±0.15	Flat	50
35.0	36.5±0.7	17.5	0.95±0.15	Flat	50
40.0	41.5±0.7	20.0	1.00±0.20	Flat	50
45.0	46.0±0.7	22.5	1.00±0.20	Flat	25
50.0	51.0±0.7	25.0	1.00±0.20	Flat	25
60.0	≥60.0	30.0	1.10±0.20	Flat	25
70.0	≥70.0	35.0	1.20±0.20	Flat	25
80.0	≥80.0	40.0	1.30±0.20	Flat	25
90.0	≥90.0	45.0	1.50±0.20	Flat	25
100.0	≥100.0	50.0	1.65±0.20	Flat	25
120.0	≥120.0	60.0	1.70±0.20	Flat	15
150.0	≥150.0	75.0	1.70±0.20	Flat	15
180.0	≥180.0	90.0	1.75±0.20	Flat	15

RSFR-(3X)YG

Size (mm)	Expanded	After Recovery		Round/Flat	Standard Package M/Spool
	Internal D iameter Min(mm)	Internal Diameter Max(mm)	Wall Thickness mm		
3.2	3.2	1.0	0.55±0.15	Round	200
4.8	4.8	1.5	0.60±0.15	Round	100
6.4	6.4	2.0	0.65±0.15	Round	100
9.5	9.5	3.0	0.75±0.15	Flat	50
12.7	12.7	4.0	0.75±0.20	Flat	50
19.1	19.1	6.0	0.85±0.20	Flat	50
25.4	25.4	8.0	1.00±0.20	Flat	50
39	39	13.0	1.50±0.20	Flat	50

Technical Data

Property	Test Method	Stantard	Typical Performance
Tensile strength(MPa)	ASTM D2671	≥10.4	11.5
Elongation(%)	ASTM D2671	≥300	450
Tensile strength after aging (MPa)	UL224 158°CX168hr	≥7.3	8.5
Elongation after aging(%)	UI224 158°CX168hr	≥200	350
Dielectric strength(kV/mm)	IEC 60243	≥15	17.5
Volume resistivity(Ω.cm)	ASTM D876	≥1X10 ¹⁴	2.5X10 ¹⁴

RSFR-135G(2X)

Single Wall



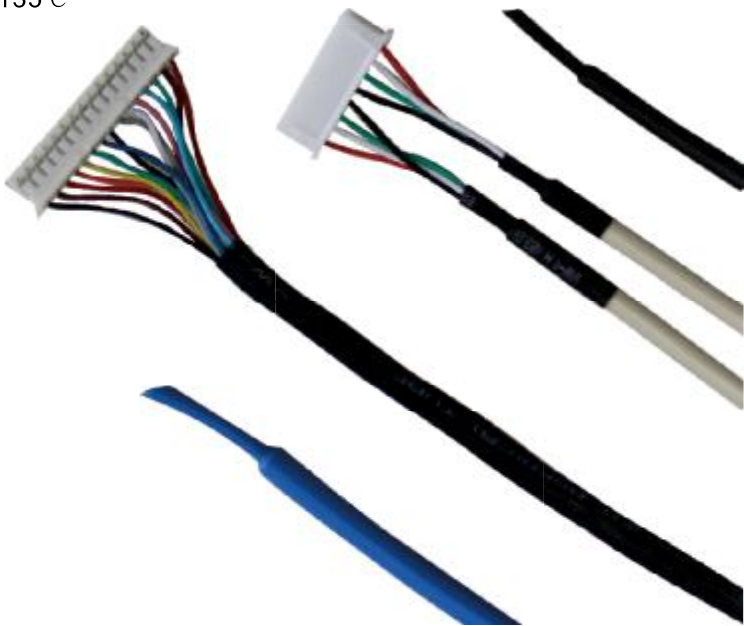
RSFR-135G(2X)

Flame retardant,multi-purpose
heat shrink tubing



Features

- Flexible
- Suitable for various applications
- Continuous Operating Temperature:-55℃ to 135℃
- Fully shrink temperature:120℃
- RoHS compliant
- Meet SAE-AMS-DTL
-23053/5
Class 1 and 3



Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Wall Thickness mm	Spool Length M/spool
3/64	1.0	≥1.20	≤0.60	0.41±0.10	200
1/16	1.5	≥1.60	≤0.80	0.43±0.10	200
3/32	2.5	≥2.40	≤1.20	0.51±0.10	200
1/8	3.0	≥3.20	≤1.60	0.51±0.10	200
3/16	4.5	≥4.80	≤2.40	0.51±0.10	100
1/4	6.0	≥6.40	≤3.20	0.64±0.10	100
3/8	9.0	≥9.50	≤4.80	0.64±0.10	100
1/2	12	≥12.7	≤6.40	0.64±0.10	100
3/4	18	≥19.1	≤9.50	0.76±0.15	100
1	25	≥25.4	≤12.7	0.89±0.15	50
5/4	32	≥32	≤15.9	0.89±0.15	50
3/2	38	≥38	≤19.1	1.00±0.15	50
2	50	≥51	≤25.4	1.15±0.15	25
3	75	≥76	≤38.1	1.27±0.20	25
4	100	≥102	≤50.8	1.40±0.20	25
5	120	≥125	≤63.5	1.40±0.25	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥ 10.4
Ultimate elongation(%)	ASTM D 2671	≥ 200
Tensile strength after heat aged (Mpa)	175℃CX168h	≥ 7.3
Ultimate elongation after heat aged (%)	175℃CX168h	≥ 100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Voltage withstand	UL 224,2500V,60s	No breakdown
Heat shock	UL 224,250℃ x 4h	No cracks,flowing or dripping
Dielectric strength (kV/mm)	ASTM D 149	≥ 15
Volume resistivity (Ω·cm)	ASTM D 876	≥ 10 ¹⁴



RSFR-135G(3X)

Ultra thin wall, very flexible heat shrink tubing



Features

- Ultra thin wall
- Very flexible
- Flame retardant
- Continuous Operating
Temperature:-55°Cto135°C
- Fully shrink temperature:≥120°C
- RoHS compliant
- Meet SAE-AMS-DTL
-23053/5
Class 1 and 3

Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Wall Thickness Nom(mm)	Spool Length M/spool
1/16	1.5	≥1.5	≤0.5	0.45±0.10	200
1/8	3.0	≥3.0	≤1.0	0.55±0.10	200
3/16	4.5	≥4.5	≤1.5	0.60±0.10	100
1/4	6.0	≥6.0	≤2.0	0.65±0.10	100
3/8	9.0	≥9.0	≤3.0	0.75±0.15	100
1/2	12.0	≥12.0	≤4.0	0.75±0.15	100
5/8	15.0	≥15.0	≤5.0	0.80±0.15	100
3/4	18.0	≥18.0	≤6.0	0.85±0.15	100
1	24.0	≥24.0	≤8.0	1.00±0.20	50
1-1/4	30.0	≥30.0	≤10.0	1.15±0.20	50
1-1/2	39.0	≥39.0	≤13.0	1.50±0.20	50
2	50.0	≥50.0	≤16.0	2.50±0.20	25
	60.0	≥60.0	≤20.0	2.60±0.20	25
	70.0	≥70.0	≤23.0	2.60±0.20	25
3	80.0	≥80.0	≤26.0	2.60±0.20	25
	90.0	≥90.0	≤30.0	2.60±0.20	25
4	100	≥100.0	≤33.0	2.60±0.20	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥10.4
Ultimate elongation(%)	ASTM D 2671	≥200
Tensile strength after heat aged (Mpa)	175°CX168h	≥7.3
Ultimate elongation after heat aged (%)	175°CX168h	≥100
Longitudinal change(%)	ASTM D 2671	-5%~+5%
Flammability	ASTM D 2671 C method	VW-1
Voltage withstand	UL 224,2500V,60s	No breakdown
Heat shock	UL 224,250°C × 4h	No cracks,flowing or dripping
Dielectric strength (kV/mm)	ASTM D 149	≥15
Volume resistivity (Ω·cm)	ASTM D 876	≥10 ¹⁴

RSFR-105



RSFR-105

Economical, non self-extinguishing

Halogen free, heat shrink tubing



Features

- Flexible
- Halogen free
- Temperature:-55°C to 105°C
- Shrink temperature:≥105°C
- RoHS and Sony compliant



Single Wall

Dimension

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter Min(mm)	Internal Diameter Max(mm)	Wall Thickness Nom(mm)	M/spool
3/64	0.6	0.9±0.2	0.40	0.22	200
	0.8	1.1±0.2	0.50	0.22	200
1/16	1.0	1.5±0.2	0.65	0.28	200
	1.5	2.0±0.2	0.85	0.32	200
3/32	2.0	2.5±0.2	1.00	0.35	200
	2.5	3.0±0.2	1.30	0.38	200
1/8	3.0	3.5±0.2	1.50	0.40	200
	3.5	4.0±0.2	1.80	0.42	200
	4.0	4.5±0.2	2.00	0.50	200
	4.5	5.0±0.2	2.30	0.55	200
3/16	5.0	5.5±0.2	2.5	0.55	100
	6.0	6.5±0.2	3.0	0.55	100
1/4	7.0	7.5±0.3	3.5	0.60	100
	8.0	8.5±0.3	4.0	0.60	100
3/8	9.0	9.5±0.3	4.5	0.60	100
	10.0	10.5±0.3	5.0	0.60	100
	11	11.5±0.3	5.5	0.60	100
	12	12.5±0.3	6.0	0.65	100
1/2	13	13.5±0.3	6.5	0.65	100
	14	14.5±0.3	7.0	0.70	100
5/8	15	15.5±0.4	7.5	0.70	100
	16	16.5±0.4	8.0	0.70	100
	17	17.5±0.4	8.5	0.80	100
	18	19.0±0.5	9.0	0.80	100
3/4	20	21.0±0.5	10.0	0.80	100
	22	23.0±0.5	11.0	0.90	100
1	25	26.0±0.5	12.5	0.90	50
	28	29.0±0.5	14.0	0.95	50
1-1/4	30	31.5±1.0	15.0	1.00	50
	35	36.5±1.0	17.5	1.00	50
1-1/2	40	41.5±1.0	20.0	1.00	50
	45	46.0±1.0	22.5	1.00	25
	50	≥50	25.0	1.00	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength (MPa)	ASTM D 2671	≥ 10.4
Ultimate elongation (%)	ASTM D 2671	≥ 200
Voltage withstand	2500V,60s	No breakdown
Volume resistivity (Ω·cm)	ASTM D 876	≥ 10 ¹⁴



RSFR-HT
150°C Flame retardant heat shrink tubing



Features

- 2:1 shrink ratio
- Flame retardant
- Good resistance to common fluids and solvents
- UL approved
- Continuous operating temperature:-55°C ~ 150°C
- Fully shrink temperature:≥135°C
- RoHS compliant

Dimensions

Size		As Supplied	After Recovery		Standard Package
Inch	mm	Internal Diameter mm	Internal Diameter mm	Wall Thickness mm	Spool Length M/spool
3/64	1.0	≥1.20	≤0.60	0.41±0.10	200
1/16	1.5	≥1.60	≤0.80	0.43±0.10	200
3/32	2.5	≥2.40	≤1.20	0.51±0.10	200
1/8	3.0	≥3.20	≤1.60	0.51±0.10	200
3/16	4.5	≥4.80	≤2.40	0.51±0.10	100
1/4	6.0	≥6.40	≤3.20	0.64±0.10	100
3/8	9.0	≥9.50	≤4.80	0.64±0.10	100
1/2	12	≥12.7	≤6.40	0.64±0.10	100
3/4	18	≥19.1	≤9.50	0.76±0.15	100
1	25	≥25.4	≤12.7	0.89±0.15	50
5/4	32	≥32	≤15.9	0.89±0.15	50
3/2	38	≥38	≤19.1	1.00±0.15	50
2	50	≥51	≤25.4	1.15±0.15	25
3	75	≥76	≤38.1	1.27±0.20	25
4	100	≥102	≤50.8	1.40±0.20	25
5	120	≥125	≤63.5	1.40±0.25	25

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D2671	≥10.4
Ultimate elongation(%)	ASTM D2671	≥200
Tensile strength after heat aged(Mpa)	180°CX168h	≥7.3
Ultimate elongation after heat aged (%)	180°CX168h	≥100
Corrosion	UI224	Pass
Flammability	ASTM D 2671C method	VW-1
Voltage withstand	2500V, 60s	No breakdown
Heat shock(%)	250°CX4h	No cracks, flowing or dripping
Cold blend	-30°CX1h	No cracks
Dielectric strength (kv/mm)	ASTM D 149	≥15
Volume resistivity (Ω·cm)	ASTM D 876	≥10 ¹⁴
Water absorption(%)	UL 224	≤0.5



PO

Non-shrinkable,Irradiated,Flexible
Flame-retardant,Polyolefin Tubing



Features

- Flexible
- Flame retardant
- Operating temperature:-55℃~+125℃
- RoHS compliant.



Dimensions

Size(AWG)	Internal Diameter(mm)	Wall Thickness(mm)	Standard Package (M/Spool)
AWG18	1.00±0.10	0.40±0.06	200
AWG16	1.30±0.10	0.40±0.06	200
AWG14	1.65±0.10	0.40±0.06	200
AWG12	2.10±0.15	0.40±0.06	200
AWG10	2.60±0.15	0.50±0.08	200
AWG8	3.30±0.15	0.50±0.08	200
AWG6	4.10±0.20	0.50±0.08	100
AWG4	5.20±0.20	0.50±0.08	100
AWG2	6.50±0.20	0.50±0.08	100
AWG0	8.30±0.30	0.50±0.08	100
3/8 "	9.50±0.40	0.50±0.08	100
7/16 "	11.10±0.40	0.50±0.08	100
1/ 2 "	12.70±0.40	0.50±0.08	100

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 2671	≥10.4
Ultimate elongation(%)	ASTM D 2671	≥200
Water absorption (%)	ASTM D 570	≤0.5
Dielectric strength (kv/mm)	ASTM D 149	≥15
Volume resistivity (Ω·cm)	ASTM D 876	≥10 ¹⁴

WMPG



WMPG
Heat Shrink Busbar Tube



Features

- Manufactured from cross-linked polyolefin
- Used to offer insulation protection for busbar in switchgear and substation
- Protects against short circuit and electrical leakage cause by small animals
- Reduces busbar clearance requirements
- RoHS compliant
- Shrink temperature: start at 70°C, and fully recovered at 125°C
- Color: yellow, red, green, blue, black



Single Wall

Dimensions

1kV WMPG Series

Product No.	Busbar Width (square)/mm	As Supplied/mm		After Recovered/mm		Standard Package (m/roll)
		ID (Min)	Wall Thickness	ID (Max)	Wall Thickness	
1kV WMPG 30	30	31.5±1.0	0.50±0.15	≤15	0.95±0.15	50
1kV WMPG 35	35	36.5±1.5	0.50±0.15	≤18	1.00±0.15	50
1kV WMPG 40	40	41.5±1.5	0.55±0.15	≤20	1.00±0.15	25
1kV WMPG 45	45	41.5±1.5	0.55±0.15	≤23	1.00±0.15	25
1kV WMPG 50	50	51.0±2.0	0.55±0.15	≤25	1.00±0.15	25
1kV WMPG 60	60	60.0±3.0	0.60±0.20	≤30	1.30±0.20	25
1kV WMPG 65*	65	65.0±3.0	0.60±0.20	≤33	1.30±0.20	25
1kV WMPG 70	70	70.0±3.0	0.65±0.20	≤35	1.30±0.20	25
1kV WMPG 75*	75	75.0±3.0	0.65±0.20	≤38	1.30±0.20	25
1kV WMPG 80	80/100	80.0±3.0	0.65±0.20	≤40	1.46±0.20	25
1kV WMPG 85*	80/100	85.0±3.0	0.65±0.20	≤43	1.46±0.20	25
1kV WMPG 90	100	90.0±4.0	0.65±0.20	≤45	1.46±0.20	25
1kV WMPG 100	100/120	100.0±4.0	0.65±0.20	≤50	1.46±0.20	25
1kV WMPG 120	150	120.0±4.0	0.65±0.20	≤60	1.46±0.20	25
1kV WMPG 150	180	150.0±4.0	0.65±0.20	≤75	1.46±0.20	25
1kV WMPG 180	MAX	180.0±4.0	0.65±0.20	≤90	1.46±0.20	25
1kV WMPG 210*	MAX	210.0±4.0	0.65±0.20	≤105	1.46±0.20	25
1kV WMPG 230*	MAX	230.0±4.0	0.65±0.20	≤115	1.46±0.20	25
1kV WMPG 250*	MAX	250.0±5.0	0.65±0.20	≤125	1.46±0.20	25
1kV WMPG 300*	MAX	300.0±5.0	0.65±0.20	≤150	1.46±0.20	25

10kV WMPG Series

Product No.	Busbar Width (square/circular) /mm	As Supplied/mm		After Recovered/mm		Standard Package (m/roll)
		ID (Min)	Wall Thickness	ID (Max)	Wall Thickness	
10kV WMPG 15/8	15/12	15.0±0.8	1.20±0.30	≤8	2.10±0.30	25
10kV WMPG 20/10	20/15	20.0±0.8	1.20±0.30	≤10	2.10±0.30	25
10kV WMPG 25/12	25/18	25.0±0.8	1.20±0.30	≤12.5	2.10±0.30	25
10kV WMPG 30/15	32/20	30.0±0.8	1.20±0.30	≤15	2.10±0.30	25
10kV WMPG 40/20	40/30	40.0±1.0	1.20±0.30	≤20	2.30±0.30	25
10kV WMPG 50/25	50/35	50.0±3.0	1.20±0.30	≤25	2.30±0.30	25
10kV WMPG 60/30	60/45	60.0±3.0	1.20±0.30	≤30	2.30±0.30	25
10kV WMPG 65/33*	65/45	65.0±3.0	1.20±0.30	≤33	2.30±0.30	25
10kV WMPG 70/35	70/50	70.0±3.0	1.20±0.30	≤35	2.30±0.30	25
10kV WMPG 75/38*	75/50	75.0±3.0	1.20±0.30	≤38	2.30±0.30	25
10kV WMPG 80/40	80/55	80.0±3.0	1.20±0.30	≤40	2.30±0.30	25
10kV WMPG 85/43*	80/65	85.0±3.0	1.20±0.30	≤43	2.40±0.30	25
10kV WMPG 100/50	100/75	100.0±4.0	1.20±0.30	≤50	2.40±0.30	25
10kV WMPG 120/60	120/85	120.0±4.0	1.20±0.30	≤60	2.40±0.30	25
10kV WMPG 150/75	150/105	150.0±4.0	1.20±0.30	≤75	2.40±0.30	25
10kV WMPG 180/90	180/120	180.0±5.0	1.20±0.30	≤90	2.40±0.30	25
10kV WMPG 210/105*	210/140	210.0±5.0	1.20±0.40	≤105	2.40±0.30	20
10kV WMPG 230/115*	230/150	230.0±5.0	1.20±0.40	≤115	2.40±0.30	20
10kV WMPG 250/125*	250/180	250.0±5.0	1.20±0.40	≤125	2.40±0.30	20
10kV WMPG 300/150*	300/210	300.0±5.0	1.20±0.40	≤150	2.40±0.30	15

WMPG

Single Wall

20kV WMPG Series

Product No.	Busbar Width (square/circular) /mm	As Supplied/mm		After Recovered/mm		Standard Package (m/roll)
		ID (Min)	Wall Thickness	ID (Max)	Wall Thickness	
20kV WMPG 15/8	15/12	15.0±0.8	1.30±0.30	≤8	2.50±0.20	25
20kV WMPG 20/10	20/15	20.0±0.8	1.30±0.30	≤10	2.50±0.20	25
20kV WMPG 25/13	25/18	25.0±0.8	1.30±0.30	≤13	2.50±0.20	25
20kV WMPG 30/15	32/20	30.0±0.8	1.30±0.30	≤15	2.50±0.20	25
20kV WMPG 40/20	40/30	40.0±1.0	1.40±0.40	≤20	2.80±0.30	25
20kV WMPG 50/25	50/35	50.0±2.0	1.40±0.40	≤25	2.80±0.30	25
20kV WMPG 60/30	60/45	60.0±3.0	1.40±0.40	≤30	2.80±0.30	25
20kV WMPG 65/33*	65/45	65.0±3.0	1.40±0.40	≤33	2.80±0.30	25
20kV WMPG 70/35	70/50	70.0±3.0	1.40±0.40	≤35	2.80±0.30	25
20kV WMPG 75/38	75/50	75.0±3.0	1.40±0.40	≤38	2.80±0.30	25
20kV WMPG 80/40	80/55	80.0±3.0	1.40±0.40	≤40	2.80±0.30	25
20kV WMPG 85/43*	80/65	85.0±3.0	1.40±0.40	≤43	2.80±0.30	25
20kV WMPG 100/50	100/75	100.0±4.0	1.40±0.40	≤50	2.80±0.30	25
20kV WMPG 120/60	120/85	120.0±4.0	1.40±0.40	≤60	2.80±0.30	25
20kV WMPG 150/75	150/105	150.0±4.0	1.40±0.40	≤75	2.80±0.30	25
20kV WMPG 180/90	180/120	180.0±5.0	1.40±0.40	≤90	2.80±0.30	25
20kV WMPG 210/105*	210/40	210.0±5.0	1.40±0.40	≤105	2.80±0.30	20
20kV WMPG 230/115*	230/150	230.0±5.0	1.40±0.40	≤115	2.80±0.30	20

35kV WMPG Series

Product No.	Busbar Width (square)/mm	As Supplied/mm		After Recovered/mm		Standard Package (m/roll)
		ID (Min)	Wall Thickness	ID (Max)	Wall Thickness	
35kV WMPG 30/15	30	30.0±1.0	1.90±0.50	≤15	4.00±0.30	15
35kV WMPG 35/18	30/40	35.0±1.0	1.90±0.50	≤18	4.00±0.30	15
35kV WMPG 40/20	40	40.0±1.0	1.90±0.50	≤20	4.00±0.30	15
35kV WMPG 50/25	50	50.0±2.0	1.90±0.50	≤25	4.00±0.30	15
35kV WMPG 60/30	60	60.0±3.0	1.90±0.50	≤30	4.00±0.30	15
35kV WMPG 65/33*	60/70	65.0±3.0	1.90±0.50	≤33	4.00±0.30	15
35kV WMPG 70/35	70	70.0±3.0	1.90±0.50	≤35	4.00±0.30	15
35kV WMPG 75/38*	70/80	75.0±3.0	1.90±0.50	≤38	4.00±0.30	15
35kV WMPG 80/40	80/100	80.0±4.0	1.90±0.50	≤40	4.00±0.30	15
35kV WMPG 100/50	100/120	100.0±4.0	1.90±0.50	≤50	4.00±0.30	15
35kV WMPG 120/60	150	120.0±4.0	1.90±0.50	≤60	4.00±0.30	15
35kV WMPG 150/75	180	150.0±4.0	1.90±0.50	≤75	4.00±0.30	15
35kV WMPG 180/90*	MAX.	180.0±5.0	1.90±0.50	≤90	4.00±0.30	15
35kV WMPG 210/105*	MAX.	210.0±5.0	1.90±0.50	≤105	4.00±0.30	15
35kV WMPG 230/115*	MAX.	230.0±5.0	1.90±0.50	≤115	4.00±0.30	15
35kV WMPG 250/125*	MAX.	250.0±5.0	1.90±0.50	≤125	4.00±0.30	15
35kV WMPG 300/150*	MAX.	300.0±5.0	1.90±0.50	≤150	4.00±0.30	15

Note: Size with * are not standard stock items.

Technical Data

Property	Test Method	Standard Value
Tensile Strength	GB/T 1040	≥8MPa
Elongation at Break	GB/T 1040	≥300%
Tensile Strength after Aging	GB/T 1040, GB/T 7141	≥6.4MPa (130°C,168 hrs)
Elongation at Break after Aging	GB/T 1040, GB/T 7141	≥100% (130°C,168 hrs)
Hardness (Shore A)	ISO 868	≤90
Dielectric Strength	IEC 60243	≥25kV/mm
Volume Resistivity	IEC 60093	≥1×10 ¹⁴ Ω·cm
Dielectric Constant	IEC 60250	≤3.0
Longitudinal Shrinkage	ASTM-D-2671	≤10%
Eccentricity	ASTM-D-2671	≤30%(10kV); ≤50%(35kV)
Water Absorption	ISO 62	≤0.5%
Flammability (Oxygen Index)	ISO 4589	≥28





RSFRNH-BTM

Medium Voltage Cross-linked Polyolefin Bus-Bar Tubing

RSFRNH-BTM is made from specially formulated radiation cross-linked halogen free compounds. It can provide high resistance to tracking and arcing, as well as to enhance the insulation properties of bus-bar in switchgear and substation. Suitable for application in insulating medium voltage bus bars, cable termination and joints from 1KV to 24KV.



Features

- Flame Retardant
- Reduces bus bar clearance requirements
- Protect against accidental flashover
- Anti-track
- Halogen free
- Tested to IEC60684 standards for medium voltage switch-gear applications to above 20KV
- Continuous Operating Temperature:
-40 °C to 110°C, can be used in 175°C
- Shrink Temperature:120°C

Technical Data

Physical

Property	Test Method	Standard Performance	Typical Performance
Tensile strength	IEC 60684	≥8Mpa	10.5 Mpa
Elongation	IEC 60684	≥400%	550%
Heat Aging tensile strength	150°C×168h	≥5Mpa	9.5 Mpa
Heat Aging elongation	150°C×168h	≥200%	450%
Heat shock	225°C×4h	no cracking or flowing	no cracking or flowing
Flammability	IEC 60684	Passed	Passed
Low temperature Flexibility	-40°C×4h	no cracking	no cracking

Electrical

Property	Test Method	Standard Performance	Typical Performance
Dielectric Strength	IEC 60684	≥20KV/mm	23kv/mm
Volume Resistivity	IEC 60684	≥1×10 ¹³ Ω·cm	2×10 ¹⁴ Ω·cm
Tracking(2.5kv,60min)	IEC 60684	no cracking	no cracking

Selection Table

Normal size (mm)	As supplied/mm	After recovered/mm		Standard length m/Roll
	Inside diameter (Min)	Inside diameter(Max)	Wall thickness (Min)	
Φ20/6	20	6	2.2±0.3	25
Φ28/9	28	9	2.6±0.3	25
Φ33/10	33	10	2.8±0.3	25
Φ40/12	40	12	2.8±0.3	25
Φ45/14	45	14	3.0±0.3	25
Φ55/16	55	16	3.0±0.3	25
Φ65/19	65	19	3.0±0.3	25
Φ75/22	75	22	3.0±0.3	25
Φ85/25	85	25	3.2±0.3	25
Φ95/30	95	30	3.2±0.3	25
Φ115/34	115	34	3.3±0.3	25
Φ130/36	130	36	3.3±0.3	25
Φ160/50	160	50	3.3±0.3	25
Φ180/56	180	56	3.3±0.3	25

WRS LD

Single Wall



WRS LD
Heat Shrink Neoprene Tube



Features

- Made of cross linked chlorinated polyolefin
- Resistant to most fluids and solvents, including aviation and ground-vehicle fuels, lubricating oil, and hydraulic fluids
- Good flexibility at low temperature
- Resistant to abrasion and physical abuse while providing flexibility and strain relief
- Performance meets requirements of SAE-AMS-DTL-23053/1.
- Widely used for insulation, strain relief, and abrasion protection on cable harnesses and wire bundles in the military and aerospace industries. Especially suitable for applications requiring exposure to fluids and solvents at elevated temperatures.
- RoHS compliant
- Operation temperature: -45°C to 105°C
- Shrink temperature: start at 90°C, and fully recovered at 130°C
- Standard color: Black.

Dimensions

Product No.	As Supplied/mm	After Recovered/ mm	
	Inner diamter	Inner diamter	Wall thickness **
WRS LD-3.2/1.5	≥3.2	≤1.5	0.7±0.2
WRS LD-4.8/2.5	≥4.8	≤2.5	0.8±0.2
WRS LD-6.4/3.4	≥6.4	≤3.5	0.9±0.2
WRS LD-9.5/5.4	≥9.5	≤5.4	1.0±0.2
WRS LD-12.7/7.1	≥12.7	≤7.1	1.2±0.2
WRS LD-15.8/8.7	≥15.8	≤8.7	1.3±0.3
WRS LD-19.1/10.5	≥19.1	≤10.5	1.4±0.3
WRS LD-22.2/12.5	≥22.2	≤12.5	1.7±0.3
WRS LD-25.4/14.5	≥25.4	≤14.5	1.8±0.3
WRS LD-31.8/18.0	≥31.8	≤18.0	2.2±0.3
WRS LD-38.1/21.5	≥38.1	≤21.5	2.4±0.3

**Wall thickness will be less when shrinkage is restricted.

Technical Data

Property	Test Method	Typical Performance
Tensile strength(MPa)	ASTM D 412	≥10.3
Elongation at Break (%)	ASTM D 412	≥225%
Tensile stress at 200% elongation (MPa)	ASTM D 412	≤10.3
Tensile Strength After Aging (120°C,168 hrs) (%)	SAE-AMS-DTL-23053	≥8.3
Elongation at Break after Aging (120°C,168 hrs) (%)	SAE-AMS-DTL-23053	≥175%
Dielectric Strength (kV/mm)	ASTM D 2671	≥11.8
Volume resistivity (Ω·cm)	ASTM D 876	≥1×10 ¹¹
Flammability(Self extinguishing 15 seconds; 3 inches)	ASTM D2671, Procedure A	Pass
Fungus resistance	ASTM G 21	No growth
Low temperature flexibility	-70°C,4 hrs	No cracking

WRSGX



WRSGX

Optical Fiber Fusion Splice Protection Sleeves

WRSGX is designed to protect the bare fiber portion of a fusion splice, which provides mechanical and environmental protection for fusion splices of single fiber.

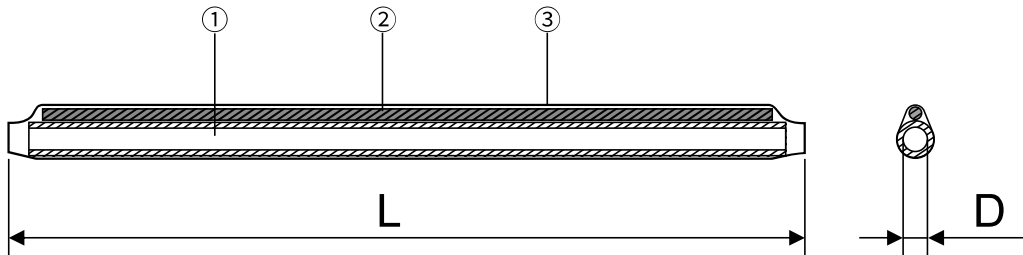
Features

- Excellent reinforcement of fusion splicing portion
- Reliable protection under any environmental conditions
- Fits into most splice holders
- Attenuation is almost zero, the signal transfer is more stable and faster
- Quick shrink-down time & easy installation, reducing damage risk to optical fiber.

Single Wall

Components:

- clear outer heat-shrink tube
- low temperature hot-melt adhesive sleeve to encapsulate the splice
- stainless steel rod for single fiber splices to ensure proper alignment and rigidity



- ① Hot-melt adhesive
- ② Stainless steel rod
- ③ Heat-shrinkable tube

Dimensions

Type	Stainless steel		Hot-melt adhesive sleeve	After recovery	Total length
	O.D	Length	I.D. (D)	O.D	L
Small size	1.0	55	0.5	2.0	60
	1.0	50	0.5	2.0	55
	1.0	45	0.5	2.0	50
	1.0	40	0.5	2.0	45
	1.0	35	0.5	2.0	40
Normal size	1.2	55	1.3	2.5	60
	1.2	50	1.3	2.5	55
	1.2	45	1.3	2.5	50
	1.2	40	1.3	2.5	45
	1.2	35	1.3	2.5	40
Large size	1.5	55	1.5	3.0	60
	1.5	50	1.5	3.0	55
	1.5	45	1.5	3.0	50
	1.5	40	1.5	3.0	45
	1.5	35	1.5	3.0	40