



TUBE

LS Heat-shrinkable Tubing





THE WORLD BEST CABLE SOLUTION LEADER

LS Cable & System supplies various cables and materials used for power grids and communication networks around the world across all industries providing its top class technology and excellent quality. The company has also developed state of the art products, such as superconductors, HVDC and submarine cables that will lead the future energy industry.

LS spun off from LG in 2003 as a group specializing in electronics, electrical systems, energy and materials.



LS Cable & System

Transmission Cable
Distribution Cable
Submarine Cable
Telecommunication Cable
Industrial Cable
Industrial Material

LSELECTRIC

Electric &
Automatic Equipments

LS-Nikko Copper

Copper Refinement

LS Mtron

Mechanical &
Electronic Parts

yesco

LNG

E1

LPG

GAON

Power &
Communication
Cables

LS TUBE

LS Tube, a division of LS Cable & System, covers a complete range of heat-shrinkable tubing products, all of which are developed to meet industry requirements, including AS23053, UL and CSA. Our cross link technology assures the reliable quality of our products and provides lot-to-lot consistency. Our commitment to develop solutions to address our customers' needs and challenges keep our heat shrink technology on the cutting edge and our know-how in the field more valuable.

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How to read the product serial number



Shrink Ratio

- 1 indicates 50% (2:1)
- 2 indicates 30% (3:2)
- 3 indicates 65% (3:1)
- 4 indicates 75% (4:1)

Voltage Grade

- 3 indicates 300V
- 6 indicates 600V

*Except for 6 in 1625GT,
which indicates 300V*

Temperature Grade

- 05 indicates 105°C
- 25 indicates 125°C
- 35 indicates 135°C
- 50 indicates 150°C
- 75 indicates 175°C
- 90 indicates 90°C

Special Feature

- T for Thin-wall
- W for Waterproof with an adhesive
- N for Non flame retardant
- S for Semi-rigid
- F for Flexible
- HF for Halogen free
- G for Non toxic

How to read the visual cues



This visual cue indicates that the product has such shrink ratio as shown.



This visual cue indicates that the product is flame retardant.



This visual cue indicates that the product has a dual wall (adhesive applied).



This visual cue indicates that the product meets AS Specifications.

How to order our products

To order our products please contact our sales team

12F, LS Tower, 127, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, 14119, Korea
Tel. 82-2-2189-9239 Fax. 82-2-2189-8991
E-mail. ohit@lscns.com

When you order our products

please specify the following information to our sales representative :

Product serial number / Wall thickness x Size of diameter / Color of the product,
e.g. GSHS-4635WT / 0.25mm x 3.5mm / Black

Quick Selection Chart

Type	Product	Shrink Ratio	Minimum Shrink Temperature (°C)	Operating Temperature (°C)	Voltage (V)	Flame Retardant	Adhesive	UL File No.	CSA File No.	AS Spec.	Standard Color	Special Color																																																																																																																																																																																																																																																																																																																																																																															
Single Wall	GSHS-1625G	2:1	90	-30 ~ 125	600			E84393																																																																																																																																																																																																																																																																																																																																																																																			



For clear products, UL & CSA recognitions are not available (including flame retardant).
Operating temperature range is based on crosslinked outer wall.

GSHS-1625G

Non-toxic Flexible Polyolefin Tubing



Special Features

- Low smoke and acid gas emission.
- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.

Key Specifications

- Operating temperature range : -30°C~ 125°C(except clear products)
- Flammability : UL VW-1, -F- mark(except clear products)
- Minimum shrink temperature : 90°C• Shrink ratio : 50% or more in radial direction
- Standards
UL 224(File No. E84393 : VW-1, 600V, 125°C, except clear products)

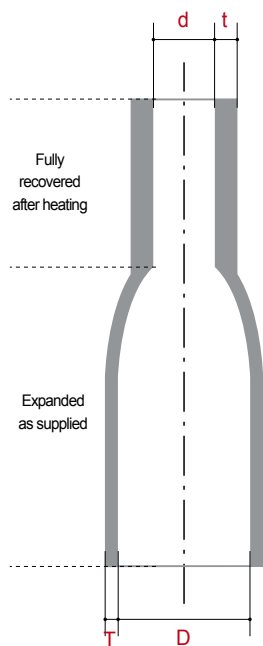
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kg/mm ²	ASTM D 412 UL 224
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 412 UL 224 158°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250 °C×4hrs	UL 224
	Low temperature flexibility		No crack @ -30°C×1hrs	ASTM D 2671
Electrical	Secant modulus		Max. 173MPa	UL 224
	Dielectric voltage withstand	Unaged	Min. 2,500V/1min.	UL 224
		Aged		158 °C/168hrs
	Volume resistivity		Min. 1×10 ¹⁰ Ω - cm	ASTM D 257
Chemical	Copper corrosion		No corrosion	UL 224
	Flammability		Pass	UL 224

Available Colors



Dimension

- Size range : 1 ~ 60 mm (3/64 ~ 5 inch), special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
1.0	1.0	0.50	0.20	0.36	200
1.5	1.5	0.75	0.20	0.36	200
2.0	2.0	1.00	0.20	0.44	200
2.5	2.5	1.25	0.25	0.44	200
3.0	3.0	1.50	0.25	0.44	200
3.5	3.5	1.75	0.25	0.44	200
4.0	4.0	2.00	0.25	0.44	200
5.0	5.0	2.50	0.25	0.56	100
5.5	5.5	2.75	0.25	0.56	100
6.0	6.0	3.00	0.25	0.56	100
7.0	7.0	3.50	0.25	0.56	100
8.0	8.0	4.00	0.25	0.56	50
9.0	9.0	4.50	0.25	0.56	75
10.0	10.0	5.00	0.25	0.56	75
11.0	11.0	5.50	0.25	0.56	75
12.0	12.0	6.00	0.25	0.56	75
13.0	13.0	6.50	0.30	0.69	75
14.0	14.0	7.00	0.30	0.69	50
15.0	15.0	7.50	0.30	0.69	50
16.0	16.0	8.00	0.30	0.69	50
18.0	18.0	9.00	0.35	0.76	50
20.0	20.0	10.00	0.35	0.76	50
22.0	22.0	11.00	0.40	0.76	50
24.0	24.0	12.00	0.40	0.76	50
25.0	25.0	12.50	0.40	0.86	50
26.0	26.0	13.00	0.40	0.86	50
28.0	28.0	14.00	0.40	0.86	50
30.0	30.0	15.00	0.40	0.86	50
32.0	32.0	16.00	0.40	0.86	50
38.0	38.0	19.00	0.43	0.86	31
50.0	50.0	25.00	0.50	0.97	31
60.0	60.0	30.00	0.55	1.07	31
3/64	1.2	0.58	0.20	0.33	200
1/16	1.6	0.79	0.20	0.36	200
3/32	2.4	1.17	0.25	0.43	200
1/8	3.2	1.57	0.25	0.43	200
3/16	4.8	2.36	0.25	0.43	100
1/4	6.4	3.18	0.30	0.56	100
3/8	9.6	4.75	0.30	0.56	100
1/2	12.7	6.35	0.30	0.56	50
3/4	19.1	9.53	0.35	0.69	50
1	25.4	12.70	0.40	0.76	50
1-1/2	38.1	19.00	0.43	0.86	50
2	50.8	25.40	0.50	0.97	31
2-1/2	63.5	31.75	0.55	1.17	31
3	76.2	38.10	0.60	1.17	31
4	101.6	50.80	0.70	1.17	31
5	127.0	63.50	0.70	1.17	31

GSHS-1625G-HF

Halogen Free, Flexible Polyolefin Tubing



Special Features

- The shrinking temperature is very low and it can shrink very quickly.
- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent fire-resistance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wire.

Key Specifications

- Operating temperature range : -30°C to 125°C
- Flammability : UL VW-1
- Minimum shrink temperature : 90°C
- Shrink ratio : 50% or more in radial direction.

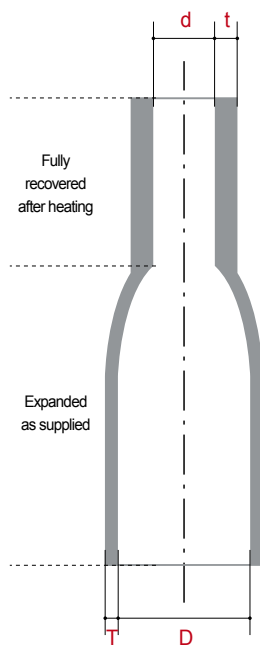
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 412 UL 224
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 412 UL 224 153°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250 °C x 4hrs	UL 224
	Low temperature flexibility		No crack @ -30°C x 1hrs	ASTM D 2671
	Secant modulus		Max. 173MPa	UL 224
	Dielectric Voltage withstand	Unaged	Min. 2500V/1min.	UL 224
		Aged		158 °C/168hrs
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 257
Chemical	Copper corrosion		No corrosion	UL 224 158 °C/168hrs
	Copper stability Elongation		No sign of degradation Min. 100%	
	Flammability (VW-1)		Pass	UL 224

Available Colors



Dimension

- Size range : 1 ~ 10mm, special size are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
1.0	1.0	0.50	0.20	0.36	200
1.5	1.5	0.75	0.20	0.36	200
2.0	2.0	1.00	0.20	0.44	200
2.5	2.5	1.25	0.25	0.44	200
3.0	3.0	1.50	0.25	0.44	200
3.5	3.5	1.75	0.25	0.44	200
4.0	4.0	2.00	0.25	0.44	200
5.0	5.0	2.50	0.25	0.56	100
5.5	5.5	2.75	0.25	0.56	100
6.0	6.0	3.00	0.25	0.56	100
7.0	7.0	3.50	0.25	0.56	100
8.0	8.0	4.00	0.25	0.56	100
9.0	9.0	4.50	0.25	0.56	100
10.0	10.0	5.00	0.25	0.56	100

GSHS-1625GT-HF

Halogen Free, Flexible, Thin-wall Polyolefin Tubing



Special Features

- Low smoke and acid gas emission.
- Its particularly rapid installation reduces the possibility of damage to sensitive components.
- It has excellent flame retardance, flexibility, and insulation.
- Halogenfree

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.

Key Specifications

- Operating temperature range : -30°C ~ 125°C
- Flammability : UL VW-1
- Minimum shrink temperature : 80°C
- Shrink ratio : 50% or more in radial direction

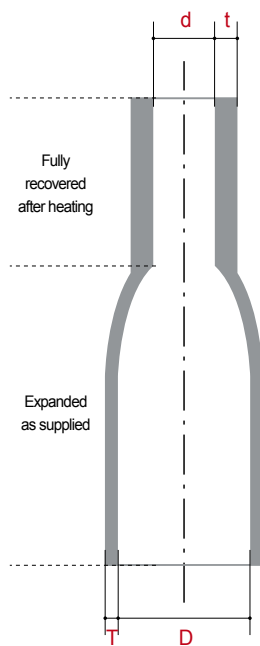
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 412 UL 224
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 412 UL 224 153°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250 °C×4hrs	UL 224
	Low temperature flexibility		No crack @ -30°C×1hrs	ASTM D 2671
	Secant modulus		Max. 173MPa	UL 224
	Dielectric Voltage withstand	Unaged	Min. 2500V/1min.	UL 224
		Aged		158°C/168hrs
	Volume resistivity		Min. 1×10 ¹⁰ Ω - cm	ASTM D 257
Chemical	Copper corrosion		No corrosion	UL 224 158°C/168hrs
	Copper stability Elongation		No sign of degradation Min. 100%	
	Flammability (VW-1)		Pass	UL 224
	Halogen content		Br < 800ppm Cl < 800ppm	

Available Colors



Dimension

- Size range : 1 ~ 10mm(3/64 ~ 1/4 inch), special size are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
Metric System (mm)	1.0	1.0	0.50	0.10	100
	1.5	1.5	0.75	0.10	100
	2.0	2.0	1.00	0.10	200
	2.5	2.5	1.25	0.15	200
	3.0	3.0	1.50	0.15	200
	3.5	3.5	1.75	0.15	200
	4.0	4.0	2.00	0.15	200
	5.0	5.0	2.50	0.15	100
	6.0	6.0	3.00	0.15	100
	7.0	7.0	3.50	0.15	100
U.S. Customary System (Inch)	8.0	8.0	4.00	0.15	100
	9.0	9.0	4.50	0.16	100
	10.0	10.0	5.00	0.16	100
	3/64	1.2	0.58	0.10	200
	1/16	1.6	0.79	0.10	200
	3/32	2.4	1.17	0.15	200
	1/8	3.2	1.57	0.15	200
	3/16	4.8	2.36	0.15	100
	1/4	6.4	3.18	0.15	200

GSHS-1635F

Flexible Polyolefin Tubing



Special Features

- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.

Key Specifications

- Operating temperature range : -55°C ~ 135°C
- Flammability : UL VW-1, -F- mark (except clear products)
- Minimum shrink temperature : 90°C
- Shrink ratio : 50% or more in radial direction
- Standards
 - UL 224 (File No. E84393 : VW-1, 600V, 125°C, except clear products)
 - AS23053/5 : 600V, 135°C, Class 1 or Class 3, Class 2 (clear products only)

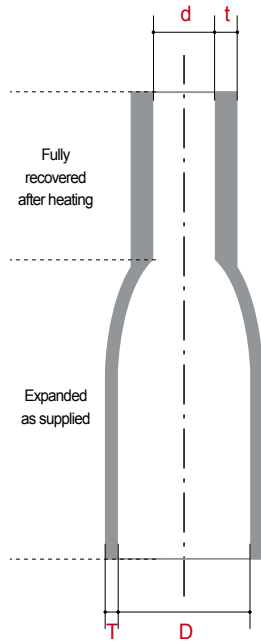
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 638
		Elongation	Min. 100%	AS23053 175°C/168hrs
	Heat shock		Pass @250 °C×4hrs	AS23053
	Low temperature flexibility		No crack @ -55°C×4hrs	AS23053
	Secant modulus		Max. 173MPa	ASTM D 882
Electrical	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
	Volume resistivity		Min. 1×10 ¹⁰ Ω - cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	175°C/16hrs
	Flammability		Pass	UL 224
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 1 ~ 60 mm (3/64 ~ 5 inch), special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
1.0	1.0	0.50	0.20	0.36	200
1.5	1.5	0.75	0.20	0.36	200
2.0	2.0	1.00	0.20	0.44	200
2.5	2.5	1.25	0.25	0.44	200
3.0	3.0	1.50	0.25	0.44	200
3.5	3.5	1.75	0.25	0.44	200
4.0	4.0	2.00	0.25	0.44	200
5.0	5.0	2.50	0.25	0.56	100
5.5	5.5	2.75	0.25	0.56	100
6.0	6.0	3.00	0.25	0.56	100
7.0	7.0	3.50	0.25	0.56	100
8.0	8.0	4.00	0.25	0.56	100
9.0	9.0	4.50	0.25	0.56	100
10.0	10.0	5.00	0.25	0.56	100
11.0	11.0	5.50	0.25	0.56	100
12.0	12.0	6.00	0.25	0.56	100
13.0	13.0	6.50	0.30	0.69	50
14.0	14.0	7.00	0.30	0.69	50
15.0	15.0	7.50	0.30	0.69	50
16.0	16.0	8.00	0.30	0.69	50
18.0	18.0	9.00	0.35	0.76	50
20.0	20.0	10.00	0.35	0.76	50
22.0	22.0	11.00	0.40	0.76	50
24.0	24.0	12.00	0.40	0.76	50
25.0	25.0	12.50	0.40	0.86	50
26.0	26.0	13.00	0.40	0.86	50
28.0	28.0	14.00	0.40	0.86	50
30.0	30.0	15.00	0.40	0.86	50
32.0	32.0	16.00	0.40	0.86	50
38.0	38.0	19.00	0.43	0.86	31
50.0	50.0	25.00	0.50	0.97	31
60.0	60.0	30.00	0.55	1.07	31
3/64	1.2	0.58	0.20	0.33	200
1/16	1.6	0.79	0.20	0.36	200
3/32	2.4	1.17	0.25	0.43	200
1/8	3.2	1.57	0.25	0.43	200
3/16	4.8	2.36	0.25	0.43	100
1/4	6.4	3.18	0.30	0.56	100
3/8	9.6	4.75	0.30	0.56	100
1/2	12.7	6.35	0.30	0.56	50
3/4	19.1	9.53	0.35	0.69	50
1	25.4	12.70	0.40	0.76	50
1-1/2	38.1	19.00	0.43	0.86	50
2	50.8	25.40	0.50	0.97	31
2-1/2	63.5	31.75	0.55	1.17	31
3	76.2	38.10	0.60	1.17	31
4	101.6	50.80	0.70	1.17	31
5	127.0	63.50	0.70	1.17	31

GSHS-1635F YL/GN

Flexible Polyolefin Tubing



Special Features

- It is specially color-coded: yellow with green stripes.
- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires especially where the international electrical ground designation is intended.

Key Specifications

- Operating temperature range : -55°C ~ 135°C
- Flammability : UL VW-1, -F- mark (except clear products)
- Minimum shrink temperature : 90°C
- Shrink ratio : 50% or more in radial direction
- Standards
 - UL 224 (File No. E84393 : VW-1, 600V, 125°C)
 - UL Approved product name : GSHS-1635F
 - AS23053/5 : 600V, 135°C, Class 1 or Class 3

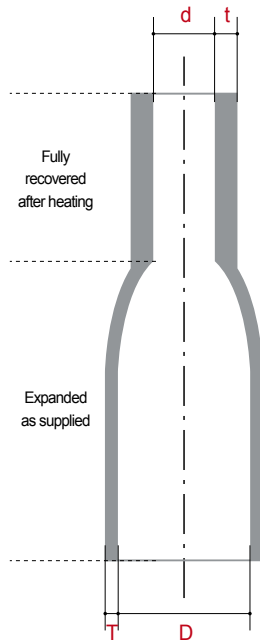
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 638
		Elongation	Min. 100%	AS23053 175°C/168hrs
	Heat shock		Pass @250 °C×4hrs	AS23053
	Low temperature flexibility		No crack @ -55°C×4hrs	AS3053
Electrical	Secant modulus		Max. 173MPa	ASTM D 882
	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
	Volume resistivity		Min. 1×10 ¹⁰ Ω·cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	175°C/16hrs
	Flammability		Pass	UL 224
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

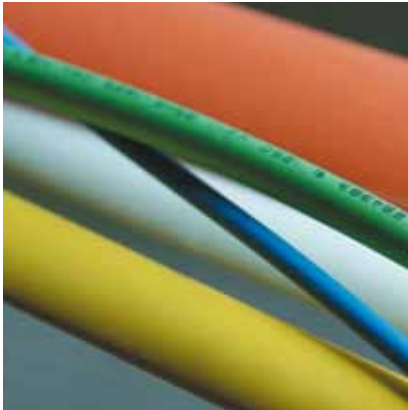
- Size range : 1 ~ 38 mm (3/64 ~ 1-1/2 inch), special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
1.0	1.0	0.50	0.20	0.36	200
1.5	1.5	0.75	0.20	0.36	200
2.0	2.0	1.00	0.20	0.44	200
2.5	2.5	1.25	0.25	0.44	200
3.0	3.0	1.50	0.25	0.44	200
3.5	3.5	1.75	0.25	0.44	200
4.0	4.0	2.00	0.25	0.44	200
5.0	5.0	2.50	0.25	0.56	100
5.5	5.5	2.75	0.25	0.56	100
6.0	6.0	3.00	0.25	0.56	100
7.0	7.0	3.50	0.25	0.56	100
8.0	8.0	4.00	0.25	0.56	100
9.0	9.0	4.50	0.25	0.56	100
10.0	10.0	5.00	0.25	0.56	100
11.0	11.0	5.50	0.25	0.56	100
12.0	12.0	6.00	0.25	0.56	100
13.0	13.0	6.50	0.30	0.69	50
14.0	14.0	7.00	0.30	0.69	50
15.0	15.0	7.50	0.30	0.69	50
16.0	16.0	8.00	0.30	0.69	50
18.0	18.0	9.00	0.35	0.76	50
20.0	20.0	10.00	0.35	0.76	50
22.0	22.0	11.00	0.40	0.76	50
24.0	24.0	12.00	0.40	0.76	50
25.0	25.0	12.50	0.40	0.86	50
26.0	26.0	13.00	0.40	0.86	50
28.0	28.0	14.00	0.40	0.86	50
30.0	30.0	15.00	0.40	0.86	50
32.0	32.0	16.00	0.40	0.86	50
38.0	38.0	19.00	0.43	0.86	31
3/64	1.2	0.58	0.20	0.33	200
1/16	1.6	0.79	0.20	0.36	200
3/32	2.4	1.17	0.25	0.43	200
1/8	3.2	1.57	0.25	0.43	200
3/16	4.8	2.36	0.25	0.43	100
1/4	6.4	3.18	0.30	0.56	100
3/8	9.6	4.75	0.30	0.56	100
1/2	12.7	6.35	0.30	0.56	50
3/4	19.1	9.53	0.35	0.69	50
1	25.4	12.70	0.40	0.76	50
1-1/2	38.1	19.00	0.43	0.86	50

GSHS-1635S

Semi-rigid Polyolefin Tubing



Special Features

- Its tough abrasion resistance is suitable for delicate components in the mechanical environment.
- It has excellent flame retardance and insulation.

Application

- Suitable for electric insulation, strain relief, bonding, and termination of wire splices and soldered/crimped connections.

Key Specifications

- Operating temperature range : -55°C ~ 135°C
- Flammability : ASTM D 2671 Procedure B(except clear products)
- Minimum shrink temperature : 130°C
- Shrink ratio : 50% or more in radial direction
- Standards
AS23053/6 : 600V, 135°C, Class 1 and Class 2 (clear products only)

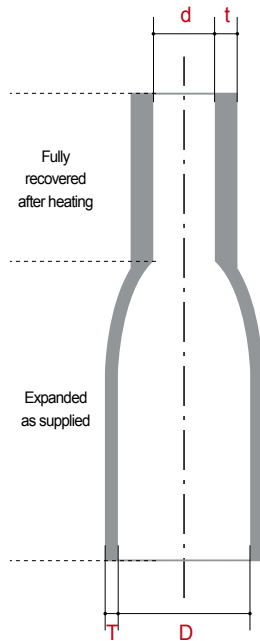
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.40kgf/mm ²	ASTM D 412
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 1.00kgf/mm ²	ASTM D 412
		Elongation	Min. 100%	AS23053 175°C/168hrs
	Heat shock		Pass @250 °Cx4hrs	AS23053
	Low temperature flexibility		No crack @ -55°Cx4hrs	ASTM D 2671
	Secant modulus		Min. 173MPa	ASTM D 882
Electrical	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 1.14kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	150°C/16hrs
	Flammability		Pass	ASTM D 2671
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 3/64 ~ 1 inch, special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
3/64	1.2	0.58	0.30	0.43	200
1/16	1.6	0.79	0.25	0.43	200
3/32	2.4	1.17	0.25	0.43	200
1/8	3.2	1.57	0.25	0.43	200
3/16	4.8	2.36	0.30	0.56	100
1/4	6.4	3.18	0.30	0.56	100
3/8	9.6	4.75	0.35	0.68	1.2
1/2	12.7	6.35	0.35	0.68	1.2
3/4	19.1	9.53	0.40	0.77	1.2
1	25.4	12.70	0.40	0.77	1.2

GSHS-3635

Flexible Polyolefin Tubing



Special Features

- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.

Key Specifications

- Operating temperature range : -55°C ~ 135°C
- Flammability : -F- mark ,UL VW-1 (except clear products)
- Minimum shrink temperature : 90°C
- Shrink ratio : 67% or more in radial direction
- Standards
 - UL 224 (File No. E84393 : 600V, 125°C)
 - AS23053/5 : 600V, 135°C, Class 1 (over expanded)

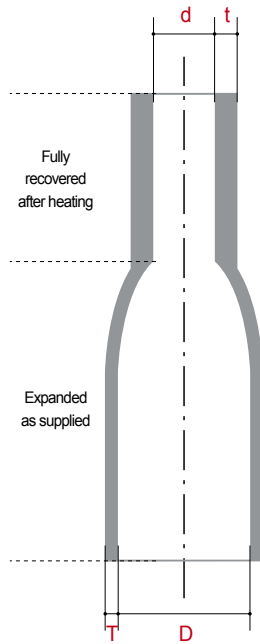
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 638
		Elongation	Min. 100%	AS23053 175°C/168hrs
	Heat shock		Pass @250 °C×4hrs	AS23053
	Low temperature flexibility		No crack @ -55°C×4hrs	AS23053
	Secant modulus		Max. 173MPa	ASTM D 882
	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
Chemical	Volume resistivity		Min. 1×10 ¹⁰ Ω - cm	ASTM D 876
	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	175°C/16hrs
	Flammability		Pass	UL 224
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 1.5 ~ 50 mm, special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
1.5	1.5	0.5	0.23	0.40	200
3.0	3.0	1.0	0.26	0.50	200
4.5	4.5	1.5	0.26	0.54	100
6.0	6.0	2.0	0.27	0.59	100
9.0	9.0	3.0	0.28	0.68	100
12.0	12.0	4.0	0.28	0.68	100
16.0	16.0	5.3	0.30	0.68	50
18.0	18.0	6.0	0.41	0.77	50
19.0	19.0	6.0	0.35	0.80	50
22.0	22.0	8.0	0.25	0.60	50
24.0	24.0	8.0	0.45	0.90	50
38.0	38.0	13.0	0.50	1.04	50
50.0	50.0	17.0	0.55	1.30	31

GSHS-4635

Flexible Polyolefin Tubing



Special Features

- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.

Key Specifications

- Operating temperature range : -55°C ~ 135°C
- Flammability : UL VW-1, CSA OFT
- Minimum shrink temperature : 90°C
- Shrink ratio : 75% or more in radial direction
- Standards
 - UL 224 (File No. E153276 : 600V, 125°C)
 - AS23053/5 : 600V, 135°C, Class 1 (over expanded)

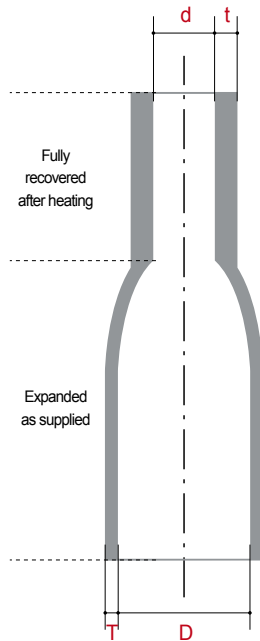
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 638
		Elongation	Min. 100%	AS23053 175°C/168hrs
	Heat shock		Pass @250 °Cx4hrs	AS23053
	Low temperature flexibility		No crack @ -55°Cx4hrs	AS23053
Electrical	Secant modulus		Max. 173MPa	ASTM D 882
	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	175°C/16hrs
	Flammability (VW-1)		Pass	UL 224
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 12 ~ 32 mm (3/4 inch), special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
Metric System (mm)	12.0	12.0	3.0	0.35	0.96	100
	25.4	25.4	7.0	0.35	0.96	50
	32.0	32.0	8.0	0.40	1.50	50
U.S. Customary System (Inch)	3/4	19.1	4.7	0.35	0.96	50

GSHS-1625BS

Semi-rigid Polyolefin Tubing



Special Features

- It is specially designed for butt splicing.
- Its tough abrasion resistance is suitable for delicate components in mechanical environments.
- It has excellent insulation.

Application

- Suitable for electric insulation, strain relief, bonding, and termination of wire splices and soldered/crimped connections.

Key Specifications

- Operating temperature range : -30°C ~ 135°C
- Minimum shrink temperature : 130°C
- Shrink ratio : 67% or more in radial direction
- Standards
UL 224 (File No. E153276 : 600V, 105°C)

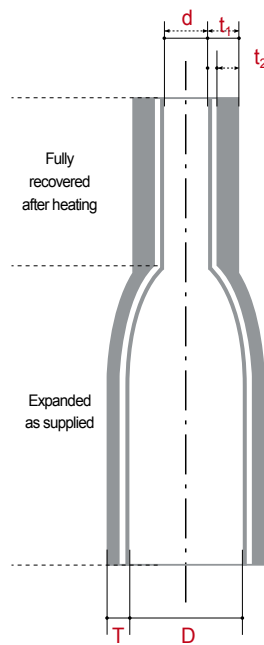
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.41kgf/mm ²	ASTM D 412 UL 224
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 0.99kgf/mm ²	ASTM D 412 UL 224 136°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250 °C x 4hrs	UL 224
	Low temperature flexibility		No crack @ -30°C x 1hr	UL 224
	Secant modulus		Min. 173MPa	UL 224
Electrical	Dielectric voltage withstand	Unaged	Min. 2,500V/1min.	UL 224
		Aged		136°C/168hrs
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 257
	Copper corrosion		No corrosion	UL 224 136°C/168hrs
	Copper stability elongation		No sign of degradation Min. 100%	

Available Colors



Dimension

- Size range : 3 ~ 8.5 mm, special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery		
					Total Min. t₁	Adhesive Min. t₂	
Metric System (mm)	3.0	3.0	1.2	0.30	0.65	0.25	200
	3.5	3.5	1.3	0.30	0.75	0.25	200
	4.5	4.7	1.6	0.45	1.00	0.35	100
	5.5	5.7	2.0	0.45	1.10	0.40	100
	6.5	6.7	2.3	0.50	1.10	0.45	100
	7.5	7.4	2.5	0.50	1.30	0.45	100
	8.0	8.0	3.0	0.65	1.40	0.50	100
	8.5	8.5	3.0	0.65	1.40	0.50	100

GSHS-1625W

Flexible Dual-wall Polyolefin Tubing



Special Features

- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.
- Upon application of heat over 110 °C, Adhesive line meltable

Key Specifications

- Operating temperature range : -55°C ~ 125°C (Crosslinked outer wall)
- Minimum shrink temperature : 120°C
- Shrink ratio : 50% or more in radial direction
- Standards
UL 224 (File No. E153276 : 600V, 125°C, except clear products)
AS23053/4 Class 2

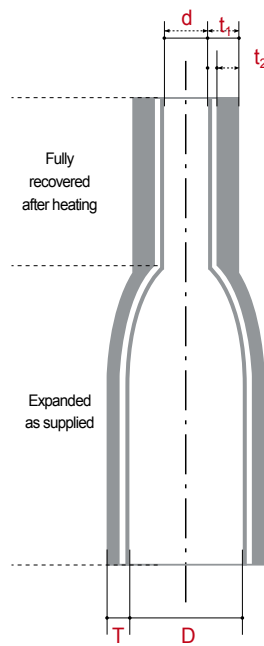
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 412 UL 224
		Elongation	Min. 200%	
	Aged		Min. 0.8kgf/mm ²	ASTM D 412 UL 224 158°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250 °C x 4hrs	UL 224
	Low temperature flexibility		No crack @ -55°C x 4hrs	ASTM D 2671
Electrical	Secant modulus		Max. 173MPa	UL 224
	Dielectric voltage withstand	Unaged	Min. 2,500V/1min.	UL 224
				158°C/168hrs
Chemical	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 257
			No corrosion	
Chemical			No sign of degradation	UL 224
	Copper stability elongation		Min. 100%	158°C/168hrs

Available Colors



Dimension

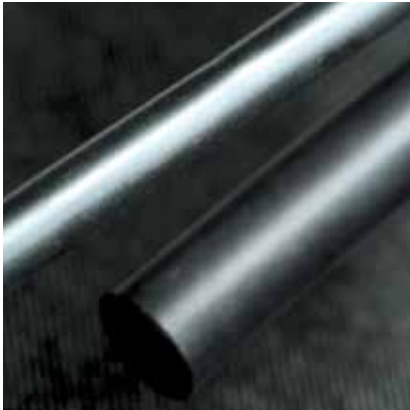
- Size range : 5 mm (1/8 ~ 1.5 inch), special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery		
					Total Min. t₁	Adhesive Min. t₂	
Metric System (mm)	5.0	5.0	2.5	0.50	1.05	0.35	1.2
U.S. Customary System (Inch)	1/8	3.2	1.57	0.25	0.60	0.20	1.2
	3/16	4.8	2.36	0.25	0.60	0.20	1.2
	1/4	6.4	3.18	0.30	0.75	0.20	1.2
	3/8	9.6	4.75	0.30	0.80	0.25	1.2
	1/2	12.7	6.35	0.30	0.80	0.25	1.2
	3/4	19.1	9.53	0.35	0.90	0.25	1.2
	1	25.4	12.70	0.40	1.05	0.30	1.2
	1.5	38.1	19.10	0.43	1.20	0.30	1.2

GSHS-2690NW

Flexible Dual-wall Polyolefin Tubing for the Fuel, Brake Pipe System



Special Features

- With a very thin-wall, hot-melt liner it is specially designed for the application to the fuel, brake, and power-steering pipes of automobiles.
- It has excellent flexibility and insulation.

Application

- Specially designed for the application to the fuel, brake, and power-steering pipes of automobiles.
- Prevents pipe corrosion from fluid, water, or chemical penetration and mechanical damage.

Key Specifications

- Operating temperature range : $-35^{\circ}\text{C} \sim 90^{\circ}\text{C}$
- Minimum shrink temperature : 120°C
- Shrink ratio : 25% or more in radial direction
- Standards
MS231-18 (Hyundai Automotive Specifications for Tubing)

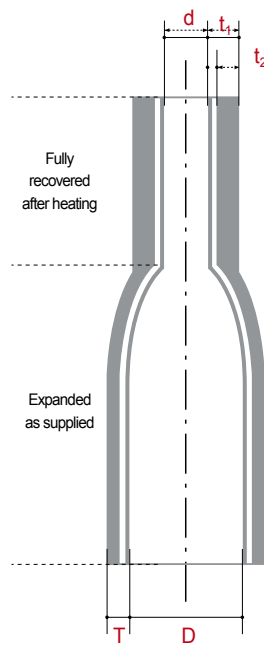
Properties		Values	Test Methods
Unaged	Tensile strength	Min. 1.2kgf/mm ²	MS231-18
	Elongation	Min. 300%	
Aged	Tensile strength	Min. 1.2kgf/mm ²	
	Elongation	Min. 270%	
Cold impact		Max -35°C	
Impact resistance		No crack	
Heat deformation retention		Max 60%	
Stress cracking		No crack	
Shrinkage ratio		Max. 5%	
Contact ability		Full contact	
Heat cycle		pass	
Fluid resistance		pass	

Available Colors



Dimension

- Size range : 4.5 ~ 18 mm, special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)	
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery			
				Total Min. t₁	Adhesive Min. t₂		
Metric System (mm)	4.5	4.5	3.1	0.60	0.80	0.10	300
	6.0	6.0	4.5	0.70	1.00	0.10	300
	8.0	8.0	6.1	0.70	1.00	0.10	200
	9.0	9.0	6.5	0.70	1.00	0.10	200
	11.0	11.0	7.9	0.75	1.10	0.10	100
	13.0	13.0	9.0	0.75	1.10	0.10	100
	15.0	14.5	10.5	0.75	1.20	0.10	100
	18.0	18.0	10.5	0.70	1.20	0.10	100

LS-2690R

Semi-Rigid Dual-wall Polyolefin Tubing for the Fuel, Brake Pipe System



Special Features

- With a very thin-wall, hot-melt liner it is specially designed for the application to the fuel, brake, and power-steering pipes of automobiles.
- It has excellent physical properties and insulation.

Application

- Specially designed for the application to the fuel, brake, and power-steering pipes of automobiles.
- Prevents pipe corrosion from fluid, water, or chemical penetration and mechanical damage.

Key Specifications

- Operating temperature range : -35°C ~ 90°C
- Minimum shrink temperature : 120°C
- Shrink ratio : 25% or more in radial direction
- Standards
MS231-18 (Hyundai Automotive Specifications for Tubing)

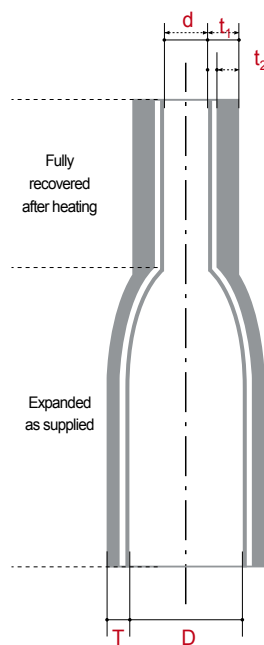
Properties		Values	Test Methods
Unaged	Tensile strength	Min. 1.2kgf/mm ²	MS231-18
	Elongation	Min. 300%	
Aged	Tensile strength	Min. 1.2kgf/mm ²	
	Elongation	Min. 270%	
Cold impact		Max -35°C	
Impact resistance		No crack	
Heat deformation retention		Max 60%	
Stress cracking		No crack	
Shrinkage ratio		Max. 5%	
Contact ability		Full contact	
Heat cycle		pass	
Fluid resistance		pass	

Available Colors



Dimension

- Size range : 4.5 ~ 18 mm, special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)	
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery			
				Total Min. t₁	Adhesive Min. t₂		
Metric System (mm)	4.5	4.5	3.1	0.60	0.80	0.10	300
	6.0	6.0	4.5	0.70	1.00	0.10	300
	8.0	8.0	6.1	0.70	1.00	0.10	200
	9.0	9.0	6.5	0.70	1.00	0.10	200
	11.0	11.0	7.9	0.75	1.10	0.10	100
	13.0	13.0	9.0	0.75	1.10	0.10	100
	15.0	14.5	10.5	0.75	1.20	0.10	100
	18.0	18.0	10.5	0.70	1.20	0.10	100

GSHS-3625WS

Semi-rigid Dual-wall Polyolefin Tubing



Special Features

- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent flame retardance and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, color coding, and moisture-proof encapsulating.
- Upon application of heat over 110°C, Adhesive line meltable

Key Specifications

- Operating temperature range : -55°C ~ 135°C
- Minimum shrink temperature : 130°C
- Shrink ratio : 67% or more in radial direction
- Standards
UL 224 (File No. E153276 : 600V, 125°C, except clear)
AS23053/4 Class 1

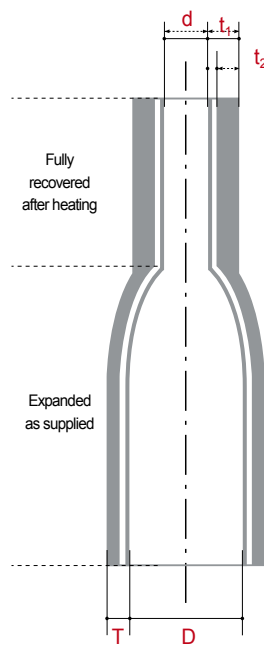
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.40kgf/mm ²	ASTM D 412
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 1.00kgf/mm ²	ASTM D 412
		Elongation	Min. 100%	UL 224 158°C/168hrs
	Heat shock		Pass @250°Cx4hrs	UL 224
	Low temperature flexibility		No crack @-55°Cx4hrs	AS23053
Electrical	Secant modulus		Min. 173MPa	ASTM D 882
	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 1.14kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	150°C/16hrs
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 1/8 ~ 1 inch, special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery		
					Total Min. t₁	Adhesive Min. t₂	
U.S. Customary System (Inch)	1/8	3.2	0.6	0.40	0.96	0.50	100
	3/16	4.8	1.5	0.45	1.09	0.64	100
	1/4	6.4	2.0	0.50	1.19	0.69	100
	3/8	9.5	3.4	0.50	1.27	0.76	1.2
	1/2	12.7	5.0	0.60	1.39	0.89	1.2
	3/4	19.1	8.0	0.70	1.65	1.02	1.2
	1	25.4	10.2	0.80	1.90	1.02	1.2

GSHS-3635W

Flexible Dual-wall Polyolefin Tubing



Special Features

- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.
- Upon application of heat over 110°C, Adhesive line meltable

Key Specifications

- Operating temperature range : -55°C ~ 135°C(Crosslinked outer wall)
- Minimum shrink temperature : 120°C
- Shrink ratio : 67% or more in radial direction
- Standards
UL 224 (File No. E153276 : 600V, 125°C, except clear products)
AS23053/4 Class 3

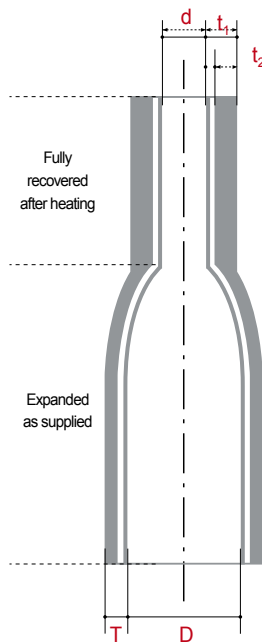
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638 AS23053
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 638 UL 224 158°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250°Cx4hrs	AS23053
	Low temperature flexibility		No crack @ -55°Cx4hrs	AS23053
	Secant modulus		Max. 173MPa	ASTM D 882
Electrical	Dielectric strength		Min. 19.7kV/mm ²	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	AS23053 24°C/24hrs
		Dielectric strength	Min. 15.8kV/mm ²	
	Copper corrosion		No corrosion	AS23053 175°C/16hrs
	Copper mirror corrosion		No corrosion	
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 3 ~ 38 mm (1/8 ~ 1.5 inch), special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)	
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery			
				Total Min. t₁	Adhesive Min. t₂		
Metric System (mm)	3.0	3.0	1.0	0.53	1.00	0.40	1.2
	4.0	4.0	1.3	0.40	0.90	0.40	1.2
	4.5	4.5	1.5	0.48	1.10	0.50	1.2
	5.0	5.0	2.0	0.45	1.00	0.50	1.2
	6.0	6.0	2.0	0.45	1.20	0.55	1.2
	9.0	9.0	3.0	0.50	1.30	0.65	1.2
	12.0	12.0	4.0	0.55	1.35	0.75	1.2
	16.0	16.0	5.3	0.50	1.35	0.70	1.2
	19.0	19.0	6.0	0.77	2.00	1.05	1.2
	24.0	24.0	8.0	0.78	2.20	0.90	1.2
	27.0	27.0	9.0	0.90	2.20	1.20	1.2
	31.0	31.0	11.0	0.80	2.20	1.20	1.2
	32.0	32.0	11.5	0.92	2.00	1.20	1.2
	38.0	38.0	13.0	0.76	2.30	1.20	1.2
U.S. Customary System (Inch)	1/8	3.2	1.0	0.53	1.00	0.40	1.2
	3/16	4.8	1.6	0.48	1.00	0.50	1.2
	1/4	6.4	2.1	0.45	1.00	0.59	1.2
	3/8	9.6	3.2	0.50	1.20	0.65	1.2
	1/2	12.7	4.2	0.50	1.35	0.79	1.2
	3/4	19.1	6.4	0.77	2.00	1.09	1.2
	1	25.4	8.4	0.70	2.00	0.93	1.2
	1.5	38.1	12.7	0.76	2.00	1.20	1.2

GSHS-4635WS

Semi-rigid Dual-wall Polyolefin Tubing



Special Features

- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent flame retardance and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.
- Upon application of heat over 110°C, Adhesive line meltable

Key Specifications

- Operating temperature range : -30°C ~ 135°C(Crosslinked outer wall)
- Minimum shrink temperature : 130°C
- Shrink ratio :75% or more in radial direction
- Standards
UL 224 (File No. E153276 : 600V, 125°C, except clear product)
ES 91409(HMT) by Hyundai Motors
GMW17136(GME15491)

Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.40kgf/mm ²	ASTM D 412 AS23053
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 1.00kgf/mm ²	ASTM D 412 UL 224 158°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250°Cx4hrs	UL 224
	Cold bend		No crack @-30°Cx4hrs	UL 224
	Secant modulus		Min. 173MPa	ASTM D 882
	Dielectric strength		Min. 19.7kV/mm	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 876
	Fluid resistance	Tensile strength	Min. 1.14kgf/mm ²	AS23053 24°C/24hrs
		Dielectric strength	Min. 15.8kV/mm	
	Copper corrosion		No corrosion	AS23053 150°C/16hrs
	Copper mirror corrosion		No corrosion	
	Fungus resistance		Pass	ASTM G 21

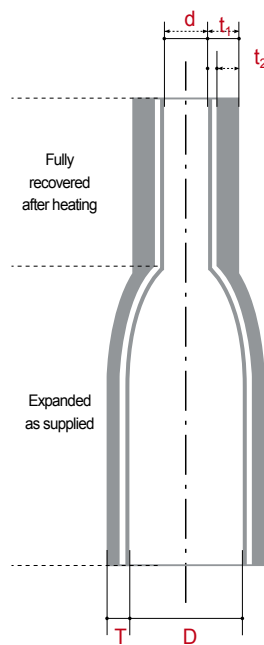
HMT : Hot Melt Tube

Available Colors



Dimension

- Size range : 6 ~ 18 mm, special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery		
					Total Min. t₁	Adhesive Min. t₂	
Metric System (mm)	6.0	6.0	1.27	0.40	1.20	0.56	100
	8.0	8.0	1.65	0.50	1.20	0.76	100
	11.0	11.0	2.41	0.60	1.90	1.02	1.2
	15.0	15.0	3.75	0.65	2.15	1.09	1.2
	18.0	18.0	4.45	0.70	2.40	1.37	1.2

GSHS-4635WT

Thin & Dual-wall Polyolefin Tubing



Special Features

- Narrow size range that covers a wide range of diameters, allowing reduced inventory.
- It accommodates an irregular or jagged shape.
- It has excellent flame retardance and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.
- Upon application of heat over 110°C, Adhesive line meltable

Key Specifications

- Operating temperature range : -30°C ~ 135°C (Crosslinked outer wall)
- Minimum shrink temperature : 120°C
- Shrink ratio : 75% or more in radial direction
- Standards
UL 224 (File No. E153276 : 600V, 125°C, except clear product)

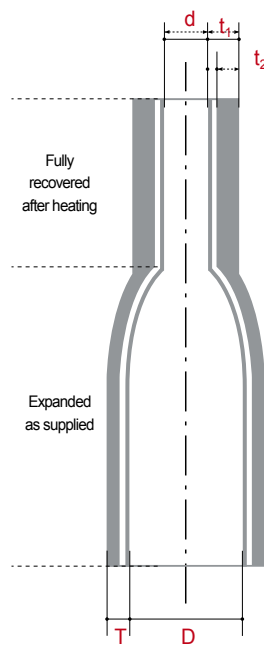
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 638
		Elongation	Min. 100%	UL 224 158°C/168hrs
	Heat shock		Pass @250°Cx4hrs	AS23053
	Cold bend		No crack @ -30°Cx1hr	UL 224
	Secant modulus		Max. 173MPa	ASTM D 882
Electrical	Dielectric strength		Min. 19.7kV/mm ²	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω-cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm ²	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	121°C/16hrs
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 4 ~ 52 mm, special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery		
					Total Min. t₁	Adhesive Min. t₂	
Metric System (mm)	4.0	4.0	1.0	0.45	0.90	0.45	1.2
	8.0	8.0	2.0	0.35	0.90	0.45	1.2
	12.0	12.0	3.0	0.50	1.30	0.60	1.2
	13.0	13.0	3.3	0.50	1.30	0.65	1.2
	16.0	16.0	4.0	0.60	1.60	0.75	1.2
	24.0	24.0	6.0	0.75	2.10	0.75	1.2
	32.0	32.0	8.0	0.80	2.30	1.00	1.2
	52.0	52.0	13.0	0.80	2.50	0.90	1.2

GSHS-4650WS

Semi-rigid Dual-wall Polyolefin Tubing (Extended Temperature Range)



Special Features

- It is formulated to function properly within an extended temperature range.
- It has excellent flame retardance and insulation.

Application

- Designed for the insulation and encapsulation of wire splicing in the environment as inside the automotive.
- Upon application of heat over 150°C, Adhesive line meltable

Key Specifications

- Operating temperature range : -30°C ~ 135°C (Crosslinked outer wall)
- Minimum shrink temperature : 130°C
- Shrink ratio : 75% or more in radial direction
- Standards
GMW17136 (GME15491)

Properties		Values		Test Methods
Physical	Unaged	Tensile strength	Min. 1.40kgf/mm ²	ASTM D 412
		Elongation	Min. 200%	AS23053
	Aged	Tensile strength	Min. 1.00kgf/mm ²	ASTM D 412
		Elongation	Min. 100%	UL 224 158°C/168hrs
	Heat shock		Pass @250°Cx4hrs	UL 224
	Cold bend		No crack @ -30°Cx1hr	UL 224
Electrical	Secant modulus		Min. 173MPa	ASTM D 882
	Dielectric strength		Min. 19.7kV/mm ²	ASTM D 2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω-cm	ASTM D 876
Chemical	Fluid resistance	Tensile strength	Min. 1.14kgf/mm ²	AS23053
		Dielectric strength	Min. 15.8kV/mm ²	24°C/24hrs
	Copper corrosion		No corrosion	AS23053
	Copper mirror corrosion		No corrosion	150°C/16hrs
	Fungus resistance		Pass	ASTM G 21

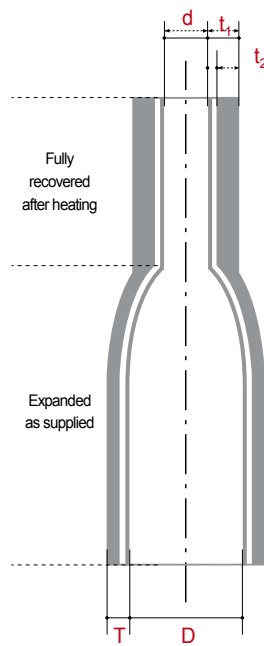
SHMT : Super Hot Melt Tube

Available Colors



Dimension

- Size range : 6 ~ 18 mm, special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)			Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	After recovery		
					Total Min. t₁	Adhesive Min. t₂	
Metric System (mm)	6.0	6.0	1.27	0.40	1.20	0.56	100
	8.0	8.0	2.00	0.50	1.20	0.76	100
	11.0	11.0	2.41	0.60	1.90	1.02	1.2
	15.0	15.0	3.75	0.65	2.15	1.09	1.2
	18.0	18.0	4.45	0.70	2.40	1.37	1.2

LS-CATV

Adhesive-lined, Flexible, Heavy-wall Polyolefin Tubing



Special Features

- Its fast and simple installation allows a clean and easy re-entry of the connector.
- Its high-performance adhesive provides an absolute waterproof encapsulation.
- It has excellent flexibility and insulation.

Application

- Excellent cable protection, which fits cable TV network industry.

Key Specifications

- Operating temperature range : -55°C~ 125°C
- Minimum shrink temperature : 120°C
- Shrink ratio : 67% or more in radial direction

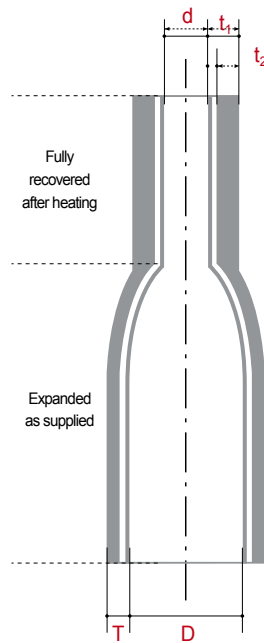
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.06kgf/mm ²	ASTM D 412
		Elongation	Min. 300%	
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 412 150°C/168hrs
		Elongation	Min. 200%	
	Heat shock		No crack @225°Cx4hrs	ASTM D 2671
	Adhesive peel strength to	Polyethylene	110N/25mm	ASTM D 1000
		Aluminum	80N/25mm	
	Low temperature flexibility		No crack @ -55°Cx4hrs	ASTM D 2671
Electrical	Dielectric strength		Min. 13.8kV/mm ²	ASTM D 149
	Volume resistivity		Min. 1x10 ¹⁴ Ω - cm	ASTM D 257
Chemical	Water absorption		Max. 0.1%	ASTM D 570 23°C/24hrs
	Water penetration		No penetration	50°Cx14days

Available Colors



Dimension

- Size range : 10 ~ 70 mm, special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t1	
Metric System (mm)	10.0	10.0	3.0	0.70	1.2
	19.0	19.0	6.0	0.60	1.2
	27.0	27.0	9.0	1.10	1.2
	33.0	33.0	9.0	1.00	1.2
	38.0	38.0	13.0	1.20	1.2
	43.0	43.0	13.0	1.10	1.2
	51.0	51.0	18.0	1.20	1.2
	70.0	70.0	25.0	1.60	1.2

LS-PHWT-FR

Flame-retardant Adhesive-lined Heavy-wall Polyolefin Tubing



Special Features

- Its high performance adhesive provides an absolute waterproof encapsulation.
- It provides excellent mechanical protection and insulation.

Application

- Designed for the insulation and encapsulation of wire splicing, electrical connection, jacket repair, and termination.
- Suitable for submergible or direct buried installation.

Key Specifications

- Operating temperature range : -55°C ~ 120°C
- Flammability : VTFT (IEEE 383)
- Minimum shrink temperature : 120°C
- Shrink ratio : 67% or more in radial direction
- Standards
AS23053/15 (up to size 51)
ABS Certificate No. 06-BK 155018
UL 224(File No. : E84393 600V, 125°C, except clear products)

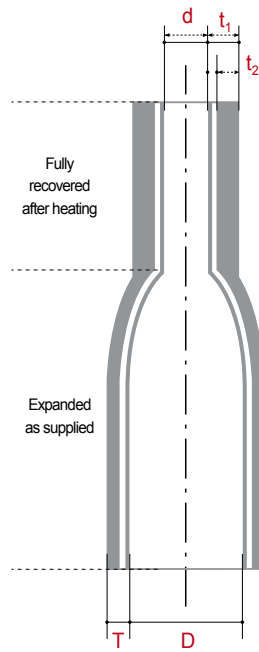
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.06kgf/mm ²	ASTM D 412
		Elongation	Min. 200%	ASTM D 2671
	Aged	Tensile strength	Min. 0.76kgf/mm ²	ASTM D 412
		Elongation	Min. 100%	ASTM D 2671 150°C 168hrs
	Low temperature flexibility		No crack @ -55°Cx4hrs	ASTM D 2671
	Heat shock		No crack @225°Cx4hrs	ASTM D 2671
	Thermal endurance		TV/120mm	IEC 60216
Electrical	Dielectric strength		Min. 7.9kV/mm ²	ASTM D 149/2671
	Volume resistivity		Min. 1x10 ¹¹ Ω - cm	IEC 60093
Chemical	Flammability		Pass	IEE 383 VTFT
	Water absorption		Max 0.5% @23°Cx24hrs	ASTM D 570
	Fungus resistance		Pass	ASTM G 21
	Fluid resistance	Retention of tensile strength	ASTM No. 2 or IRM 902 oil @ 70°Cx 4hrs	ASTM D 412
		Retention of elongation	Min. 0.53kgf/mm ² Min. 100%	ASTM D 2671

Available Colors



Dimension

- Size range : 9 ~ 130 mm, special sizes are negotiable.



Standard Size (Metric size)	Expanded (mm)	Recovered (mm)			Standard Spool Length (m)
	ID	ID	WT		
	Min. D	Nom. d	Nom. T₁	Nom. T₂	
9	9.0	2.2	2.20	1.80	1.2
13	13.0	2.4	3.20	2.40	1.2
20	20.0	3.8	3.50	2.40	1.2
28	28.0	5.6	4.60	3.40	1.2
33	33.0	5.6	4.60	3.40	1.2
38	38.0	9.6	4.50	3.30	1.2
43	43.0	10.0	4.90	3.70	1.2
51	51.0	13.2	5.50	4.10	1.2
70	70.0	18.2	5.50	4.10	1.2
85	85.0	21.8	5.50	4.10	1.2
90	90.0	27.2	5.50	4.10	1.2
100	100.0	27.2	6.00	4.60	1.2
130	130.0	31.7	5.80	4.40	1.2

LS-PMWT-FR

Flame-retardant Adhesive-lined Medium-wall Polyolefin Tubing



Special Features

- Its high performance adhesive provides an absolute waterproof encapsulation.
- It provides excellent mechanical protection and insulation.

Application

- Designed for the insulation and encapsulation of wire splicing, electrical connection, jacket repair, and termination.
- Suitable for submergible or direct buried installation.

Key Specifications

- Operating temperature range : -55°C ~ 125°C
- Flammability : VTFT (IEEE 383)
- Minimum shrink temperature : 120°C
- Shrink ratio : 67% or more in radial direction
- Standards
ABS Certificate NO. 06-BK 155018
AS23053/15 (up to size 51)
UL 224(File No. : E84393 600V, 125°C, except clear products)

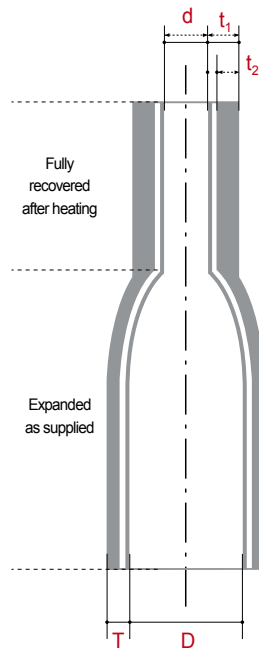
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.06kgf/mm ²	ASTM D 412
		Elongation	Min. 200%	ASTM D 2671
	Aged	Tensile strength	Min. 0.76kgf/mm ²	ASTM D 412
		Elongation	Min. 100%	ASTM D 2671 150°C/168hrs
	Low temperature flexibility		No crack @ -55°Cx4hrs	ASTM D 2671
	Heat shock		No crack @225°Cx4hrs	ASTM D 2671
	Thermal endurance		TI/120mm	IEC 60216
Electrical	Dielectric strength		Min. 7.9kV/mm ²	ASTM D 149/2671
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	IEC 60093
Chemical	Flammability		Pass	IEE 383 VTFT
	Water absorption		Max. 0.5% @23°Cx24hrs	ASTM D 570
	Fungus resistance		Pass	ASTM G 21
	Fluid resistance	Retention of tensile strength	ASTM No. 2 or IRM 902 oil @ 70°Cx 4hrs	ASTM D 412
		Retention of elongation	Min. 0.53kgf/mm ² Min. 100%	ASTM D 2671

Available Colors



Dimension

- Size range : 10 ~ 140 mm, special sizes are negotiable.



Standard Size (Metric size)	Expanded (mm)	Recovered (mm)			Standard Spool Length (m)
	ID	ID	WT		
	Min. D	Nom. d	Nom. T₁	Nom. T₂	
7	7.0	1.5	1.50	1.00	1.2
10	10.0	2.0	1.50	1.00	1.2
16	16.0	3.0	2.80	1.80	1.2
18	18.0	3.3	2.80	1.80	1.2
25	25.0	5.6	3.50	2.30	1.2
27	27.0	5.6	3.50	2.30	1.2
30	30.0	7.6	3.50	2.30	1.2
35	35.0	9.6	3.50	2.30	1.2
40	40.0	10.8	3.50	2.40	1.2
45	45.0	9.6	4.90	3.70	1.2
50	50.0	13.2	4.00	2.60	1.2
63	63.0	18.2	4.70	3.30	1.2
70	70.0	18.2	4.70	3.30	1.2
75	75.0	21.7	4.70	3.30	1.2
85	85.0	21.7	4.70	3.30	1.2
90	90.0	22.0	4.80	3.30	1.2
95	95.0	28.0	4.80	3.30	1.2
100	100.0	30.0	4.80	3.30	1.2
115	115.0	33.0	4.80	3.30	1.2
140	140.0	36.1	4.95	3.65	1.2

GSHS-1675

Rigid Polyvinylidene Fluoride Tubing



Special Features

- It is specially designed for the environment where mechanical/chemical resistance is needed.
- It has excellent flame retardance and insulation.

Application

- Suitable for various electric insulation, strain relief, and bonding of cables and connectors and widely applied for interconnection or termination.
- Light-duty harnessing, jacketing, bundling, and color coding of electric wires.

Key Specifications

- Operating temperature range : -55°C ~ 175°C
- Flammability : UL VW-1 , CSA OFT
- Minimum shrink temperature : 175°C
- Shrink ratio : 50% or more in radial direction
- Standards
 - UL 224 (File No. E84393 : VW-1, 600V, 150°C)
 - CSA C22.2 (File No. LR55659 : OFT, 600V, 150°C)
 - AS23053/8 Class 1, 600V, 175°C

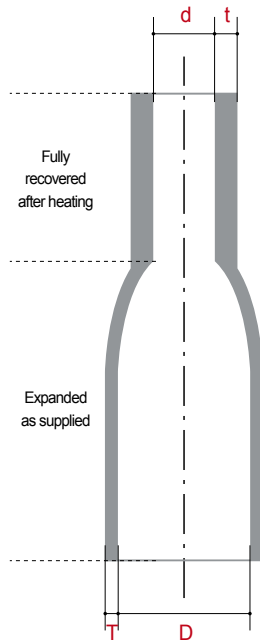
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 3.52kgf/mm ²	ASTM D 412 AS23053
		Elongation	Min. 150%	
	Aged	Tensile strength	Min. 1.48kgf/mm ²	AS23053 250°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @300°Cx4hrs	AS23053
	Low temperature flexibility		No crack @ -55°Cx4hrs	AS23053
	Secant modulus		Min. 828MPa	ASTM D 882
Electrical	Dielectric strength		Size to 0.5" Min. 31.5kV/mm	ASTM D 2671
			Size over 0.5" Min. 23.6kV/mm	
	Volume resistivity		Min. 1x10 ¹³ Ω - cm	ASTM D 876
Chemical	Copper corrosion		No corrosion	UL 224 180°C/168hrs
	Copper stability elongation		No sign of degradation Min. 100%	
	Flammability		Pass	UL 224

Available Colors



Dimension

- Size range : 1 ~ 35 mm (3/64 ~ 1 inch), special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
Metric System (mm)	1	1.0	0.50	0.10	0.178	1.2
	3	3.0	1.50	0.12	0.229	1.2
	4	4.0	2.00	0.12	0.203	1.2
	8	8.0	4.00	0.13	0.229	1.2
	30	30.0	15.00	0.20	0.406	1.2
	35	35.0	17.50	0.20	0.406	1.2
U.S. Customary System (Inch)	40	40.0	20.00	0.20	0.406	1.2
	3/64	1.3	0.60	0.10	0.203	1.2
	1/16	1.8	0.79	0.10	0.203	1.2
	3/32	2.5	1.19	0.12	0.229	1.2
	1/8	3.4	1.59	0.12	0.229	1.2
	3/16	4.9	2.38	0.12	0.229	1.2
	1/4	6.4	3.18	0.14	0.279	1.2
	3/8	9.5	4.76	0.14	0.279	1.2
	1/2	12.7	6.35	0.14	0.279	1.2
	3/4	19.1	9.53	0.18	0.356	1.2
1	25.7	12.70	0.20	0.406	1.2	
1/5	38	19.10	0.20	0.406	1.2	

LG-BBHV

High Voltage Busbar Insulation Tubing



Special Features

- Ethylene propylene rubber.
- Fast and easy installation/removal.
- It provides protection against flashover and accidentally induced discharge.
- It has excellent resistance to corona attack and surface tracking.

Application

- Tubing for both copper and aluminum busbars with rectangular/circular cross section.
- Applicable up to 25kV system voltage when used according to Quick Selection Chart.

Key Specifications

- Standards
Qualification report for BBHV

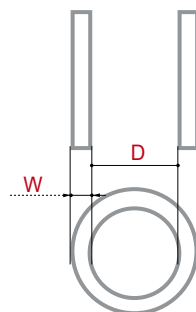
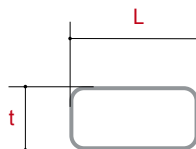
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.02kgf/mm ²	ASTM D 638
		Elongation	Min. 300%	ASTM D 2671 ISO 37
	Aged	Tensile strength	Min. 1.02kgf/mm ²	ASTM D 638
		Elongation	Min. 300%	ASTM D 2671 121°C/168hrs
	Heat shock		No crack @225°Cx4hrs	ASTM D 2671
	Thermal endurance		TI/105°C	IEC 60216
Electrical	Low temperature flexibility		No crack @ -40°Cx4hrs	ASTM D 2671
	Dielectric strength		Min. 18kV/mm	IEC 60243
	Volume resistivity		Min. 1x10 ¹² Ω-cm	IEC 60093
	Tracking resistance		Pass(asper spec.)	IEC 60587
Chemical	Smoke Index		Min. 80	IEC 61034
	Toxicity Index(HCI)		Max. 1%	IEC 60754
	Flammability		Pass	ANSI/IEEE C37.20

Available Colors



Dimension

- Size range : 15/06 ~ 150/60 mm, special sizes are negotiable.



Size	Application Range (Busbar,mm)	D(mm) Inside Diameter		W(mm) Wall Thickness		Standard Spool Length (m)
		as supplied (min)	after recovery (max)	as supplied (nom)	after recovery (nom)	
15/06	24~34	15	6	1.1	2.0	25
25/10	34~44	25	10	0.9	1.9	25
30/12	44~60	30	12	1.1	2.3	30
40/16	60~80	40	16	1.1	2.5	30
50/20	80~105	50	20	1.1	2.5	30
60/25	90~120	60	25	1.1	2.5	30
75/30	105~140	75	30	1.1	2.5	30
100/40	140~180	100	40	1.1	2.5	30
120/50	180~220	120	50	1.3	2.8	30
150/60	220~270	150	60	1.1	2.8	30

• Above busbar range is recommended by LS

LG-BBLV

Low Voltage Busbar Insulation Tubing



Special Features

- Medium-wall tubing for the insulation up to 1kV.
- It provides protection against flashover by an accidental busbar bridging.
- It has excellent heat emission.
- It has excellent UV and weather resistance.
- It has excellent flame retardance and insulation.
- It has an outstanding shelf life at 50°C without any deterioration in performance.

Application

- Suitable for both exposed and enclosed busbars.
- Suitable for connection among switchgears, motor control centers and other electrical equipments.
- Suitable for outdoor use.

Key Specifications

- Standards
Qualification report for BBLV

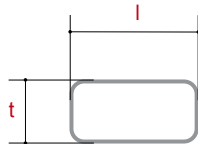
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.2kgf/mm ²	ASTM D 638
		Elongation	Min. 350%	ASTM D 2671 ISO 37
	Aged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 2671
		Elongation	Min. 200%	150°C/168hrs
	Heat shock		No crack @225°Cx4hrs	ASTM D 2671
	Thermal endurance		TI/105°C	IEC 60216
	Low temperature flexibility		No crack @ -40°Cx4hrs	ASTM D 2671
	Impact brittleness		Pass @ -40°C	ASTM D 746
Electrical	Dielectric strength		Min. 13kV/mm	IEC 60243
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm	IEC 60093
Chemical	Water absorption		Max. 0.5%	ASTM D 570
	Flammability		Pass	ANSI/IEEE C 37.20

Available Colors



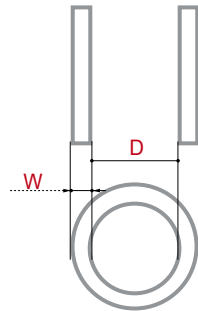
Dimension

• Size range : 15/06 ~ 175/70 mm, special sizes are negotiable.



Size		Application Range (Busbar,mm)	D(mm) Inside Diameter		W(mm) Wall Thickness		Standard Spool Length (m)
			as supplied (min)	after recovery (max)	as supplied (nom)	after recovery (nom)	
Metric System (mm)	15/06	24~36	15	6	0.5	1.5	30
	30/12	42~76	30	12	0.5	1.5	30
	50/20	68~120	50	20	0.5	1.5	30
	75/30	100~172	75	30	0.5	1.5	30
	100/40	132~220	100	40	0.5	1.5	30
	120/50	164~244	120	50	0.5	1.5	30
	150/50	172~314	150	50	0.5	1.5	30

• Above busbar range is recommended by LS



CRFR

Flexible Chlorinated Polyolefin Tubing



Special Features

- It has excellent retardance to fluid and solvent: lubricating oil, ground vehicle fuel, or hydraulic fluid.
- It has excellent flame retardance and insulation.

Application

- Suitable for various insulation and strain relief.
- Abrasion protection for cable harnessing and wire bundling for military industries.

Key Specifications

- Operating temperature range : -70°C ~ 121°C
- Flammability : ASTM D 2671 Procedure A, C
- Minimum Shrink temperature : 135°C
- Shrink ratio : 50% or more in radial direction
- Standards
AS23053/1 Class 1 and Class 2

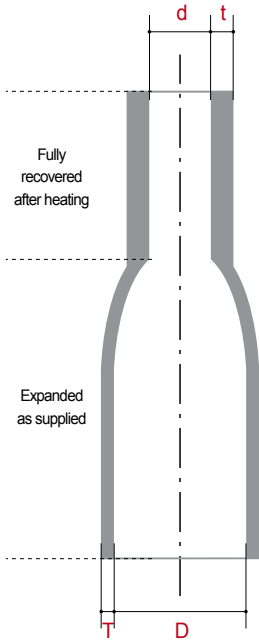
Properties		Values		Test Methods
Physical	Unaged	Tensile strength	Min. 1.06kgf/mm ²	ASTM D 412
		Elongation	Min. 250%	
		Tensile stress @100%Elongation	Max. 1.06kgf/mm ²	
	Aged	Tensile strength	Min. 0.85kgf/mm ²	ASTM D 412 121°C/168hrs
		Elongation	Min. 200%	
	Heat shock		Pass @200°Cx4hrs	AS23053
	Low temperature flexibility		No crack @ -70°Cx4hrs	AS23053
	2% Secant modulus		Max. 17.59kgf/mm ²	ASTM D 2671
	Hardness		SHORE A 80±5	ASTM D 2240
	Electrical	Dielectric strength	Min. 11.8kV/mm	ASTM D 2671
		Volume resistivity	Min. 1x10 ¹¹ Ω - cm	ASTM D 876
Chemical	Copper corrosion		No corrosion	121°C/168hrs
	Copper mirror corrosion		No corrosion	150°C/16hrs
	Fluid resistance	Tensile strength	Min. 0.70kgf/mm ²	AS23053 23°C/24hrs
		Elongation	Min. 250%	
	Flammability		Pass	ASTM D 2671
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

- Size range : 3/32 ~ 1-1/2 inch, special sizes are negotiable.



Size of Diameter	Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
	as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
3/32	2.4	1.20	0.45	0.70	200
1/8	3.2	1.57	0.45	0.70	200
3/16	4.8	2.36	0.45	0.75	100
1/4	6.4	3.60	0.45	0.89	100
3/8	9.6	5.40	0.50	1.01	31
1/2	12.7	7.30	0.60	1.21	31
5/8	15.9	9.10	0.65	1.32	31
3/4	19.1	10.90	0.70	1.44	31
1	25.4	14.50	0.85	1.77	25
1-1/4	31.8	18.10	1.00	2.20	20
1-1/2	38.1	21.80	1.10	2.41	20

DRET

Diesel-resistant, Flexible, Elastomeric Polyolefin Tubing



Special Features

- It has excellent retardance to fluid and solvent: lubricating oil, ground vehicle fuel, or hydraulic fluid.
- It has excellent flame retardance and insulation.

Application

- Suitable for various insulation and strain relief.
- Abrasion protection for cable harnessing and wire bundling for military industries.

Key Specifications

- Operating temperature range : -75°C ~ 150°C
- Flammability : ASTM D 2671 Procedure A, C
- Minimum Shrink temperature : 135°C
- Shrink ratio : 50% or more in radial direction
- Standards
AS23053/16

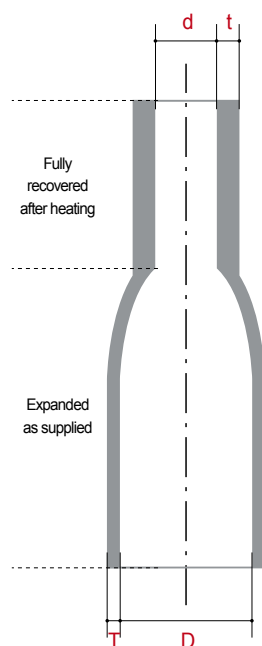
Properties		Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.20kgf/mm ²
		Elongation	Min. 250%
		Tensile stress @100%Elongation	Max. 1.06kgf/mm ²
	Aged	Tensile strength	Min. 1.06kgf/mm ²
		Elongation	Min. 200%
	Heat shock		Pass @200°Cx4hrs
	Low temperature flexibility		No crack @ -65°Cx4hrs
Electrical	Dielectric strength		Min. 11.9kV/mm
	Volume resistivity		Min. 1x10 ¹⁰ Ω - cm
	Restricted shrinkage		No crack@ 2000Vx1min.
Chemical	Copper corrosion		No corrosion
	Copper mirror corrosion		No corrosion
	Fluid resistance	Tensile strength	Min. 1.06kgf/mm ²
		Elongation	Min. 200%
		Dielectric strength	Min. 7.9kV/mm
	Flammability (Procedure A)		Pass
	Water absorption		Max. 2%
	Fungus resistance		Pass

Available Colors



Dimension

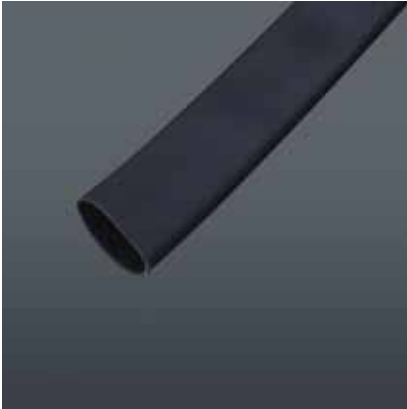
- Size range : 3/32 ~ 2 inch, special sizes are negotiable.



Standard Size (Inch Size)	Expand	Recovered		Standard Spool Length (m)
	Inside Diameter (mm)	Max. Inside Diameter (mm)	Min. Thick. At any point (mm)	
3/32	2.38	1.20	0.60	200
1/8	3.20	1.57	0.60	200
3/16	4.80	2.36	0.60	100
1/4	6.35	3.18	0.64	100
3/8	9.53	4.75	0.76	31
1/2	12.70	6.35	0.84	31
5/8	15.88	7.94	0.96	31
3/4	19.05	9.53	1.07	31
7/8	22.23	11.12	1.17	31
1	25.40	12.70	1.27	31
1-1/4	31.75	15.90	1.53	31
1.5	38.10	19.10	1.78	31
2	50.80	25.4	2.16	31

LS-V200

Fluoro Elastomeric Tubing



Special Features

- It has high resistance to impact and abrasion, chemical resistance

Application

- It has excellent resistance to a wide variety of fuels, lubricants, acids, and solvents at elevated temperatures
- It has flexibility at low temperatures without cracking

Key Specifications

- Operating temperature range : -55°C ~200°C.
- Flammability : ASTM D 2671 Procedure A.
- Minimum shrink temperature : 100°C.
- Shrink ratio : 50% or more in radical direction.
- Standards
AS23053/13

Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 0.84 kgf/mm ²	ASTM D 412 200%/10min
		Elongation	Min. 250%	
		Dielectric strength	Max. 1.40 kgf/mm ²	
		200% Tensile strength	Min. 7.9 kV/mm	
	Aged	Tensile strength	Min. 0.84kgf/mm ²	ASTMD 412
		Elongation	Min. 200%	250_/168 hrs
	Heat shock		No crack	300°C/4hrs
	Low temperature flexibility		No crack	-40°C
	Secant modulus		No crack	200°C
	Electrical	Voltage withstand	Pass	2,000V/min
volume resistivity		Min. 1x10 ¹⁰ Ω - cm	ASTM D 876	
Chemical	Copper corrosion		No pitting or corrosion	175°C/16hrs
	Water absorption		Max. 0.5% @ 23°C/24hrs	ASTM D 570
	Fluid resistance	Tensile strength	Min. 0.84 kgf/mm ²	ASTM D 570
	(Refer to below test fluid)	Elongation	Min. 250%	
	Fungus resistance		Pass	ASTM G 21
	Flammability		Pass	ASTM D2671 Procedure A

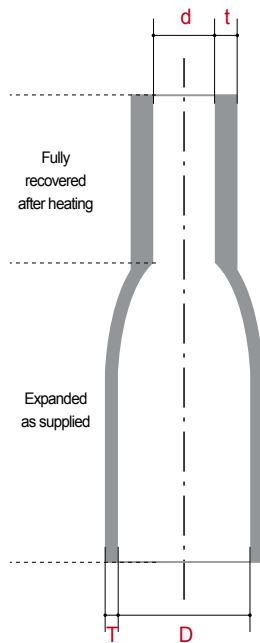
Available Colors



- Other colors are available upon request.

Dimension

- Size range : 1/8~1-1/2 inch, special size are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
U.S. Customary System (Inch)	1/8	3.18	1.57	0.41	0.65	200
	3/16	4.75	2.39	0.48	0.70	200
	1/4	6.35	3.18	0.46	0.70	100
	3/8	9.53	4.75	0.44	0.70	100
	1/2	12.70	6.35	0.44	0.70	31
	5/8	15.90	7.92	0.53	0.86	31
	3/4	19.10	9.53	0.53	0.86	31
	7/8	22.20	11.10	0.58	0.97	31
	1	25.40	12.70	0.60	0.97	25
	1-1/4	31.80	15.90	0.69	1.00	20
	1-1/2	38.10	19.10	0.69	1.00	20

LG-GSP

Thin-wall Polyolefin Tubing for the Gas Spring Protection



Special Features

- It accommodates a wide dimensional difference.
- It has excellent abrasion resistance.
- It has excellent flexibility and insulation.

Application

- Specially designed for the application to the gas spring of automobiles.

Key Specifications

- Operating temperature range : -55°C ~ 105°C
- Minimum shrink temperature : 90°C
- Shrink ratio : 67% or more in radial direction
- Standards
UL 224 (Reference Standard)

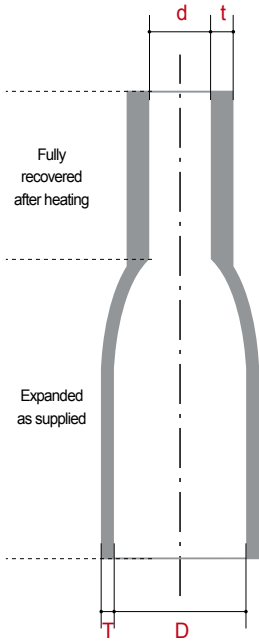
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 638
		Elongation	Min. 200%	
	Aged		Min. 0.8kgf/mm ²	ASTM D 368 UL 224 136°C/168 hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250°Cx4hrs	UL224
	Low temperature flexibility		No crack @ -55°Cx4hrs	UL224
	Secant modulus		Max. 173MPa	ASTM D 882
Chemical	Fluid resistance	Tensile strength	Min. 0.7kgf/mm ²	MIL-I-23053 24°C/24hrs
		Dielectric strength	Min. 15.8 kV/mm	
	Fungus resistance		Pass	ASTM G 21

Available Colors



Dimension

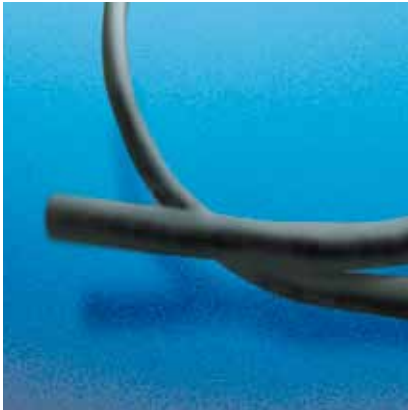
- Size range : 20 mm, special sizes are negotiable.



Size of Diameter		Inside Diameter (mm)		Wall Thickness (mm)		Standard Spool Length (m)
		as supplied Min. D	after recovery Max. d	as supplied Nom. T	after recovery Min. t	
Metric System (mm)	20	20.0	8.0	0.25	0.70	100

EIT-600

Non Heat-shrinkable Flexible Polyolefin Tubing



Special Features

- It has excellent flame retardance, flexibility, and insulation.

Application

- Suitable for various insulation of wires.

Key Specifications

- Operating temperature range : -55°C ~ 125°C
- Flammability : UL All tubing
- Standards
UL 224 (File No. E153276 : All tubing, 600V, 125°C)

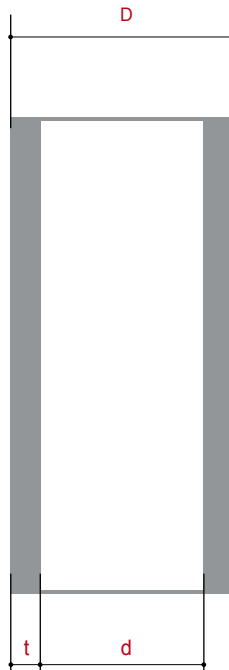
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 1.1kgf/mm ²	ASTM D 412 UL 224
		Elongation	Min. 200%	
	Aged	Tensile strength	Min. 0.8kgf/mm ²	ASTM D 412 UL 224 158°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @250°Cx4hrs	UL 224
	Low temperature flexibility		No crack @ -55°Cx4hrs	ASTM D 2671
	Secant modulus		Max. 173MPa	UL 224
Electrical	Dielectric Voltage withstand	Unaged	Min. 2,500V/1min.	UL 224
		Aged		158°C/168hrs
	Volume resistivity		Min. 1x10 ¹² Ω - cm	ASTM D 257
Chemical	Copper corrosion		No corrosion	UL 224 158°C/168hrs
	Copper stability elongation		No sign of degradation Min. 100%	
	Flammability		Pass	

Available Colors



Dimension

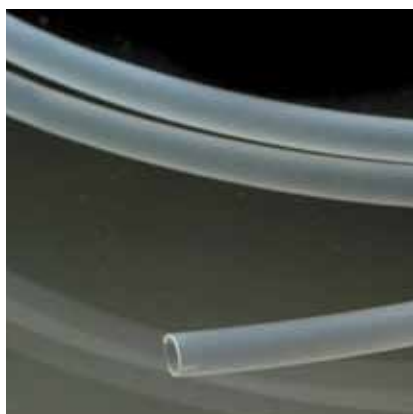
- Size range : 1 ~ 22 mm, special sizes are negotiable.



Size of Diameter	Nominal Inside Diameter d (mm)	Nominal Wall Thickness t (mm)	Nominal Outer Diameter D (mm)	Standard Spool Length (m)
1.0	1.20	0.60	2.40	200
3.0	3.20	0.60	4.40	200
3.5	3.60	0.60	4.80	200
4.0	4.50	0.60	5.70	200
5.0	5.30	0.65	6.60	100
6.0	6.40	0.60	7.60	100
8.0	8.50	0.60	9.70	100
9.0	9.50	0.60	10.70	100
10.0	10.50	0.60	11.70	100
11.0	11.50	0.60	12.70	100
12.0	12.50	0.60	13.70	100
13.0	13.50	0.60	14.70	100
14.0	14.50	0.80	16.10	100
16.0	16.50	0.90	18.30	100
18.0	18.50	0.90	20.30	50
20.0	20.50	1.00	22.50	50
22.0	22.70	1.10	24.90	50

TITR-600

Non Heat-shrinkable Semi-rigid Polyvinylidene Fluoride Tubing



Special Features

- It has excellent flame retardance and insulation.

Application

- Protective insulation and covering for wires.

Key Specifications

- Operating temperature range : -55°C ~ 175°C
- Flammability : UL VW-1 (Reference)

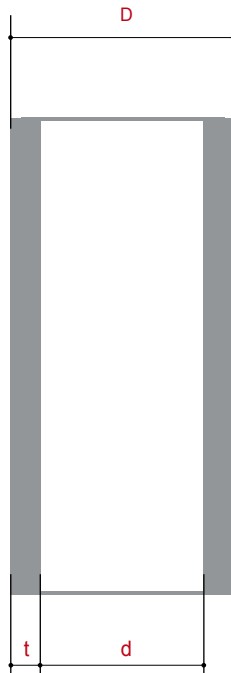
Properties			Values	Test Methods
Physical	Unaged	Tensile strength	Min. 3.52kgf/mm ²	ASTM D 412 AS23053
		Elongation	Min. 150%	
	Aged	Tensile strength	Min. 1.48kgf/mm ²	AS23053 250°C/168hrs
		Elongation	Min. 100%	
	Heat shock		Pass @300°Cx4hrs	AS23053
	Low temperature flexibility		No crack @ -55°Cx4hrs	AS23053
	Secant modulus		Min. 828MPa	ASTM D 882
Electrical	Dielectric strength		Size to 0.5" Min. 31.5kV/mm	ASTM D 2671
			Size over 0.5" Min. 23.6kV/mm	
	Volume resistivity		Min. 1x10 ¹³ Ω-cm	ASTM D 876
Chemical	Copper corrosion		No corrosion	UL 224 180°C/168hrs
	Copper stability elongation		No sign of degradation Min. 100%	
	Flammability		Pass	UL 224

Available Colors



Dimension

- Size range : 3.2 ~ 6 mm, special sizes are negotiable.



Size of Diameter	Nominal Inside Diameter d (mm)	Nominal Wall Thickness t (mm)	Nominal Outer Diameter D (mm)	Standard Spool Length (m)
Metric System (mm)	3.2	0.40	4.00	100
	3.5	0.40	4.30	100
	4.0	0.30	4.60	100
	4.8	0.30	5.40	100
	6.0	0.30	6.60	100

Cable End Cap

P/N : LS-CEC



Application

Protecting the unused cable end from the environmental effects.
Insulation on the unused end of electrical cable connected to supply.
The caps are suitable for full range of electrical cable of PVC, XLPE, and rubber jackets. Heat shrinkable end caps whose dimension will shrink to a predetermined size up on the application of heat above 125 deg. c.

Typical feature

Color : black
Coating type : flim from or spiral from.

*For pressurized telecom cables, the end caps are fitted with a non return air valve

LS P/N	Body ID		Full Length	Cable Range	Option	Carton Capacity
	S	R				
LS-CEC 1003	10	3	35	4 - 9		13,600
LS-CEC 1505	15	4.5	45	5 - 12		10,000
LS-CEC 2006	20	6.0	63	7 - 17	Valve	4,000
LS-CEC 2509	25	8.5	70	10 - 22		2,500
LS-CEC 4015	40	14.5	102	17 - 34		886
LS-CEC 6324	63	24	118	28 - 55		336
LS-CEC 7838	78	38	130	43 - 70		216
LS-CEC 10057	100	57	155	65 - 90		100
LS-CEC 12057	120	57	155	75 - 110		72
LS-CEC 14557	145	57	155	80 - 135		45

• S stands for *Supplied* within table above • R stands for *Recovered* within table above

Skirt & Shed

P/N : LS-CS



Application

Heat Shrinkable Skirts are used for extending the creepage path from the medium voltage cable termination, thereby saving the length of the cable and reducing the size of the switch gear cabinet required for this purpose. Skirt are suitable for termination of the complete range of electrical cables of XLPE and PILC types. Heat Shrinkable Sheds are used primarily to protect the crutch of the PILC3-core cable while installing and connecting an outdoor termination by restricting the individual cable cores from over bending away from the crutch

Typical feature

Color : orange red

The HV sheds & Skirts are electrically insulating, anti tracking, erosion resistant, weather proof and flame retardant

Single

LS P/N	HV Shed Diameter		Skirt Dia.	Neck-L
	S	R	O-R	L-S
LS-CS 13712	37.0	12.0	80.0	20.0
LS-CS 13716	37.0	16.0	90.0	25.0
LS-CS 15716	57.0	16.0	115.0	25.0
LS-CS 15725	57.0	25.0	125.0	30.0
LS-CS 17535	75.0	35.0	145.0	35.0

• S stands for *Supplied* within table above • R stands for *Recovered* within table above

Triple

LS P/N	HV Shed Diameter		Height	Neck-L
	S	R	L-R	M-S
LS-CS 13712	37.0	15.0	135.0	26.0
LS-CS 13716	45.0	23.0	165.0	28.0
LS-CS 15716	65.0	29.0	165.0	28.0

• US stands for *Supplied* within table above • R stands for *Recovered* within table above

Angle & Boots

P/N : LS-RAB / LS-SB



Application

Insulation and sealing for bushings in cable-end boxes intergral with switch-gear and transformers. The mastic sealant provides a water-tight environmental seal to the bushing. The Angles & Boots are also supplied as a part of heat shrinkable cable termination up to 36kV for operation in air-filled cable-end boxes, designed with reduced clearances for compound filling. the boots are designed to withstand surges induced during the operational life of the termination. Color of the MV boots is reddish brown. The Angles & Boots are electrically insulating, anti-tracking, UV resistant, water proof and flame retardant.

Type	LS P/N	Bushing-end Diameter		Cable-end Diameter		Length M	Length N	Full Length L
		R	S	R	S	R	R	R
LS-RAB	LS-BOOT R1		81.0	15.0	27.0	125.0	145.0	-
	LS-BOOT R2		81.0	15.0	48.0	125.0	145.0	-
	LS-BOOT R3		81.0	25.0	48.0	125.0	145.0	-
	LS-BOOT R4		95.0	25.0	70.0	125.0	145.0	-
LS-SB	LS-BOOT S1		81.0	18.0	35.0	140.0	45.0	220.0
	LS-BOOT S2		81.0	18.0	60.0	140.0	45.0	220.0

• S stands for *Supplied* within table above • R stands for *Recovered* within table above

Cable Breakout

P/N : LS-CB



Application

Insulation and sealing over the crutch of multi-core cables.
The hot melt adhesive provides a water tight environmental seal to the cable.
The LV breakouts are used as an intergral part of cable terminations up to 1kV.
Heat shrinkable low voltage breakouts whose dimension will shrink to a pre-determined size upon the application of heat above 125

Typical feature

Color : black
Finger No. : 2~4.
Hot melt : poly-amide based hot melt adhesive.

LS P/N	Finger #	Body ID		Finger ID		Full Length	Finger Length	Carton Capacity
		S	R	S	R			
LS-CB 23310	2	33	10	14	3	90	20	1,500
LS-CB 26022		60	22	24	6.7	120	35	560
LS-CB 33814		38	14	15	4	110	20	4,000
LS-CB 36022		60	22	26	8	185	45	224
LS-CB 38033	3	80	33	36	16	210	50	108
LS-CB 311047		110	47	48	20	225	75	52
LS-CB 312547		125	47	55	20	250	75	40
LS-CB 314054		140	54	62	27	240	65	30
LS-CB 43814	4	38	14	15	3.2	105	25	1,000
LS-CB 45014		50	14	15	3.2	105	25	780
LS-CB 45525		55	25	20	6	180	45	252
LS-CB 46525		65	25	25	6	180	45	200
LS-CB 47222		72	22	25	8.5	190	45	170
LS-CB 410033		100	33	35	14	215	50	80
LS-CB 412547		125	47	45	20	245	72	48

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Conductive Cable Breakout

P/N : LS-CCB



Application

The conductive cable breakout used as an intergral part of 3-core terminations up to 36kV and also 3-core cable joints up to 36kV

Typical feature

Color : black

Finger No. : 3.

Sealant : butyl rubber based mastic which is electrical insulating and water-proof.

LS P/N	Finger	Body ID		Finger ID		Recovered	Recovered	Recovered	Recovered
	#	S	R	S	R	Body T.	Finger T.	Full Length	Finger Length
LS-CCB 36022	3		22	24	3.75	3.75	3.00	185	45
LS-CCB 38033			33	36	4.00	4.00	3.25	210	50
LS-CCB 311047			47	48	3.80	3.80	3.00	225	75
LS-CCB 312547			47	55	4.25	4.25	3.50	250	75
LS-CCB 314054			54	62	4.00	4.00	2.50	240	65

• S stands for *Supplied* within table above • R stands for *Recovered* within table above

Cable Breakout for Medium Voltage

P/N : LS-CB-MV

Application

Heat shrink non-tracking medium voltage breakouts used for insulation and sealing over the crutch of multi-core cable up to 36kV

Typical feature

Color : brown

Finger No. : 3.

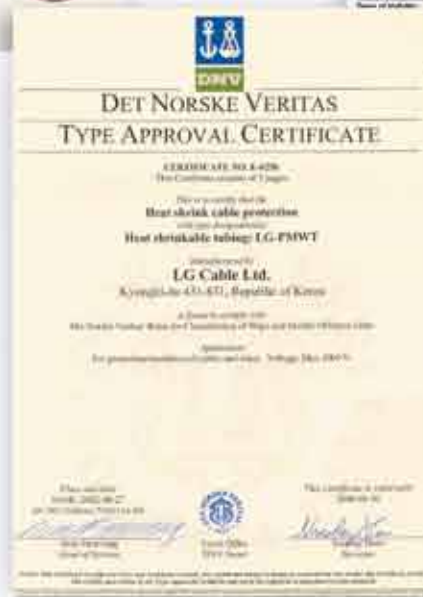
Sealant : butyl rubber based mastic which is electrical insulating and water-proof and anti-tracking



LS P/N	Finger #	Body ID		Finger ID		Recovered Body T.	Recovered Finger T.	Recovered Full Length	Recovered Finger Length
		S	R	S	R				
LS-CCB 36022	3	60	22	24	3.75	3.75	3.00	185	45
LS-CCB 38033		80	33	36	4.00	4.00	3.25	210	50
LS-CCB 311047		110	47	48	3.80	3.80	3.00	225	75
LS-CCB 312547		125	47	55	4.25	4.25	3.50	250	75
LS-CCB 314054		140	54	62	4.00	4.00	2.50	240	65

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Quality Certificates



We do what it takes to earn quality certifications like ISO 9001, ISO/TS 16949 and ISO 14001, which sets standards for process control and manufacturing flow.

Your No.1 Creative Partner

LS Cable & System is Everywhere!

From power plants to industrial field, mammoth buildings and factories to Automotives, ships, railway vehicles and houses, the technology of LS Cable & System is shining brightly in every corner of the world.

LS Cable & System

BUSINESS AREAS

Energy

- Extra High Voltage Cable / HVDC Cable
- Super Conducting Cable
- Submarine Cable
- High Capacity Conductor
- Flame Retardant Water Resistance Cable
- Bus Duct



Telecommunication

- Optical Cable
- Structured Cabling System
- RF Feeder System

LS Cable & System supplies various cables and materials used for power grids and communication networks around the world across all industries providing its top class technology and excellent quality. The company has also developed state of the art products, such as superconductors, HVDC and submarine cables that will lead the future energy industry

Industrial Materials

- Copper Rod
- Magnetic Wire



Industrial Cable

- Industrial Devices & FA Cable
- Automotive Wire & Cable, Tubes
- Marine & Offshore Cable
- Railway & Rolling Stock Cable
- Wind Power & Photovoltaic Cable

GLOBAL NETWORK

More than 60 Factories,
Sales and Production Sites
in 20 Countries.

- Factory
- Sales office
- Branch office

● ● **United States**
LSCA FORT LEE
LSCUS TARBORO

● **Mexico**
MEXICO CITY

KOREA



Gumi Plant

EHV / MV / LV cable
UTP, Coaxial cable
SCR, Magnet wire
Overhead cable, Bus duct



Indong Plant

Optical fiber
Optical cable



Donghae Plant

Submarine cable
Industrial specialty cable

CHINA



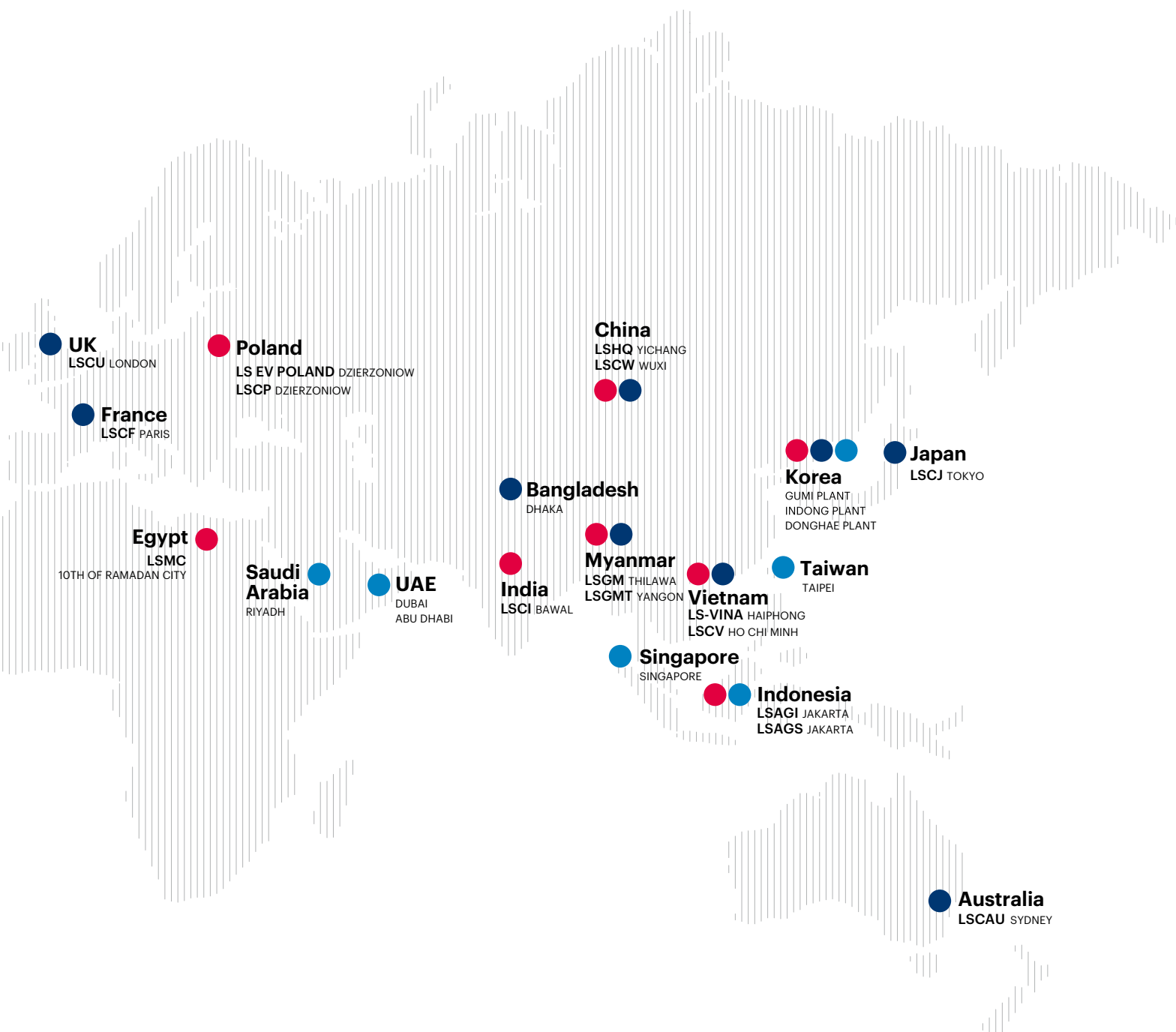
LSHQ(Yichang)

EHV / MV / LV cable
Industrial specialty cable



LSCW(Wuxi)

Industrial devices cable
Automotive cable
Harness & module
Aluminum, Bus duct



VIETNAM



LS-VINA(Haiphong)

EHV / MV / LV cable
SCR, ACSR
Overhead cable



LSCV(HO Chi Minh)

MV / LV cable
UTP, Optical cable
Overhead cable

INDIA



LSCI(Bawal)

EHV / MV / LV cable
Coaxial cable
Overhead cable

USA



LSCUS(Tarboro)

MV / LV cable
Control, Instrument cable

POLAND



LS EV Poland./LSCP (Dzierzoniow)

Automotive battery components
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