Sleeving

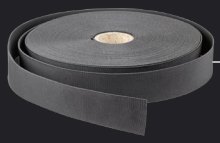
Sleeving



ION-Guard – Expandable 50



ION-Guard – Guard-Shield 53



ION-Guard – Textile 54



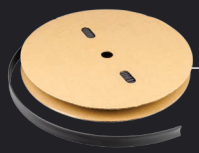
PVC Tubing 56



Spiral Wrap 57



Heatshrink – Standard Wall 58



Heatshrink – Diesel Resistant 61



Heatshrink – Adhesive Lined 62

Sleeving

ION-Guard – Expandable

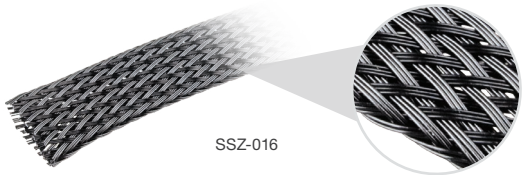


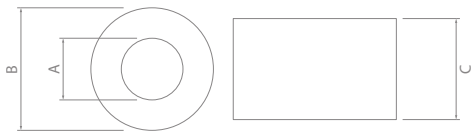
- Expandable and easy to apply over irregular shapes.
- Wide range of materials & sizes available.
- Broad operating temperatures.
- Open weave construction allows for complete drainage, excludes Guard-Sleeve.

Approvals : RoHS

Continuous lengths can not be guaranteed due to manufacturing limitations.







ION-Guard™

Guard-Flex

Material :	Polyester
Approvals :	UL, RoHS, REACH, Halogen-free
Cutting Tool :	Hot Knife
Melting Point :	240 ±10°C
Flammability :	VW-1
Operating Temperature :	-50°C to 150°C

Industry Standard

Polyester expandable braided sleeving is flame retardant and halogen-free. It offers durable abrasion resistance in a wide range of industrial applications. The open weave construction of the expandable range allows for easy installation over hoses and cables, including with bulky or large connectors.

When totally expanded, the sleeving can reach at least 1.5 times the initial dimension.

Guard-Flex

Roll Length 25m	Roll Length 100m	Expanded Range A – B (mm)	Normal Size C (mm)
SSZ-003	—	1 – 6	3
SSZ-006	**SSZ-006-100**	3 – 9	6
SSZ-008	**SSZ-008-100**	5 – 16	8
SSZ-010	—	7 – 19	10
SSZ-012	—	8 – 24	12
SSZ-016	—	10 – 27	16
SSZ-025	—	18 – 35	25
SSZ-032	—	20 – 50	32
SSZ-045	—	35 – 75	45

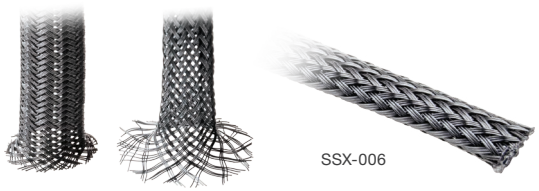
Guard-Flex – Anti-Fray

Material : Polyester
Approvals : UL, RoHS
Cutting Tool : Hot Knife, Scissors
Melting Point : 240 ±10°C
Flammability : VW-1
Operating Temperature : -50°C to 150°C

Anti-fraying

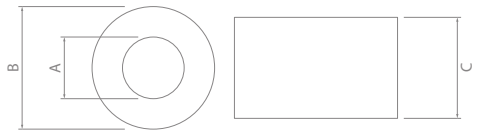
Cold Cut

With a softer finish polyester Guard-Flex allows cutting with common scissors without causing obvious fraying, this can be more convenient in situations where access to a hot knife may be limited. It also provides the same excellent anti-abrasion protection as the standard Guard-Flex sleeving.



SSX-006

Cutting with common scissors does not cause obvious fraying



Guard-Flex – Anti-Fray

Roll Length 25m	Expanded Range A – B (mm)	Normal Size C (mm)
SSX-003	1 – 5	3
SSX-006	3 – 8	6
SSX-008	5 – 10	8
SSX-012	8 – 14	12
SSX-016	10 – 18	16
SSX-025	18 – 28	25
SSX-032	20 – 35	32

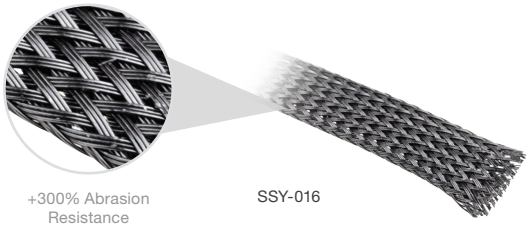
Guard-Gorilla – High Anti-Abrasion

Material : Polyester
Approvals : UL, RoHS, REACH, Halogen-free
Cutting Tool : Hot Knife
Melting Point : 240 ±10°C
Flammability : VW-1
Operating Temperature : -50°C to 150°C

+300% Abrasion Resistance

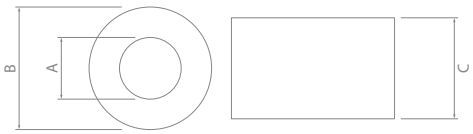
Featuring an abrasion resistance 300% more than standard polyester expandable sleeving. Ideal in situations where components are in particularly hazardous positions. Easy application whilst still providing exceptional mechanical protection.

When totally expanded, the sleeving can reach at least 1.5 times the initial dimension.



+300% Abrasion Resistance

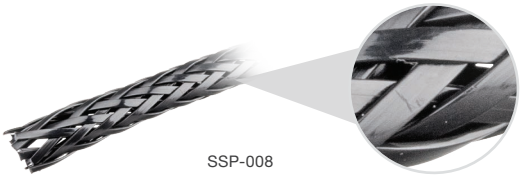
SSY-016

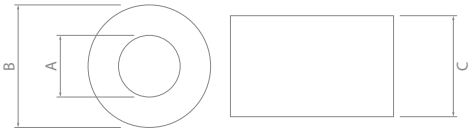


Guard-Gorilla – High Anti-Abrasion

Roll Length 25m	Roll Length 100m	Expanded Range A – B (mm)	Normal Size C (mm)
SSY-003	—	1 – 6	3
SSY-006	**SSY-006-100**	3 – 9	6
SSY-008	**SSY-008-100**	5 – 16	8
SSY-012	**SSY-012-100**	8 – 24	12
SSY-016	—	10 – 27	16
SSY-025	—	18 – 35	25
SSY-032	—	20 – 50	32

Sleeving





Guard-Tough – Nylon Flat Filament

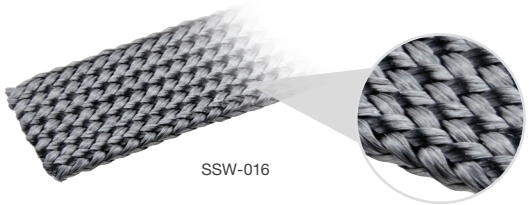
Material :	Polyamide 6.6
Approvals :	RoHS
Cutting Tool :	Hot Knife
Melting Point :	256 ±5°C
Flammability :	UL 94V-2
Operating Temperature :	-60°C to 160°C

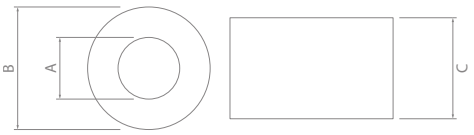
Tough, Wide Filaments

Constructed from tough and resilient Nylon 6.6 flat filaments exceeding the durability of other plastic sleeving without losing the attractive look and flexibility. Uniquely shaped monofilament provides a firm and smooth surface reducing the chance of snags when dragged over rough objects.

Guard-Tough – Nylon Flat Filament

Roll Length – 25m	Expanded Range A – B (mm)	Normal Size C (mm)
SSP-006	4 – 9	6
SSP-008	5 – 12	8
SSP-012	9 – 16	12
SSP-019	16 – 25	19
SSP-032	25 – 42	32





Guard-Sleeve – Nylon Multifilament

Material :	Polyamide
Approvals :	RoHS
Cutting Tool :	Hot Knife
Melting Point :	230 ±10°C
Flammability :	UL 94V-2
Operating Temperature :	-60°C to 125°C

Tight Weave

Braided from tight woven nylon multifilament yarn, Guard-Sleeve is an excellent option to help protect and improve the appearance of wires and cables. Offering excellent flexibility, high abrasion resistance whilst protecting from acids and most alkalis.

Guard-Sleeve – Nylon Multifilament

Roll Length – 25m	Expanded Range A – B (mm)	Normal Size C (mm)
SSW-006	4 – 7	6
SSW-008	5 – 9	8
SSW-012	8 – 13	12
SSW-016	10 – 17	16
SSW-023	15 – 24	23



Accessories – Electric Knife

Part No.	Suitable For
HT-19	Guard-Flex, Guard-Gorilla, Guard-Tough, Guard-Sleeve, and Guard-Wrap (Textile)

- Withstands temperatures of up to 200°C.
- Increased dielectric resistance.
- Silicone coated, non-alkali fiberglass sleeving.
- Flame and abrasion resistant.
- Smooth finish with high flexibility.
- Ideal in applications where high or low temperature protection is required or high voltage installs.
- All supplied in 25m rolls.

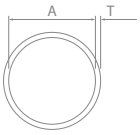


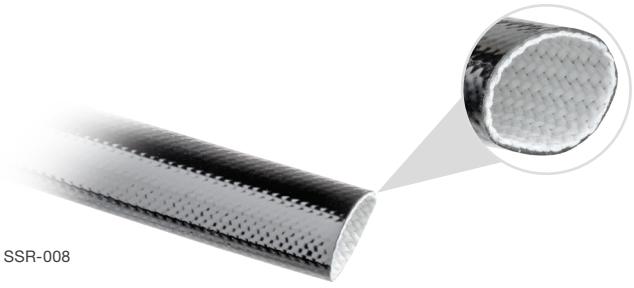
SSR-020

Sleeving Material :	Fiberglass Fiber
Coating Material :	Silicone
Approvals :	UL, RoHS
Cutting Tool :	Scissors
Breakdown Voltage :	4.0KV
Flammability :	VW-1
Operating Temperature :	-60°C to 200°C
Roll Lengths :	25m

Continuous lengths can not be guaranteed due to manufacturing limitations.

ION-Guard™





SSR-008

Guard-Shield – High Temp

Roll Length – 25m	Inside Ø A (mm)	Wall Thickness T (mm) @ 4KV
SSR-004	4	0.50 ±0.05
SSR-006	6	0.55 ±0.05
SSR-008	8	0.60 ±0.05
SSR-010	10	0.70 ±0.05
SSR-012	12	0.70 ±0.05
SSR-015	15	0.70 ±0.05
SSR-020	20	0.70 ±0.05
SSR-025	25	0.70 ±0.05

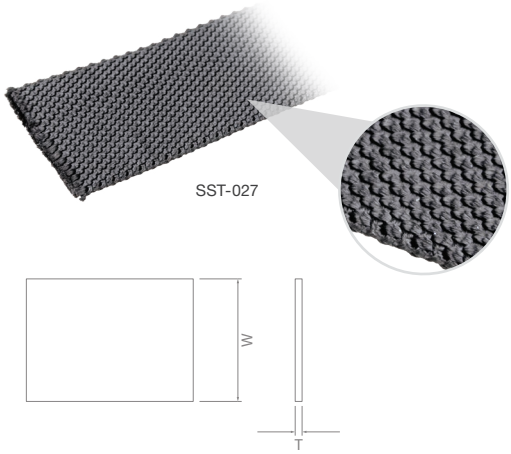


- Range of materials & sizes available.
- Broad operating temperatures.
- Tight textile weaves.
- All supplied in 25m rolls.
- Extremely flexible & easy to apply over irregular shapes.
- Salt, oil, most fuels, solvent and abrasion resistant.

Approvals : RoHS
Roll Lengths : 25m

Continuous lengths can not be guaranteed due to manufacturing limitations.

ION-Guard™



Guard-Weave

Material : Polyamide
Approvals : RoHS, ISO 6945, MSHA
Cutting Tool : Scissors
Melting Point : 256 ±5°C
Wall Thickness : 1mm
Operating Temperature : -60°C to 125°C

Tight Weave

A soft but extremely tough textile sleeve made from a nylon multifilament. With its soft finish Guard-Weave is an ideal option for protecting componentry within, and surrounding, the sleeving. The tight woven construction provides excellent abrasion resistance and protection from hydraulic oil leaks and spills.

Guard-Weave

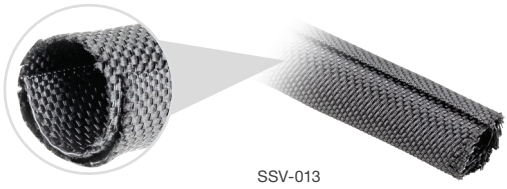
Roll Length – 25m	Inside Ø (mm)	Flat Width (mm) W	Wall Thickness (mm) T
SST-027	17	27	1
SST-036	23	36	1
SST-042	27	42	1

Guard-Wrap – Self-Closing Sleeving

Material : Polyester Monofilament & Multifilament
Approvals : RoHS, Halogen-free
Cutting Tool : Hot Knife
Melting Point : 240 ±10°C
Flammability : DIN5510, BS6853
Operating Temperature : -50°C to 150°C

Self-closing

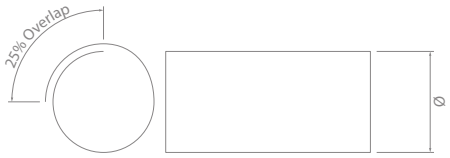
Self-closing sleeve is a non-expandable sleeving woven from monofilament and multifilament warped polyester. Guard-Wrap provides a lightweight, cost-effective and tough solution for the protection of a wide range of components. Its inherent flexibility allows it to bend, coil and conform to irregular shapes, while its open design allows it to be installed on completed assemblies.



SSV-013



Open design allows easy installation or access to completed assemblies



For Cable Insertion Tools see page 174



Guard-Wrap – Self-Closing Sleeving

Roll Length – 25m	Inside Ø (mm)	Max. Bundle Ø (mm)
SSV-005	5	6
SSV-008	8	9
SSV-010	10	11
SSV-013	13	14
SSV-016	16	17
SSV-019	19	20
SSV-025	25	27

Guard-Shrink – Heat Shrinkable

Material : Polyolefin & Polyester Multifilament
Approvals : RoHS, Halogen-free
Cutting Tool : Scissors
Shrink Temperature : 120°C
Shrink Ratio : 2:1
Operating Temperature : -40°C to 125°C

Heat Shrinkable

Heat shrinkable braided sleeving consists of a polyester multifilament and special modified polyolefin filament, will shrink when appropriately heated. This unique woven construction makes Guard-Shrink extremely flexible and easy to install on hoses with irregular shapes. Suitable in rough environments, providing excellent abrasion resistance and noise reduction.



SSU-025

Partially recovered example shown

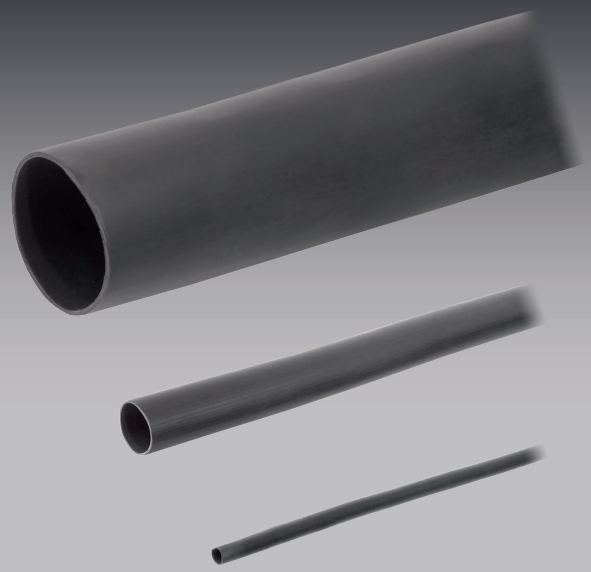


Guard-Shrink – Heat Shrinkable

Roll Length – 25m	Ø (mm) A	Recovered Ø (mm) B
SSU-010	10	5
SSU-020	20	10
SSU-025	25	12.5
SSU-030	30	15
SSU-034	34	16

Sleeving

PVC Tubing

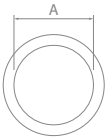


- General all round harness protection.
- Self-extinguishing fire retardant PVC.
- Wide range of lengths & sizes available.

Material :		Flexible V75 Cable Grade PVC
Burning Behaviour :		Self-extinguishing
Hardness :		Shore A 92
Operating Temperature :	Continuous	75°C



PVC8/25





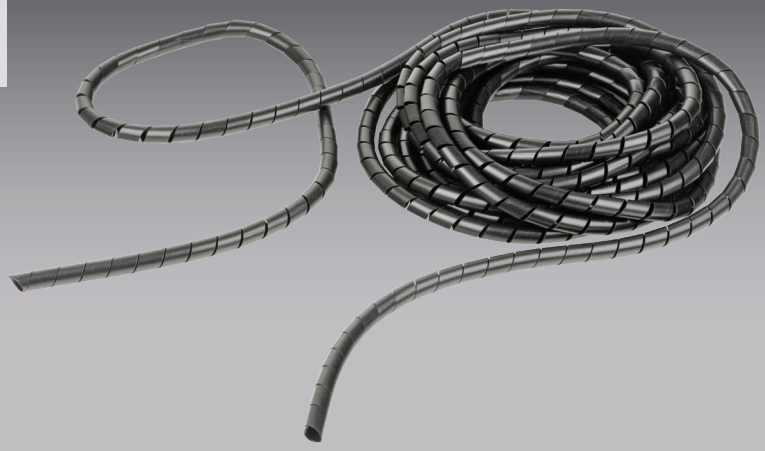
PVC35/50

PVC Tubing

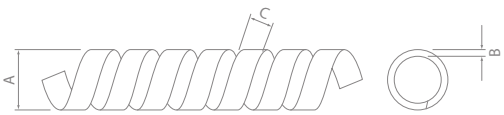
Roll Length – 25m	Roll Length – 50m	Roll Length – 100m	Roll Length – 200m	Roll Length – 250m	Inside Ø – A (mm)	Wall Thickness (mm)
PVC4/25	–	–	–	**PVC**4/250	4	0.5
PVC6/25	–	–	**PVC**6/200	–	6	0.5
PVC8/25	–	–	**PVC**8/200	–	8	0.65
PVC10/25	–	–	**PVC**10/200	–	10	0.65
PVC12/25	–	**PVC**12/100	–	–	12	0.85
PVC16/25	–	**PVC**16/100	–	–	16	0.85
–	**PVC**20/50	**PVC**20/100	–	–	20	0.85
–	**PVC**25/50	–	–	–	25	0.85
–	**PVC**30/50	–	–	–	30	1.0
–	**PVC**35/50	–	–	–	35	1.0

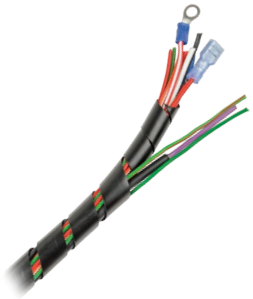
Spiral Wrap

- Light-weight and easy to use harness protection system.
- Excellent electrical, abrasive and binding strength.
- Flexible construction enables the easy routing of wiring looms.
- Durable and reusable.



Material : Nylon





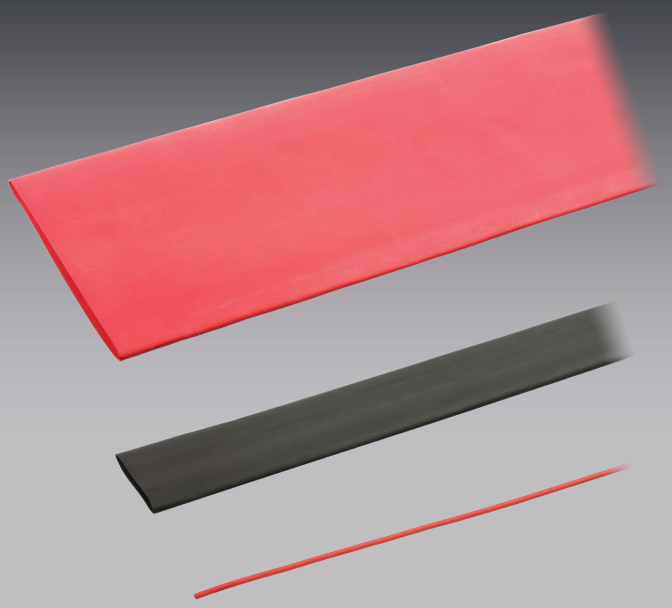


CTC-12B/10

Spiral Wrap

Roll Length – 10m	Wrapping Range (mm)	Outside Ø – A (mm)	Wall Thickness – B (mm)	Wrap Width – C (mm)
CTC-3B/10	1.5 – 10	3	0.5	4.7
CTC-6B/10	4 – 15	6	0.6	6.7
CTC-12B/10	9 – 32	12	0.85	15.0
CTC-16B/10	12 – 35	16	1.0	15.5
CTC-24B/10	20 – 100	24	1.3	21.5

Heatshrink – Standard Wall



- Available in assortment kits, cut length packs, rolls and dispenser boxes.
- Reliable and cost-effective for standard-duty electrical applications.
- 2:1 shrink ratio covers wide range of applications.
- Resistant to decay, chemicals, copper corrosion and ultra violet rays.
- Lightweight & flexible.
- Custom lengths available for all 2:1 Standard Wall Heatshrink.
- Other colours available on request, lead times apply.

Material :	Polyolefin
Shrink Temperature :	95°C
Dielectric Strength :	>20kV/mm
Operating Temperature :	-55°C to 125°C

Standard Wall Heatshrink Specifications

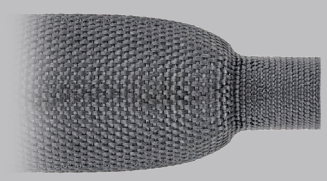
Part No. Prefix	Diameter (mm)	Recovered Diameter (mm)	Recovered Wall Thickness (mm)
HSX1.5	1.5	0.75	0.36
HSX2.5	2.5	1.2	0.44
HSX3.5	3.5	1.7	0.44
HSX5	5	2.5	0.56
HSX7	7	3.5	0.56
HSX10	10	5	0.56
HSX13	13	6.5	0.69

Part No. Prefix	Diameter (mm)	Recovered Diameter (mm)	Recovered Wall Thickness (mm)
HSX20	20	10	0.78
HSX25	25	12.5	0.86
HSX30	30	15	0.86
HSX40	40	20	0.96
HSX50	50	25	0.96
HSX76	76	38	1.27
HSX100	100	50	1.4

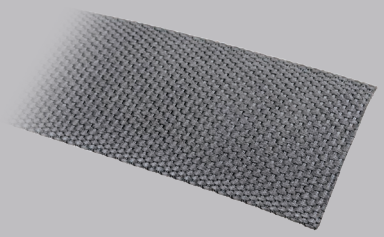
Guard-Shrink

Guard-Shrink is a heat shrinkable braided sleeving consisting of a polyester multifilament and special modified polyolefin filament, it will shrink when appropriately heated.

This unique woven construction makes Guard-Shrink extremely flexible and easy to install on hoses with irregular shapes. Suitable in rough environments, providing excellent abrasion resistance and noise reduction.



Guard-Shrink found on page 55.



ION-Guard™





2:1 Heatshrink – Standard Wall – 40mm/50mm Assortment Kit

Part No.	Contents:			
HS-KIT	20 x HS10 (Black) 40 x HS10 (Red)	20 x HS13 (Black) 40 x HS13 (Red)	10 x HS20 (Black) 20 x HS20 (Red)	10 x HS25 (Black) 20 x HS25 (Red)

Custom lengths available for all 2:1 Standard Wall Heatshrink



2:1 Heatshrink – Standard Wall – 40mm/50mm Lengths

Red	Black	Diameter (mm)	Cut Length (mm)	Pack Qty
HS7-40RED/1250	**HS7-40BLK/1250**	7	40	1250
HS10-40RED/40	**HS10-40BLK/40**	10	40	40
HS10-40RED/1250	**HS10-40BLK/1250**	10	40	1250
HS13-40RED/40	**HS13-40BLK/40**	13	40	40
HS13-40RED/1250	**HS13-40BLK/1250**	13	40	1250
HS20-40RED/20	**HS20-40BLK/20**	20	40	20
HS20-40RED/1250	**HS20-40BLK/1250**	20	40	1250
HS25-50RED/10	**HS25-50BLK/10**	25	50	10
HS25-50RED/1000	**HS25-50BLK/1000**	25	50	1000





2:1 Heatshrink – Standard Wall – Dispenser Boxes

Red	Black	Diameter (mm)	Roll Length (m)
HSD2.5RED/20	**HSD2.5BLK/20**	2.5	20
HSD3.5RED/20	**HSD3.5BLK/20**	3.5	20
HSD5RED/10	**HSD5BLK/10**	5	10
HSD7RED/10	**HSD7BLK/10**	7	10
HSD10RED/10	**HSD10BLK/10**	10	10
HSD13RED/5	**HSD13BLK/5**	13	5
HSD20RED/5	**HSD20BLK/5**	20	5
HSD25RED/5	**HSD25BLK/5**	25	5

Sleeving



2:1 Heatshrink – Standard Wall – 1.2m Lengths

Red	Black	Diameter (mm)	Red	Black	Clear	Diameter (mm)
HS1.5RED	HS1.5BLK	1.5	HS13RED	HS13BLK	HS13CLR NEW	13
HS2.5RED	HS2.5BLK	2.5	HS20RED	HS20BLK	—	20
HS3.5RED	HS3.5BLK	3.5	HS25RED	HS25BLK	HS25CLR NEW	25
HS5RED	HS5BLK	5	HS40RED	HS40BLK	—	40
HS7RED	HS7BLK	7	HS50RED	HS50BLK	—	50
HS10RED	HS10BLK	10	HS76RED	HS76BLK	—	76

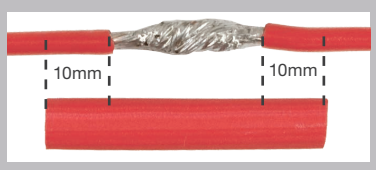


Custom lengths available for all 2:1 Standard Wall Heatshrink

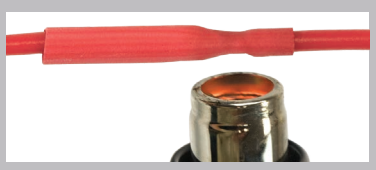
2:1 Heatshrink – Standard Wall – Rolls

Red	Black	Clear	Blue	Diameter (mm)	Length (m)
HSR1.5RED/200	HSR1.5BLK/200	—	—	1.5	200
HSR2.5RED/200	HSR2.5BLK/200	—	—	2.5	200
HSR3.5RED/200	HSR3.5BLK/200	—	—	3.5	200
HSR5RED/100	HSR5BLK/100	HSR5CLR/100 NEW	—	5	100
—	HSR20BLK/100	—	—	20	100
HSR7RED/50	HSR7BLK/50	—	—	7	50
HSR10RED/50	HSR10BLK/50	—	—	10	50
HSR13RED/50	HSR13BLK/50	—	—	13	50
HSR20RED/50	HSR20BLK/50	—	—	20	50
HSR25RED/50	HSR25BLK/50	—	HSR25BLU/50 NEW	25	50
HSR30RED/50	HSR30BLK/50	—	HSR30BLU/50 NEW	30	50
HSR40RED/25	HSR40BLK/25	—	—	40	25
HSR50RED/25	HSR50BLK/25	—	HSR50BLU/25 NEW	50	25

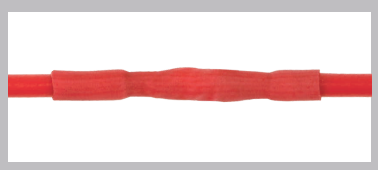
Heatshrink Application



Cut length of heatshrink allowing for approximately 10mm of overlap.



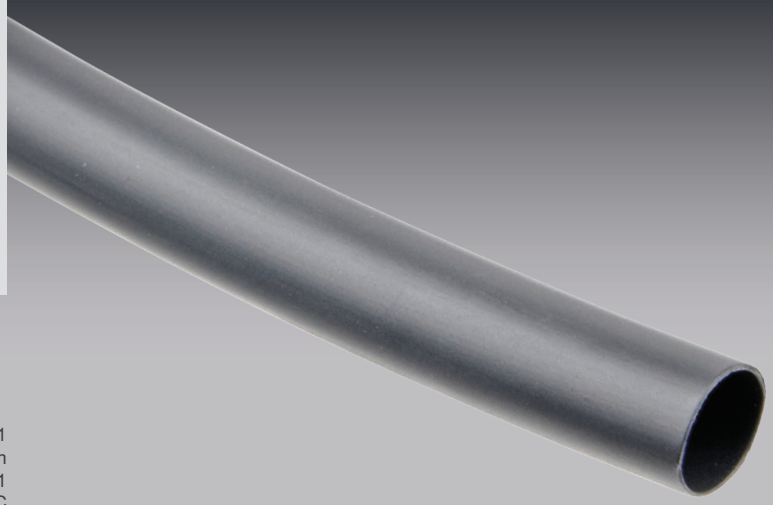
Apply heat thoroughly to the entire strip using hot air gun or similar tool.



Depending on the type of heatshrink used, the shrink ratio will be at least 2:1.

Diesel Resistant

- Resistance to chemicals, diesel fuels, hydraulic fluids and lubricating oils.
- 2:1 shrink ratio covers wide range of applications.
- 1.2m lengths or rolls available.
- Flame retarding and self extinguishing.
- Dielectric strength 15kV/mm.
- Broad operating temperature range -75°C to 150°C.
- Meets AMS-DTL-23053/16.



Shrink Ratio :	2:1
Dielectric Strength :	15kV/mm
Flammability :	UL224 VW1
Operating Temperature :	-75°C to 150°C





2:1 Heatshrink – Diesel Resistant – 1.2m Lengths

Part No.	DR-25-1/8	DR-25-3/16	DR-25-1/4	DR-25-3/8	DR-25-1/2	DR-25-3/4
Ø (mm)	3.2	4.8	6.4	9.5	12.7	19.1
Recovered Ø (mm)	1.6	2.4	3.2	4.8	6.4	9.5

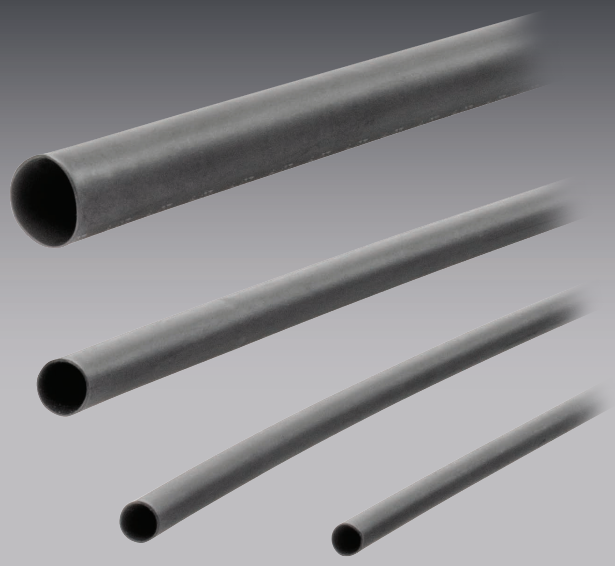


2:1 Heatshrink – Diesel Resistant – Rolls

Part No.	DRR-25-1/8	DRR-25-3/16	DRR-25-1/4	DRR-25-3/8	DRR-25-1/2	DRR-25-3/4
Ø (mm)	3.2	4.8	6.4	9.5	12.7	19.1
Recovered Ø (mm)	1.6	2.4	3.2	4.8	6.4	9.5
Roll Length (m)	200	100	100	50	25	25

Sleeving

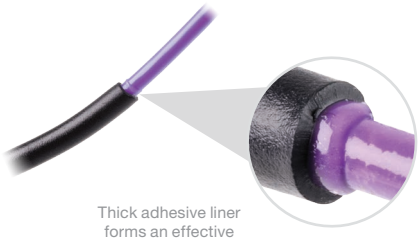
Heatshrink – Adhesive Lined



- Available in assortment kits, cut length packs and rolls.
- Adhesive lining for ultra secure connection from cable to connector & protection against harsh environment.
- Wide range of shrink ratios and sizes.
- Flame retardant & mechanically tough.
- Lightweight & flexible.
- Custom lengths available for all 3:1 Dual Wall Heatshrink.

Material :		Polyolefin
Shrink Temperature :		95°C
Dielectric Strength :		>15kV/mm
	Medium Wall	>20kV/mm
Operating Temperature :	Dual Wall	-55°C to 80°C
	Medium Wall	-55°C to 110°C





Thick adhesive liner forms an effective barrier against ingress

3:1 Dual Wall Heatshrink Specifications

Part No. Prefix	Diameter (mm)	Recovered Diameter (mm)	Recovered Wall Thickness (mm)
DW3	3	1	0.95
DW4.8	4.8	1.6	1.1
DW6	6	2	1.15
DW9	9	3	1.3
DW12	12	4	1.4
DW18	18	6	1.6
DW24	24	8	1.9
DW39	39	13	2.5

Recovered wall thickness excludes adhesive





3:1 Dual Wall Heatshrink – 40mm/50mm Assortment Kit

Part No.	Contents:			
DW-KIT	20 x DW9 (Black) 20 x DW9 (Red)	20 x DW12 (Black) 20 x DW12 (Red)	20 x DW18 (Black) 20 x DW18 (Red)	20 x DW24 (Black) 20 x DW24 (Red)



Custom lengths available for all 3:1 Dual Wall Heatshrink

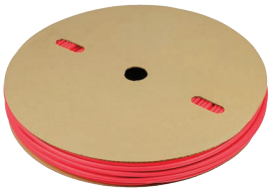
3:1 Dual Wall Heatshrink – 40mm/50mm/70mm Lengths

Red	Black	Diameter (mm)	Cut Length (mm)	Pack Qty
DW9-40RED/20	DW9-40BLK/20	9	40	20
DW9-40RED/1250	DW9-40BLK/1250	9	40	1250
DW12-40RED/20	DW12-40BLK/20	12	40	20
DW12-40RED/625	DW12-40BLK/625	12	40	625
DW18-40RED/10	DW18-40BLK/10	18	40	10
DW18-40RED/625	DW18-40BLK/625	18	40	625
DW24-50RED/5	DW24-50BLK/5	24	50	5
DW24-50RED/500	DW24-50BLK/500	24	50	500
DW24-70RED/357	DW24-70BLK/357	24	70	357



3:1 Dual Wall Heatshrink – 1.2m Lengths

Red	Black	Diameter (mm)	Red	Black	Clear	Diameter (mm)
DW3RED	DW3BLK	3	DW12RED	DW12BLK	—	12
DW4.8RED	DW4.8BLK	4.8	DW18RED	DW18BLK	—	18
DW6RED	DW6BLK	6	DW24RED	DW24BLK	DW24CLR NEW	24
DW9RED	DW9BLK	9	DW39RED	DW39BLK	DW39CLR NEW	39



3:1 Dual Wall Heatshrink – Rolls

Red	Black	Diameter (mm)	Length (m)
DWR3RED/200	DWR3BLK/200	3	200
DWR4.8RED/100	DWR4.8BLK/100	4.8	100
DWR6RED/100	DWR6BLK/100	6	100
DWR9RED/50	DWR9BLK/50	9	50
DWR12RED/25	DWR12BLK/25	12	25
DWR18RED/25	DWR18BLK/25	18	25
DWR24RED/25	DWR24BLK/25	24	25
DWR39RED/25	DWR39BLK/25	39	25

Sleeving



3.5:1 Medium Wall Heatshrink – 1.2m Lengths

Part No.	MW12	MW22	MW27	MW35	MW40	MW56	MW72
Ø (mm)	12	22	27	35	40	56	72
Recovered Ø (mm)	3	6	6	9	12	17	22
Recovered Wall Thickness (mm)	1.5	2.5	2.5	2.5	2.5	2.5	2.5

Recovered wall thickness excludes adhesive.

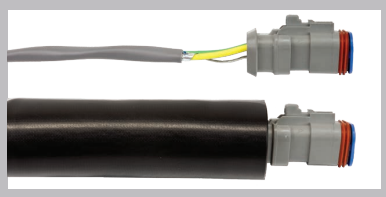


4:1 Dual Wall Heatshrink – 1.2m Lengths

Part No.	ES2000-1	ES2000-2	ES2000-3	ES2000-4
Ø (mm)	5.7	7.5	11	18
Recovered Ø (mm)	1.3	1.7	2.4	4.5
Recovered Wall Thickness (mm)	0.7	0.8	0.9	1.0

Recovered wall thickness excludes adhesive.

Adhesive Lined Heatshrink for Strain Relief Applications



Place heatshrink over cable as shown.



Apply heat starting at the connector end.



Shrinks down to approximately 1/3 - 1/4 of original size.