





Sleeving

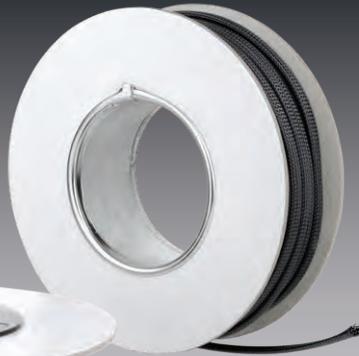
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Sleeving

ION-Guard – Expandable

NEW

SSX-006



SSW-016



- Expandable and easy to apply over irregular shapes.
- Wide range of materials & sizes available.
- Broad operating temperatures.
- All supplied in 25m rolls.
- Open weave construction allows for complete drainage, excludes Guard-Sleeve.

Approvals :
Roll Lengths :

RoHS
25m

Continuous lengths can not be guaranteed due to manufacturing limitations.



ION-Guard™

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.

Totally expanded the sleeving can reach at least 1.5 times the initial dimension.

Guard-Flex **NEW**

Roll Length – 25m	Expanded Range (mm)	Normal Size (mm)
	A – B	C
SSZ-003	1 – 6	3
SSZ-006	3 – 9	6
SSZ-008	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

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

Anti-fraying

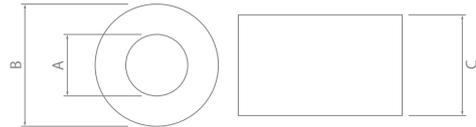
Cold Cut

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.



Cutting with common scissors does not cause obvious fraying



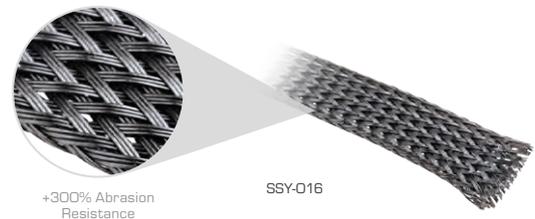
Guard-Flex – Anti-Fray NEW

Roll Length – 25m	Expanded Range (mm)	Normal Size (mm)
	A – B	C
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

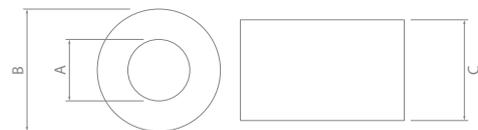
Material : Polyester
 Approvals : UL, RoHS, REACH, Halogen Free
 Cutting Tool : Hot Knife
 Melting Point : 240 ±10°C
 Flammability : VVW-1
 Operating Temperature : -50°C to 150°C

+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. Totally expanded the sleeving can reach at least 1.5 times the initial dimension.



+300% Abrasion Resistance

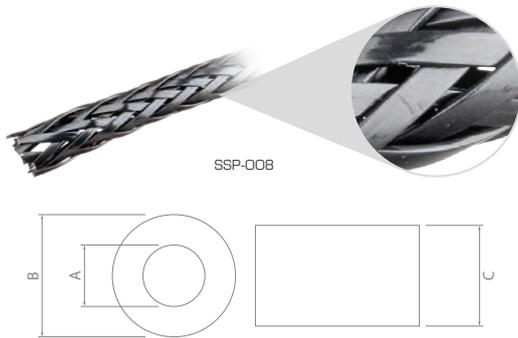


Guard-Gorilla – High Anti-Abrasion NEW

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



Sleeving



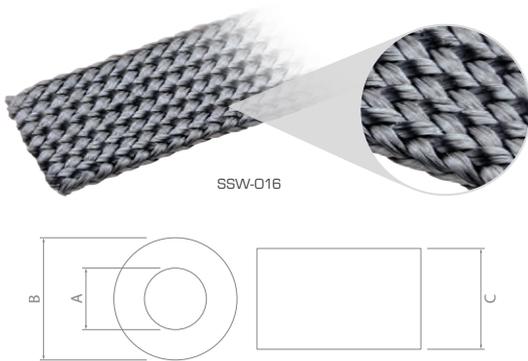
Material : Polyamide 6.6
 Approvals : RoHS
 Cutting Tool : Hot Knife
 Melting Point : 256 ±5°C
 Flammability : UL 94V-2
 Operating Temperature : -60°C to 160°C

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 NEW

Roll Length – 25m	Expanded Range (mm)	Normal Size (mm)
	A – B	C
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



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 NEW

Roll Length – 25m	Expanded Range (mm)	Normal Size (mm)
	A – B	C
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.	Used with
HT-19	Guard-Flex, Guard-Gorilla, Guard-Sleeve, Guard-Wrap, Guard-Tough

- 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.

NEW

ION-Guard – Guard-Shield



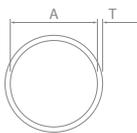
SSR-020

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 **NEW**

Roll Length – 25m	Inside Ø (mm) A	Wall Thickness @ 4KV T
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



Sleeving

ION-Guard – Textile

NEW



- Range of materials & sizes available.
- Broad operating temperatures.
- Tight textile weaves.
- All supplied in 25m rolls.

Specific ranges feature:

- Extremely flexible & easy to apply over irregular shapes
- Salt, oil, most fuels, solvent and abrasion resistant

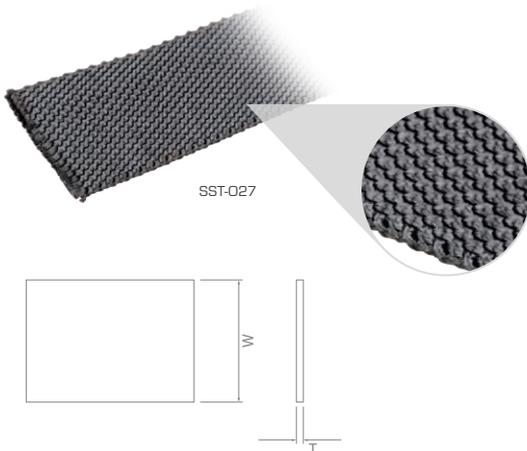
Approvals :
Roll Lengths :

RoHS
25m

Continuous lengths can not be guaranteed due to manufacturing limitations.



ION-Guard™



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.

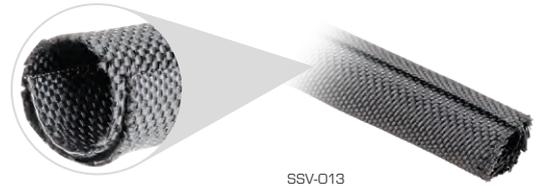
Guard-Weave **NEW**

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

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

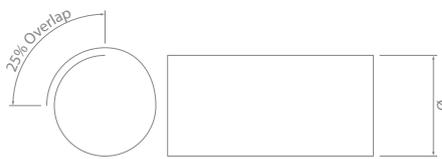
Self-closing sleeve is a non-expandable sleeving woven from monofilament and multifilament warped polyester. Guard-Wrap provides a lightweight, cost-effective and tough solution for the protection of a wide range of components. Its inherent flexibility allows it to bend, coil and conform to irregular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



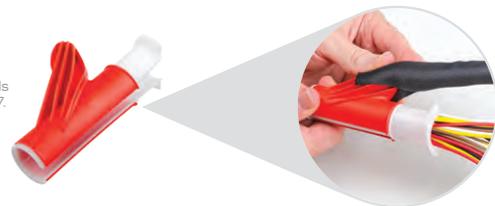
SSV-013



Open design allows easy installation or access to completed assemblies



For Cable Insertion Tools see page 157.



Guard-Wrap – Self-Closing Sleeving NEW

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

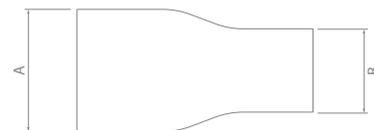
Material : Polyolefin & Polyester Multifilament
Approvals : RoHS, Halogen Free
Cutting Tool : Scissors
Shrink Temperature : 120°C
Shrink Ratio : 2:1
Operating Temperature : -40°C to 125°C

Heat Shrinkable

Heat shrinkable braided sleeving consist 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.



SSU-025



Guard-Shrink – Heat Shrinkable NEW

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



Sleeving

PVC Tubing



- General all around 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

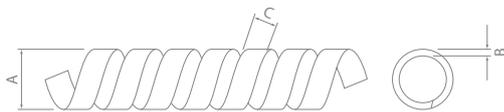
Roll Length - 25m	Roll Length - 50m	Roll Length - 100m	Roll Length - 200m	Roll Length - 250m	Inside Ø - A (mm)	Wall Thickness (mm)
PVC4/25	—	—	—	PVC4/250	4	0.5
PVC6/25	—	—	PVC6/200	—	6	0.5
PVC8/25	—	—	PVC8/200	—	8	0.65
PVC10/25	—	—	PVC10/200	—	10	0.65
PVC12/25	—	PVC12/100	—	—	12	0.85
PVC16/25	—	PVC16/100	—	—	16	0.85
—	—	PVC20/100	—	—	20	0.85
—	PVC25/50	—	—	—	25	0.85
—	—	—	—	—	30	1.0
—	PVC35/50	—	—	—	35	1.0
—	PVC40/50	—	—	—	40	1.0

- 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



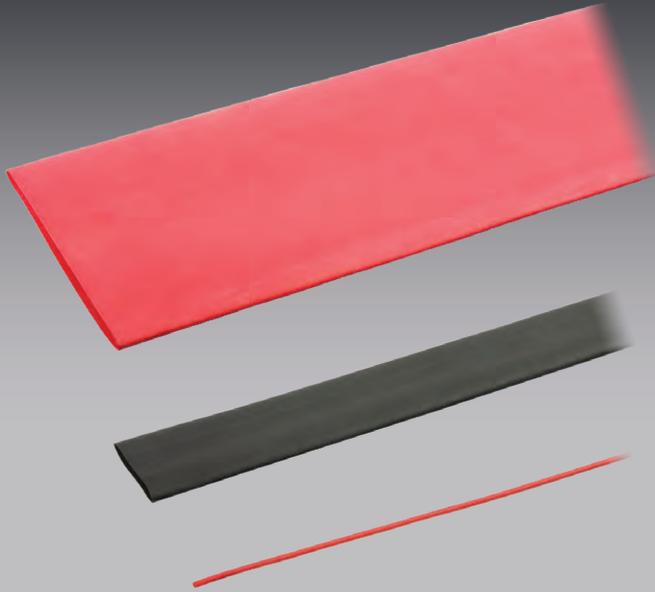
Spiral Wrap

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



Sleeving

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

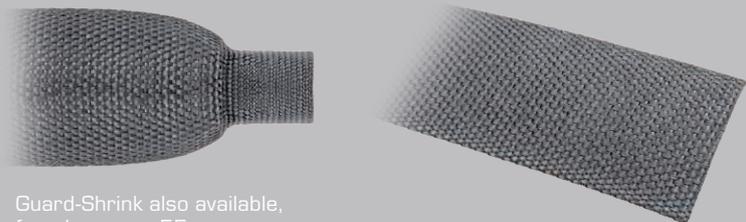
Standard Wall Heatshrink Specifications

Part No. Prefix	Diameter (mm)	Recovered Diameter (mm)	Recovered Wall Thickness (mm)	Part No. Prefix	Diameter (mm)	Recovered Diameter (mm)	Recovered Wall Thickness (mm)
HSX1.5	1.5	0.75	0.36	HSX20	20	10	0.78
HSX2.5	2.5	1.2	0.44	HSX25	25	12.5	0.86
HSX3.5	3.5	1.7	0.44	HSX30	30	15	0.86
HSX5	5	2.5	0.56	HSX40	40	20	0.96
HSX7	7	3.5	0.56	HSX50	50	25	0.96
HSX10	10	5	0.56	HSX76	76	38	1.27
HSX13	13	6.5	0.69	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 also available, 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	Pack Qty	Cut Length (mm)
HS10-40RED/40	HS10-40BLK/40	40	40
HS13-40RED/40	HS13-40BLK/40	40	40
HS20-40RED/20	HS20-40BLK/20	20	40
HS25-50RED/10	HS25-50BLK/10	10	50



2:1 Heatshrink – Standard Wall – Dispenser Boxes

Red	Black	Roll Length (m)
HSD2.5RED/20	HSD2.5BLK/20	20
HSD3.5RED/20	HSD3.5BLK/20	20
HSD5RED/10	HSD5BLK/10	10
HSD7RED/10	HSD7BLK/10	10
HSD10RED/10	HSD10BLK/10	10
HSD13RED/5	HSD13BLK/5	5
HSD20RED/5	HSD20BLK/5	5
HSD25RED/5	HSD25BLK/5	5



Sleeving



2:1 Heatshrink – Standard Wall – 1.2m Lengths

Red	Black	Red	Black
HS1.5RED	HS1.5BLK	HS13RED	HS13BLK
HS2.5RED	HS2.5BLK	HS20RED	HS20BLK
HS3.5RED	HS3.5BLK	HS25RED	HS25BLK
HS5RED	HS5BLK	HS40RED	HS40BLK
HS7RED	HS7BLK	HS50RED	HS50BLK
HS10RED	HS10BLK	HS76RED	HS76BLK



Custom lengths available for all 2:1 Standard Wall Heatshrink.

2:1 Heatshrink – Standard Wall – Rolls

Red	Black	Length (m)
HSR1.5RED/200	HSR1.5BLK/200	200
HSR2.5RED/200	HSR2.5BLK/200	200
HSR3.5RED/200	HSR3.5BLK/200	200
HSR5RED/100	HSR5BLK/100	100
—	HSR13BLK/100	100
—	HSR20BLK/100	100
HSR7RED/50	HSR7BLK/50	50
HSR10RED/50	HSR10BLK/50	50
HSR13RED/50	HSR13BLK/50	50
HSR20RED/50	HSR20BLK/50	50
HSR25RED/50	HSR25BLK/50	50
HSR30RED/50	HSR30BLK/50	50
HSR40RED/25	HSR40BLK/25	25
HSR50RED/25	HSR50BLK/25	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.



- 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

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
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



2:1 Heatshrink – Diesel Resistant – Rolls

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
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



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
 Thick Wall 105°C
Dielectric Strength : >15kV/mm
 Medium Wall >20kV/mm
Operating Temperature : Dual Wall -55°C to 80°C
 Medium Wall, Thick Wall -55°C to 110°C



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)



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

Red	Black	Pack Qty	Cut Length (mm)
DW9-40RED/20	DW9-40BLK/20	20	40
DW12-40RED/20	DW12-40BLK/20	20	40
DW18-40RED/10	DW18-40BLK/10	10	40
DW24-50RED/5	DW24-50BLK/5	5	50



3:1 Dual Wall Heatshrink – 1.2m Lengths

Red	Black
DW3RED	DW3BLK
DW4.8RED	DW4.8BLK
DW6RED	DW6BLK
DW9RED	DW9BLK
DW12RED	DW12BLK
DW18RED	DW18BLK
DW24RED	DW24BLK
DW39RED	DW39BLK

Custom lengths
available for all 3:1
Dual Wall Heatshrink



3:1 Dual Wall Heatshrink – Rolls

Red	Black	Length (m)
DWR3RED/200	DWR3BLK/200	200
DWR4.8RED/100	DWR4.8BLK/100	100
DWR6RED/100	DWR6BLK/100	100
DWR9RED/50	DWR9BLK/50	50
DWR12RED/25	DWR12BLK/25	25
DWR18RED/25	DWR18BLK/25	25
DWR24RED/25	DWR24BLK/25	25
DWR39RED/25	DWR39BLK/25	25



Sleeving



3.5:1 Medium Wall Heatshrink – 1.2m Lengths

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
Part No.	MW12	MW22	MW27	MW35	MW40	MW56	MW72

Recovered wall thickness excludes adhesive.



4:1 Dual Wall Heatshrink – 1.2m Lengths

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
Part No.	ES2000-1	ES2000-2	ES2000-3	ES2000-4

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.