

Heat Shrink Solutions



Company Presentation

Around Cable Systems® (ACS) supplies high quality heat-shrinkable, cables accessories products and solutions to more than 26 countries and more than 500 customers.



We have been able to spec-in our products and solutions to main European utilities and key industrial OEM accounts through our channels and distributors partners.

ACS provides its customers with the highest level of customer service and support from its offices in Budapest (Hungary), Como (Italy), Lyon (France), Hamburg (Germany) and Göteborg (Sweden).

Our central logistic centre for Europe is located in Hamburg.



SELECTION GUIDE

Thin Wall Tubing

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
ACS-50	Shiny surface (black), Crystal (Clear) non flame retardant	2:1	105°C	Yes	Yes	No	No	No	9
ACS-51	Matte surface, non flame retardant polyolefin tubing	2:1	105°C	No	Yes	No	No	No	10
ACS-55	125°C polyolefin tubing excellent general properties	2:1	125°C	No	Yes	Yes	Yes	No	11
AYG-55/AYG-300	Yellow-green high quality polyolefin tubing	2:1/3:1	135°C	No	Yes	Yes	Yes	No	12
ACS-100	135°C very flexible, high quality polyolefin tubing	2:1	135°C	No	Yes	Yes	Yes	No	13
ACS-300	125°C excellent general properties, offering 3:1 shrinking ratio	3:1	125°C	No	Yes	Yes	Yes	No	14
ACS-4000	135°C excellent general properties, offering 4:1 shrinking ratio	4:1	135°C	No	Yes	Yes	Yes	No	15
AZH-100	105°C Zero-halogen tubing	2:1	105°C	Yes	Yes	No	Yes	No	16
ALST	Very low shrinking temperature and high flexibility	2:1	125°C	Yes	Yes	No	MVSS	No	17
AUTW	125°C Ultra thin wall polyolefin tubing	2:1	125°C	No	Yes	Yes	Yes	No	18
Mini Box	Different tubings available in mini-box dispensers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19
AGP-55	125°C polyolefin tubing specially designed for gas pipe applications	2:1	125°C	No	Yes	No	Yes	No	20
ACS-55NS	125°C non heat-shrink polyolefin tubing	NS	125°C	No	Yes	Yes	Yes	No	21
AZH-NS	Zero halogen non heat-shrink tubing	NS	105°C	Yes	Yes	No	Yes	No	21
AHPVC	Flat hard PVC thin wall tubing	2:1	85°C	No	No	No	No	No	22

Dual Wall Tubing

ACAT-300	Commercial grade dual wall tubing with hot-melt adhesive	3:1	110°C	No	Yes	No	Yes	Yes	25
ADW-300	Dual wall tubing with hot-melt adhesive, 3:1 shrink ratio	3:1	125°C	No	Yes	No	Yes	Yes	26
ADW-400	Dual wall tubing with hot-melt adhesive, 4:1 shrink ratio	4:1	125°C	No	Yes	No	Yes	Yes	26
ADW-UM3	High performance dual wall tubing with hot-melt adhesive	3:1	135°C	No	Yes	No	Yes	Yes	27
ADW-UM4	High performance dual wall tubing with hot-melt adhesive	4:1	135°C	No	Yes	No	Yes	Yes	27
ACCT	Dual wall tubing designed for crimped sealed connectors	3:1	125°C	No	Yes	No	Yes	Yes	28

Medium & Heavy Wall Tubing

AMW-2	Semi-flexible medium wall tubing in spool	>3:1	110°C	No	Yes	No	No	No	31
AMW/AMWA	Medium wall tubing (AMW), adhesive lined(AMWA)	>3:1	110°C	No	Yes	No	No	Yes	32
AHW/AHWA	Heavy wall tubing (AHW), adhesive lined(AHWA)	>3:1	110°C	No	Yes	No	No	Yes	33
AHWA-6X	Heavy wall tubing , adhesive lined, 6:1 shrink ratio	6:1	110°C	No	Yes	No	No	Yes	34
ACPT	Corrosion protection tubing with mastic coating	3:1	110°C	No	Yes	No	No	Yes	35
ACTV	Special tubing/adhesive lined designed for CATV application	3:1	110°C	No	Yes	No	No	No	36
AMWA-FR	Medium wall tubing, adhesive lined, Flame retarded	3:1	110°C	No	Yes	No	Yes	Yes	37
AHWA-FR	Heavy wall tubing, adhesive lined, Flame retarded	3:1	110°C	No	Yes	No	Yes	Yes	38
AWAS	Wrap-around repair sleeve	3:1	N/A	No	Yes	No	No	Yes	39
ALV KITS	Low voltage kits for cable joints	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40

SELECTION GUIDE

Speciality Products

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
AKY-150	Shiny (black) or Crystal (clear) high performance tubing in PVDF	2:1	150°C	No	Yes	Yes	Yes	No	45
AKY-175	PVDF (Kynar) tubing, high performance tubing	2:1	175°C	No	Yes	Yes	Yes	No	46
AVIT-200	Very high performance elastomeric tubing (Viton®)	2:1	200°C	No	Yes	Yes	Yes	No	47
ADR-150/TW	Diesel resistant tubing for high performance cabling	2:1	150°C	No	Yes	No	Yes	No	48
ATFE	PTFE tubing, high T° tubing	2:1	260°C	No	Yes	No	Yes	No	49
AFOP	Fiber Optic heat-shrink splice connector	3:1	100°C	No	No	No	No	No	50
ATIE	Cable ties, standard and high strength	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51
ARSM	Red sealing mastic	N/A	90°C	No	Yes	No	No	Yes	52
ASCM	Stress control mastic	N/A	90°C	No	Yes	No	No	Yes	52
ABFM	Black filling mastic	N/A	90°C	No	Yes	No	No	Yes	52
ACSC	Crimped sealed connector	3:1	125°C	N/A	Yes	N/A	Yes	Yes	53
AGJB	Gel joints	N/A	N/A	N/A	N/A	N/A	N/A	N/A	54
ACM	Versatile Cutting Machine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55

Medium Voltage Tubing

ABBM	Bus Bar tubing, medium wall	3:1	105°C	Yes	Yes	No	No	No	59
ABBH/ ABBH-2	Bus Bar tubing, heavy wall	3:1	105°C	Yes	Yes	No	No	No	60
ASCT	Stress control tubing for Medium voltage applications	3:1	100°C	No	Yes	No	No	No	61
ADWST	Dual wall tubing, isolation and semi conductive	3:1	100°C	No	Yes	No	No	No	62
ASCON	Semi conductive tubing for Medium voltage applications	3:1	105°C	No	Yes	No	No	No	63
AATT	High performance anti track tubing for MV applications	3:1	105°C	Yes	Yes	No	No	No	64
ABBT	Bus Bar tape	min. 30%	105°C	No	Yes	No	No	Yes	65

Moulded Parts

AEC/AEC-L	Cable end caps for various cable applications	3:1	110°C	No	Yes	No	No	Yes	69
AMEC	Cable Mini End caps	3:1	125°C	No	Yes	No	No	Yes	70
ABOS	Low voltage breakout molded shapes	3:1	110°C	No	Yes	No	Yes	Yes	71-72
ABOS-CON	Conductive breakout molded shapes for MV applications	3:1	105°C	No	Yes	No	No	Yes	73
ABOS-MV	Medium voltage breakout molded shapes, anti-tracking	3:1	105°C	No	Yes	No	No	Yes	74
AMBT-MV	Bushing moulded shapes, anti-tracking	3:1	105°C	No	Yes	No	No	No	75
AATRS	Rain skirt moulded shapes for MV applications	3:1	110°C	No	Yes	No	No	Yes	76

Identification

AIMS System	Inline marking system	N/A	N/A	N/A	N/A	N/A	N/A	N/A	79
AIMS-55	Flattened heat shrink tubing 2:1	2:1	125°C	No	Yes	Yes	Yes	No	80
AIMS-300	Flattened heat shrink tubing 3:1	3:1	125°C	No	Yes	Yes	Yes	No	81
AIMS-3000	Very flexible, flattened heat shrink tubing 3:1	3:1	135°C	No	Yes	Yes	Yes	No	82
AIMS-ZH2/ZH3	Halogen free, flattened heat shrink tubing 2:1/3:1	2:1/3:1	105°C	Yes	Yes	No	Yes	No	83
AIMS-DR3	Diesel resistant, flattened heat shrink tubing 3:1	3:1	135°C	No	Yes	Yes	Yes	No	84
APMS	Portable marking system	N/A	N/A	N/A	N/A	N/A	N/A	N/A	85

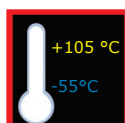
THIN WALL TUBING



ACS-50
ACS-51
ACS-55
AYG-55/AYG-300
ACS-100
ACS-300
ACS-4000
AZH-100
ALST
AUTW
MINI BOX
AGP-55
ACS-55NS/AZH-NS
AHPVC

THIN WALL TUBING SELECTION GUIDE

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ACS-300	125°C excellent general properties, offering 3:1 shrinking ratio	3:1	125°C	No	Yes	Yes	Yes	No	14
ACS-4000	135°C excellent general properties, offering 4:1 shrinking ratio	4:1	135°C	No	Yes	Yes	Yes	No	15
AZH-100	105°C Zero-halogen tubing	2:1	105°C	Yes	Yes	No	Yes	No	16
ALST	Very low shrinking temperature and high flexibility	2:1	125°C	Yes	Yes	No	MVSS	No	17
AUTW	125°C Ultra thin wall polyolefin tubing	2:1	125°C	No	Yes	Yes	Yes	No	18
Mini Box	Different tubings available in mini-box dispensers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19
AGP-55	125°C polyolefin tubing specially designed for gas pipe applications	2:1	125°C	No	Yes	No	Yes	No	20
ACS-55NS	125°C non heat-shrink polyolefin tubing	NS	125°C	No	Yes	Yes	Yes	No	21
AZH-NS	Zero halogen non heat-shrink tubing	NS	105°C	Yes	Yes	No	Yes	No	21
AHPVC	Flat hard PVC thin wall tubing	2:1	85°C	No	No	No	No	No	22



Applications

General purpose polyolefin tubing. Economical and halogen free which makes it ideal product when flame retardant properties are not needed.

Features

Conforms to substrates more uniformly and with less longitudinal change than most PVC-based tubing. Transparent version offers **exceptional transparency** to protect marked surfaces.

Various

Operating temperature: -55°C to + 105°C

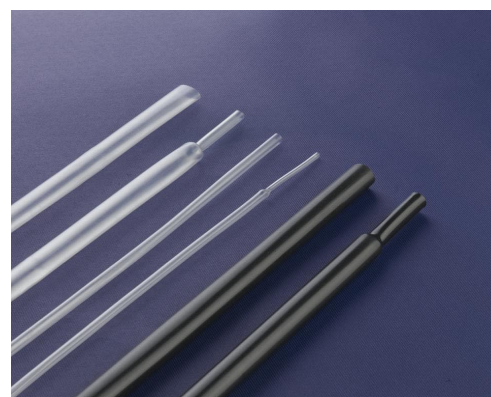
Minimum shrink temperature: 80°C

Minimum fully recovery temperature: 100°C

RoHs compliant

Standard colors:

Shiny-black, crystal-clear. Other colors available on request.



Technical data

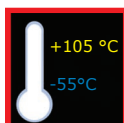
Property	Test Method	Typical Data
Operating temperature	UL 224	-55°C to + 105°C
Tensile strength	ASTM D 2671	>10.4 MPa
Elongation at break	ASTM D 2671	>500%
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	ASTM D 2671	<30%
Flammability	-	Flammable
Dielectric strength	IEC 93	>25 KV/mm
Volume resistance	ASTM D 2671	>10 ¹⁴ Ω.cm
Copper stability	ISO 62	Pass

Dimensions

Size	As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
ACS-50	Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
3/64	1.2	0.18	0.50	0.33	150
1/16	1.6	0.18	0.75	0.36	150
3/32	2.4	0.25	1.25	0.44	150
1/8	3.2	0.25	1.50	0.44	150
3/16	4.8	0.25	2.50	0.56	75
1/4	6.4	0.25	3.00	0.56	75
3/8	9.5	0.30	5.00	0.56	75
1/2	12.7	0.35	6.50	0.65	50
5/8	15.9	0.35	8.00	0.69	50
3/4	19.1	0.40	10.00	0.89	30
1	25.4	0.45	12.00	0.90	30
1 1/4	31.8	0.45	15.00	0.90	30
1 1/2	38.1	0.50	20.00	1.00	30
2	50.8	0.50	25.00	1.00	30
3	76.2	0.55	40.00	1.20	15
4	101.6	0.55	50.00	1.30	15
5	126.0	0.55	60.00	1.30	15
6	150.0	0.55	75.00	1.30	15

• Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.

Special sizes (up to 6 inches) and other special features available on request.



Applications

ACS-51 is an environment friendly commercial grade polyolefin tubing. It is designed for simple but effective insulation on wire harnesses and low voltage bus bars where economic solutions are needed. The material allows easy installation when placed over PVC wires and copper bus bars.

Features

Good electrical insulation. Excellent longitudinal shrink properties.

Various

Operating temperature: -55°C to + 105°C
 Minimum shrink temperature: 80°C
 Minimum fully recovery temperature: 100°C
 RoHs compliant
 Standard colors:
 Black, clear. Other colors available on request.



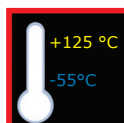
Technical data

Property	Test Method	Typical Data
Operating temperature	UL 224	-55°C to + 105°C
Tensile strength	ASTM D 2671	>10.4 MPa
Elongation at break	ASTM D 2671	>500%
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	ASTM D 2671	<30%
Flammability	-	Flammable
Dielectric strength	IEC 93	>25 KV/mm
Volume resistance	ASTM D 2671	>10 ¹⁴ Ω.cm
Copper stability	ISO 62	Pass

Dimensions

Size	As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
ACS-51	Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
3/64	1.2	0.18	0.50	0.33	150
1/16	1.6	0.18	0.75	0.36	150
3/32	2.4	0.25	1.25	0.44	150
1/8	3.2	0.25	1.50	0.44	150
3/16	4.8	0.25	2.50	0.56	75
1/4	6.4	0.25	3.00	0.56	75
3/8	9.5	0.30	5.00	0.56	75
1/2	12.7	0.35	6.50	0.65	50
5/8	15.9	0.35	8.00	0.69	50
3/4	19.1	0.40	10.00	0.89	30
1	25.4	0.45	12.00	0.90	30
1 1/4	31.8	0.45	15.00	0.90	30
1 1/2	38.1	0.50	20.00	1.00	30
2	50.8	0.50	25.00	1.00	30
3	76.2	0.55	40.00	1.20	15
4	101.6	0.55	50.00	1.30	15
5	126.0	0.55	60.00	1.30	15
6	150.0	0.55	75.00	1.30	15

• Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.
 Special sizes (up to 6 inches) and other special features available on request.



Applications

Perfect for numerous electronic, automotive and consumer goods. Suitable for electrical insulation, protection of components, strain relief, cable bundling, identification.

Features

Speciality designed formula approved by **UL**. Flexible and flame-retardant. Free from toxic heavy metal and harmful substances such as PBB's, PBBO's, PBBE's. Offering low shrinking temperature.

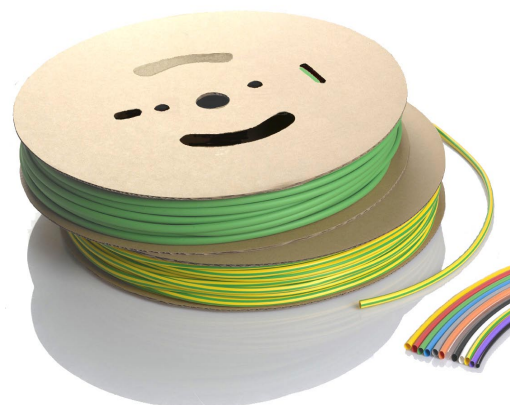
Various

Operating temperature : -55°C to +125°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C

Approvals: UL 224 125°C VW-1 600 V (E204071)

Material: No PBB's, PBBO's, or PBBE's. Lead content < 10 ppm.
Cadmium content < 5 ppm. RoHS compliant

Standard colors: Black, red, blue, yellow, green, white. Other colors available on request.



Technical data

Property	Test Method	Typical Data
Operating temperature	UL 224	-55°C to +125°C
Tensile strength	ASTM D 2671	>14 MPa
Ultimate elongation	ASTM D 2671	400%
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	ASTM D 2671	<30%
Heat aging		
Tensile strength	158°C/168 hrs.	>12MPa
Ultimate elongation		>350%
Flammability	VW-1	Pass
Dielectric strength	IEC 243	>20 KV/mm
Volume resistance	IEC 93	>10 ¹⁴ Ω.cm
Copper stability	UL 224	Pass

Dimensions

Size	As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
ACS-55	Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
3/64	1.2	0.18	0.60	0.33	150
1/16	1.6	0.18	0.80	0.36	150
3/32	2.4	0.25	1.20	0.44	150
1/8	3.2	0.25	1.60	0.44	150
3/16	4.8	0.25	2.40	0.56	75
1/4	6.4	0.25	3.20	0.56	75
3/8	9.5	0.30	4.80	0.56	75
1/2	12.7	0.35	6.40	0.65	50
5/8	15.9	0.35	8.00	0.69	50
3/4	19.1	0.40	9.50	0.80	30
1	25.4	0.45	12.70	0.90	30
1 1/4	31.8	0.45	15.90	0.90	30
1 1/2	38.1	0.50	19.10	1.02	30
2	50.8	0.50	25.40	1.02	30
3	76.2	0.55	38.10	1.20	15
4	101.6	0.55	50.80	1.30	15
5	126.0	0.55	63.50	1.30	15
6	150.0	0.55	76.00	1.30	15

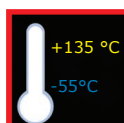
• Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.

Special sizes (up to 6 inches) and other special features available on request.

THIN WALL TUBING

AYG-55 / AYG-300

Dual colored flame retardant 2:1, 3:1



Applications

Used to identify electrical grounding as well as protecting and insulating wires harnesses of light cabling. Easy to mark for additional identification.

Features

Resistant to common fluids and solvents. Flexible and flame retardant. Free from harmful substances as PBB's, PBBO's, PBBE's and toxic heavy metals.

Various

Operating temperature: -55°C to +135°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C
RoHS compliant
Approvals:
UL 224 125°C VW-1 600 V (E204071).
Meet SAE-AMS-DTL-23053/5 Class 1&3.

Standard color:
Yellow & Green striped



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	14MPa
Elongation at break	ASTM D 2671	800%
Tensile strength after aging (175°C/168hrs.)	ASTM D 2671	14MPa
Elongation after aging (175°C/168hrs.)	ASTM D 2671	350%
Flammability	UL 224 VW-1 SAE-AMS-DTL-23053/5	Pass
Heat shock (250°C/4hrs.)	ASTM D 2671	No cracking
Cold bend test (-55°C/4hrs.)	ASTM D 2671	No cracking
Dielectric strength	ASTM D 150	20kV/mm
Volume resistance	ASTM D 876	> 10 ¹⁴ Ω.cm
Copper corrosion	UL 224	Pass
Water absorption	ASTM D 570	0.15%
Chemical resistance	SAE-AMS-DTL-23053/5	Pass
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	UL 224	<30%

Dimensions

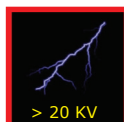
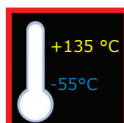
Shrink ratio 2:1

Size	As Supplied (mm)	After Recovery (mm)		Standard Length (m/spool)
AYG-55	Inside Diameter (min)	Inside Diameter (max)	Wall Thickness (min)	
3/64	1.2	0.60	0.33	150
1/16	1.6	0.80	0.36	150
3/32	2.4	1.20	0.44	150
1/8	3.2	1.60	0.44	150
3/16	4.8	2.40	0.56	75
1/4	6.4	3.20	0.56	75
3/8	9.5	4.80	0.56	75
1/2	12.7	6.40	0.65	50
5/8	16.00	8.00	0.69	50
3/4	19.1	9.50	0.80	30
1	25.4	12.70	0.90	30
1 1/4	31.8	15.90	0.90	30
1 1/2	38.1	19.10	1.02	30
2	50.8	25.40	1.02	30
3	76.2	38.10	1.20	15
4	101.6	50.80	1.30	15

Shrink ratio 3:1

Size	As Supplied (mm)	After Recovery (mm)		Standard Length (m/spool)
AYG-300	Inside Diameter (min)	Inside Diameter (max)	Wall Thickness (min)	
1/16	1.6	0.50	0.51	150
3/32	2.4	0.80	0.51	150
1/8	3.2	1.00	0.55	150
3/16	4.8	1.50	0.60	75
1/4	6.4	2.00	0.65	75
3/8	9.5	3.00	0.75	75
1/2	12.7	4.00	0.75	50
3/4	19.1	6.00	0.85	30
1	25.4	8.00	1.00	30
1 1/2	39	13	1.15	30

• Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.
Special features available on request.



Applications

Provides excellent insulation and good mechanical strength to wire terminations and connectors. Superior flame retardancy & abrasion resistance make this tube ideal for military applications as well as for automotive cable bundling. The different colors are perfect for color code and identification.

Features

Very flexible, highly flame retardant (except clear). Resistant to common fluids and solvents. No PBB's, PBBO's and PBBE's, free of cadmium, lead. RoHS compliant.

Various

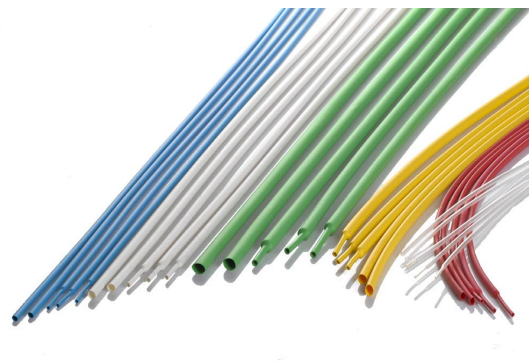
Operating temperature: -55°C to +135°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C

Approval:

UL 224 125°C VW-1 600V (E204071)
Meet SAE-AMS-DTL-23053/5 Class 1&3.

Standard color:

Black, red, blue, yellow, green, white, clear (Class 2).



Technical data

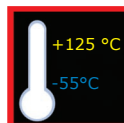
Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	14Mpa
Elongation at break	ASTM D 2671	600%
Elongation after aging (175°C, 168 hrs.)	ASTM D 2671	350%
Flammability	UL 224 VW-1 SAE-AMS-DTL-23053/5	Pass
Heat shock (250°C/4 hrs.)	ASTM D 2671	No cracking
Cold bend (-55°C/4 hrs.)	ASTM D 2671	No cracking
Dielectric strength	ASTM D 150	20 kV/mm
Volume resistance	ASTM D 876	10 ¹⁴ Ω.cm
Copper corrosion	UL 224	Pass
Water absorption	ASTM D 570	0,15%
Chemical resistance	SAE-AMS-DTL-23053/5	Pass
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	UL 224	<30%

Dimensions

Size	As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
	Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
ACS-100					
3/64	1.2	0.18	0.60	0.40	150
1/16	1.6	0.18	0.80	0.40	150
3/32	2.4	0.25	1.20	0.48	150
1/8	3.2	0.25	1.60	0.48	150
3/16	4.8	0.25	2.40	0.48	75
1/4	6.4	0.25	3.20	0.56	75
3/8	9.5	0.30	4.80	0.62	75
1/2	12.7	0.30	6.40	0.62	50
5/8	15.9	0.35	8.00	0.68	50
3/4	19.1	0.40	9.50	0.68	30
1	25.4	0.45	12.70	0.87	30
1 1/4	31.8	0.45	16.00	1.00	30
1 1/2	38.1	0.50	19.10	1.00	30
2	50.8	0.50	25.40	1.10	30
3	76.2	0.55	38.10	1.20	15
4	102.0	0.55	50.80	1.35	15
5	125.0	0.55	62.50	1.40	15
6	151.0	0.55	75.00	1.40	15

• Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.

Special sizes (up to 6 inches) and other special features available on request.



Applications

Perfect for electrical insulation in light duty wire harnesses which are highly flexible. Ideal for wiring protections and identification of wires, cables and electronical / electrical components, and covering irregular shapes.

Features

Specially designed formulation to meet the standards of UL224. Free from harmful substances as PBB's, PBBO's, PBBE's and toxic heavy metals. Low shrinking temperature. Very flexible, and RoHS compliant. Shrink ratio 3:1.

Various

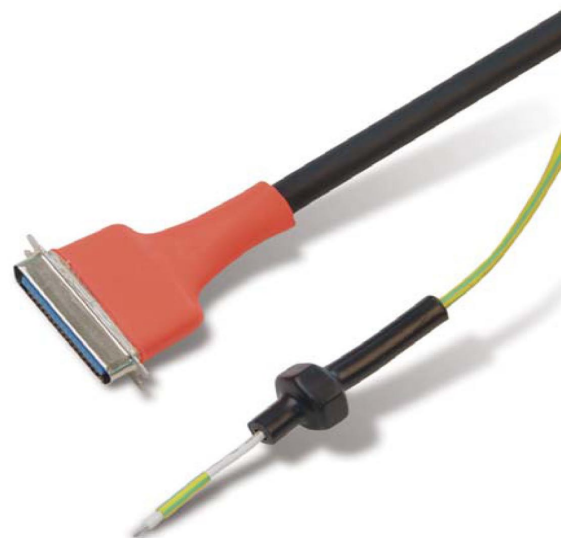
Operating temperature: -55°C to +125°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C

Approvals:

Meet UL 224, 125 °C VW-1 600V.

Standard color:

Black, red, blue, yellow, green, white. Others available on request.



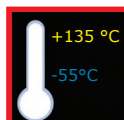
Technical data

Property	Test Method	Typical Data
Operating temperature	UL 224	-55°C to + 125°C
Tensile strength	ASTM D 2671	>14 Mpa
Elongation at break	ASTM D 2671	>400%
Elongation at break after aging	158°C/168 hrs.	>300%
Longitudinal shrinkage	UL 224	0 to -10%
Dielectric strength	IEC 243	>20 kV/mm
Volume resistance	IEC 93	>10 ¹⁴ Ω.cm
Flammability	VW-1	Pass
Copper stability	ASTM D 2671	Pass
Eccentricity	ASTM D 2671	<30%

Dimensions

Normal Size		As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
ACS-300		Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
1/16	1.5/0.5	1.6	0.15	0.5	0.45	150
1/8	3/1	3.2	0.18	1.0	0.55	150
3/16	4.5/1.5	4.8	0.20	1.5	0.60	75
1/4	6/2	6.4	0.22	2.0	0.65	75
3/8	9/3	9.5	0.25	3.0	0.75	75
1/2	12/4	12.7	0.25	4.0	0.80	50
3/4	18/6	19.1	0.35	6.0	0.90	30
1	24/8	25.4	0.45	8.0	1.00	30
1 1/2	39/13	39.0	0.50	13.0	1.25	30

• Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.
Special sizes (up to 6 inches) and other special features available on request.



Applications

This tubing is manufactured with specially developed formula and technology. It can easily fit a large diameter connector or transition, and then shrink down onto a smaller diameter jacket. The outstanding physical, chemical and electrical properties make it widely used in some important fields such as military, aerospace and telecom for insulating or repairing harness, cables and connectors.

Features

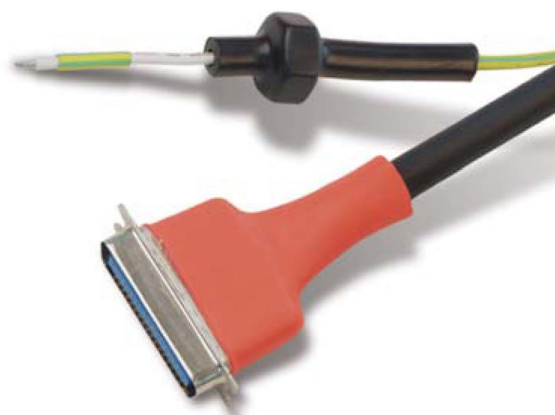
Resistant to common fluids and solvents, including hydraulic fluid, aviation gasoline, water, transform oil and diesel. RoHS compliant. Very flexible. 4:1 shrink ratio.

Various

Operating temperature: -55°C to +135°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C

Approval:
UL 224 125 °C VW-1 600V (E204071).
Meet SAE-AMS-DTL-23053/5 Class 1&3.

Standard color:
Black. Other colors available on request.



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	14 Mpa
Elongation at break	ASTM D 2671	800%
Tensile strength after aging	ASTM D 2671 (175°C/168 hrs.)	14 Mpa
Elongation at break after aging	ASTM D 2671 (175°C/168 hrs.)	350%
Flammability	UL 224 VW-1 SAE-AMS-DTL-23053/5	Pass
Heat shock (250°C, 4 hrs.)	ASTM D 2671	No cracking
Cold bend (-55°C, 4 hrs.)	ASTM D 2671	No cracking
Dielectric strength	ASTM D 150	20 kV/mm
Volume resistance	ASTM D 876	10 ¹⁴ Ω.cm
Copper corrosion	UL 224	Pass
Water absorption	ASTM D 570	0.15%
Chemical resistance	SAE-AMS-DTL-23053/5	Pass
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	UL 224	<30%

Dimensions

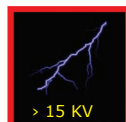
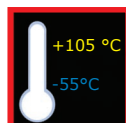
Size	As Supplied (mm)	After Recovery (mm)		Standard Length (m)
ACS-4000	Min. Inside Diameter (min)	Max. Inside Diameter (max)	Nom. Wall Thickness (min)	
3/4	19.1	4.6	1.7	1.22
1	25.4	7.0	1.7	1.22
1 1/2	38.1	9.5	1.7	1.22
2	50.8	14.0	1.7	1.22
3	76.2	20.6	1.7	1.22
4	102	26.7	1.7	1.22
4 1/2	115	36.8	1.7	1.22

• Sticks as standards. Special cutted pieces available on request.
Special sizes and other special features available on request.

THIN WALL TUBING

AZH-100

Halogen free tubing, flame retardant



Applications

This totally environmental friendly heat-shrinkable tube, made with specially designed halogen free polyolefin.

It produces neither toxic smoke nor harmful substances, ideal for underground applications where zero halogen cables & accessories are in demand.

Features:

The tube also shows excellent flame-retardant, insulation, low temperature shrinking and flexible properties. RoHS compliant.

Various

Operating temperature: -55°C to +105°C

Minimum shrink temperature: 70°C

Minimum fully recovery temperature: 100°C

Standard color:

Black, white. Other colors on request.



Technical data

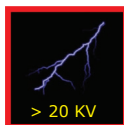
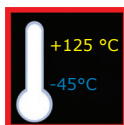
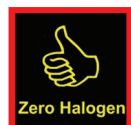
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +105°C
Tensile strength	ASTM D 2671	>10.4 MPa
Elongation at break	ASTM D 2671	>200%
Longitudinal shrinkage	UL 224	±5%
Eccentricity	ADTM D 2761	<30%
Heat shock	250°C/4 hrs.	No cracking
Heat aging		
Tensile strength	136°C, 168 hrs.	9.0MPa
Ultimate elongation		>150%
Flammability	SAE-AMS-DTL-23053/5	Pass

Dimensions

Size	As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
AZH-100	Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
1/8	3.2	0.25	1.60	0.44	150
3/16	4.8	0.25	2.40	0.56	75
1/4	6.4	0.25	3.20	0.56	75
3/8	9.5	0.30	4.80	0.56	75
1/2	12.7	0.35	6.40	0.65	50
3/4	19.1	0.40	9.50	0.80	30
1	25.4	0.45	12.70	0.90	30
1 1/2	38.1	0.50	19.10	1.02	30
2	50.8	0.50	25.40	1.02	30

● Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.

Special sizes and other special features available on request.



Applications

This low shrink temperature tubing is ideal for applications where heat sensitive components such as PVC jacketed wire and cable are used. Electrical termination insulation covering of heat-sensitive devices, cosmetic covering, and mechanical protection.

Features

Its halogen free formula makes it very flexible and quick to shrink. Maximum efficiency in high-volume commercial applications. Although non-flame retardant, **meets the automotive flame propagation standard MVSS 302.**

Various:

Operating temperature: -45°C to +125°C
Minimum shrink temperature: 65°C
Minimum fully recovery temperature: 95°C
RoHS compliant.

Standard color:
Black, others colors on request.



Technical data

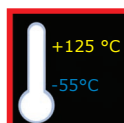
Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	13 MPa
Elongation at break	ASTM D 2671	450%
Tensile strength after aging	ASTM D 2671 (158°C, 168 hrs.)	11 MPa
Elongation after aging	ASTM D 2671 (158°C, 168 hrs.)	300%
Heat shock (250°C, 4 hrs.)	ASTM D 2671	No cracking
Cold bend (-55°C, 4 hrs.)	ASTM D 2671	No cracking
Copper corrosion	UL 224	Pass
Flammability	MVSS 302	Pass
Fluid resistance	23°C for 24hrs. ISO 37 Tensile strength Elongation	11MPa 200%
Longitudinal shrinkage	UL 224	0±5%

● To ensure dimensional stability, ALST should be stored at temperature below 40°C.

Dimensions:

ALST	As Supplied (mm) Inside Diameter (min)	After Recovery (mm)		Standard Spool Length (m/spool)
		Inside Diameter Max. (max)	Nom. Wall Thickness (min)	
1/16	1.6	0.80	0.50	150
3/32	2.4	1.20	0.50	150
1/8	3.2	1.60	0.50	150
3/16	4.8	2.40	0.50	75
1/4	6.4	3.20	0.60	75
3/8	9.5	4.80	0.60	75
1/2	12.7	6.40	0.60	50
3/4	19.1	9.50	0.80	30
1	25.4	12.70	0.90	30
1 1/4	31.8	15.9	0.90	30
1 1/2	38.1	19.10	1.00	30
2	50.8	25.40	1.10	30

● Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.
Special sizes and other special features available on request.



Applications

This ultra thin wall tubing has exceptional quick shrink capability making it ideal to use on sensitive applications. The low shrink temperature recovery reduces installation time and eliminates heat damage on the application.

Features

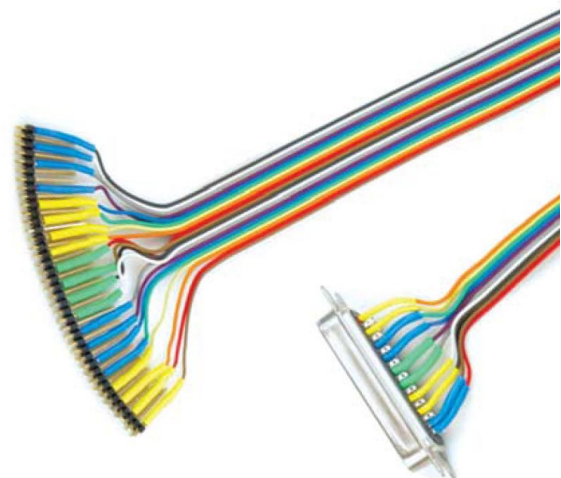
RoHS compliant.

Various

Operating temperature: -55°C to +125°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C

Approval: Meet UL 224 125°C VW-1 300V

Standard color:
Black, others colors on request.



Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +125°C
Tensile strength	ASTM D 2671	>14 MPa
Elongation at break	ASTM D 2671	>400%
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	ASTM D 2671	<30%
Elongation at break after aging	158°C/168 hrs.	>300%
Flammability	VW-1	Pass
Dielectric strength	IEC 243	>20 kV/mm
Volume resistance	IEC 93	>10 ¹⁴ Ω.cm
Copper stability	UL 224	Pass

Dimensions

Size	As Supplied (mm)		After Recovery (mm)		Standard Length (m/spool)
	Inside Diameter (min)	Wall Thickness (nominal)	Inside Diameter (max)	Wall Thickness (min)	
3/64	1.2	0.10	0.60	0.20	150
1/16	1.6	0.10	0.80	0.20	150
3/32	2.4	0.15	1.20	0.25	150
1/8	3.2	0.15	1.60	0.25	150
3/16	4.8	0.15	2.40	0.25	75
1/4	6.4	0.15	3.20	0.28	75
3/8	9.5	0.15	4.80	0.28	75
1/2	12.7	0.15	6.40	0.28	50

● Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths or cutted pieces available on request.
Special sizes and other special features available on request.

MINI-BOXES

AMB-55 / AMB-YG / AMB-CAT

Mini-box tubing dispensers



Applications:

AMB Series are Mini-Boxes tubing dispensers ideal for wholesalers, small shops, automotive repair shops or any electrical work shops.

AMB-55:

2:1 ratio, 125°C, UL VW-1, high quality, environment friendly tubing (refer to ACS-55 data sheet for details).

AMB-YG:

2:1 ratio, 125°C, Yellow/Green tubing ideal for grounding (refer to AYG-55 data sheet for details).

AMB-CAT:

3:1 ratio, adhesive lined tubing (refer to ACAT data sheet for details).

Mini-box metallic holder available on request.

Various:

Sizes available:

From 1,6mm up to 25,4mm

Standard color :

AMB-55: Black, Clear, Red, Blue, Yellow, Green, White, (others on request)

AMB-YG: Yellow/Green

AMB-CAT: Black



AMB-55

P/N for Mini-boxes	Size	Expanded Diameter (mm)	Recovered Diameter (mm)	Length per Mini-box	Tubing
AMB-55	1/16"	1.6	0.8	15 mtrs	ACS-55
AMB-55	3/32"	2.4	1.2	15 mtrs	ACS-55
AMB-55	1/8"	3.2	1.6	15 mtrs	ACS-55
AMB-55	3/16"	4.8	2.4	10 mtrs	ACS-55
AMB-55	1/4"	6.4	3.2	10 mtrs	ACS-55
AMB-55	3/8"	9.5	4.75	10 mtrs	ACS-55
AMB-55	1/2"	12.7	6.35	5 mtrs	ACS-55
AMB-55	3/4"	19.1	9.5	5 mtrs	ACS-55
AMB-55	1	25.4	12.7	5 mtrs	ACS-55

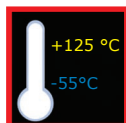
AMB-YG

P/N for Mini-boxes	Size	Expanded Diameter (mm)	Recovered Diameter (mm)	Length per Mini-box	Tubing
AMB-YG	1/16"	1.6	0.8	15 mtrs	AYG-55
AMB-YG	3/32"	2.4	1.2	15 mtrs	AYG-55
AMB-YG	1/8"	3.2	1.6	15 mtrs	AYG-55
AMB-YG	3/16"	4.8	2.4	10 mtrs	AYG-55
AMB-YG	1/4"	6.4	3.2	10 mtrs	AYG-55
AMB-YG	3/8"	9.5	4.75	10 mtrs	AYG-55
AMB-YG	1/2"	12.7	6.35	5 mtrs	AYG-55
AMB-YG	3/4"	19.1	9.5	5 mtrs	AYG-55
AMB-YG	1	25.4	12.7	5 mtrs	AYG-55

AMB-CAT

P/N for Mini-boxes	Size	Expanded Diameter (mm)	Recovered Diameter (mm)	Length per Mini-box	Tubing
AMB-CAT	6/2	6	2	4 mtrs	ACAT-300
AMB-CAT	9/3	9	3	3 mtrs	ACAT-300
AMB-CAT	12/4	12	4	3 mtrs	ACAT-300
AMB-CAT	18/6	18	6	2 mtrs	ACAT-300
AMB-CAT	24/8	24	8	2 mtrs	ACAT-300

• Special printing on box and special tubing are available on request.



Applications

AGP-55 flexible heat shrinkable sleeve is made from radiation cross-linked polyolefin. Specially designed formulations make the tubing to have outstanding physical, chemical and electrical properties. Very suitable for application of protecting flexible gas pipes.

Features

Base materials: Modified cadmium and lead free polyolefin.
Shrink ratio 2:1

Various

Minimum shrink temperature: 90°C
Minimum fully recovery temperature: 110°C

Standard colors:
Lemon yellow

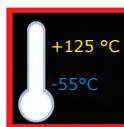


Technical data

Electrical Properties	Test Method	Test Value
Specific gravity	ASTM D 729	1.25/cm ³
Longitudinal changes	ASTM 2671	0±5%
Eccentricity	ASTM 2671	<30%
Tensile strength	ASTM 2671	14MPa
Elongation	ASTM 2671	>650%
After aging		
Ultimate elongation	158°C/168hrs.	>490%
Tensile strength		>12MPa
Heat SHock	250°C/4hrs.	No flowing or dropping
Cold bend test	ASTM 2671	No cracking
Dielectric strength	IEC 93	> 25kV/mm
Volume resistance	ASTM 2671	>10 ¹⁴ Ω.cm
Copper corrosion	UL 224	No corrosion
Copper Stability (158°C/168 hrs.)	UL 224	Pass
Printability	Hot stamp/ink jet/offset printing	Very good

Dimensions

Size	As Supplied (mm)	After Recovered (mm) Supplied I.D.		Standard Length Diameter
AGP-55	Inside Diameter	Inside Diameter	Wall Thickness	m/spool
AGP-55	23.0	9.5	0.65	100
AGP-55	27.5	12.7	0.70	50
AGP-55	29.0	12.7	0.70	50
AGP-55	33.5	16.0	0.80	50
AGP-55	40.5	19.0	0.80	50
AGP-55	51.0	25.4	0.80	50
AGP-55	65.0	32.5	1.27	50
AGP-55	77.0	38.1	1.27	50



Applications

ACS-55NS and AZH-NS tubing is made from radiation crosslinked flame retardant polyolefin. Designed to provide mechanical protection and insulation for harness used in automobile and electronic facilities.

The environment friendly fomulation makes the tubing free from harmful heavy metal and PBB's, PBBO's, PBBE's that were suspect to be harmful to the human beings and environment.

Features

Meet UL 224, VW-1 600V

ACS-55NS: flame retardant

AZH-NS: halogen free flame retardant

Various

Operating temperature: -55°C to +125°C

Standard Color:

Black. Other colors are available on request.

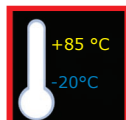


Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	>10.4 Mpa
Tensile strength after aging	ASTM D 2671	Remains 70%
Elongation at break	ASTM D 2671	200%
Elongation at break after aging	ASTM D 2671	100%
Heat shock (250°C/4hrs.)	ASTM D 2671	No cracking or dropping
Cold bend (-30°C/1 hr.)	ASTM D 2671	No cracking
Voltage withstand (AC 2500V/60s)	ASTM D 876	>34kV/mm
Volume resistance	ASTM D 876	>10 ¹⁴ Ω.cm
Flammability	UL 224 VW-1	Pass
Copper stability (158°C/168 hrs.)	UL 224	No corrosion
Water absorption	ASTM D 570	0,5%

Dimensions

Inside Diameter (mm)	Wall Thickness (min)	Standard Length (m/spool)
1.00±0.10	0.40±0.06	400
1.30±0.10	0.40±0.06	400
1.65±0.10	0.40±0.06	400
2.10±0.15	0.40±0.06	400
2.60±0.15	0.50±0.06	400
3.30±0.15	0.50±0.06	400
4.10±0.20	0.50±0.06	200
5.20±0.20	0.50±0.06	200
6.50±0.20	0.50±0.06	100
8.30±0.30	0.50±0.06	100
9.50±0.40	0.50±0.06	100
11.10±0.40	0.50±0.06	100
12.70±0.40	0.50±0.06	100



Applications

This rigid PVC shrink tubing is an ideal low cost solution to replace paint coating on LV bus bars, diodes and battery cells. The bright colors make identification simple.

Features

Shrink ratio: 2:1
Delivered on flat shape
Very thin and rigid wall

Standard colors: black, red, yellow, blue
Other colors on request



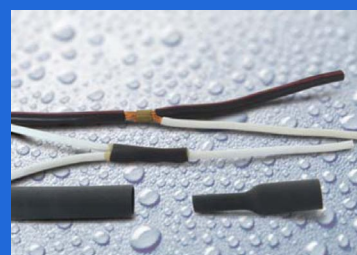
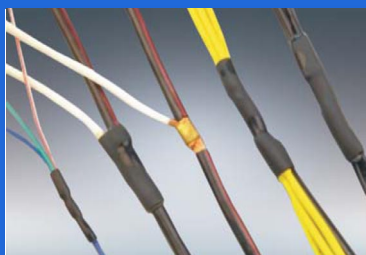
Technical data

Property	Test Method	Typical Data
Tensile strength	IEC 60684-2	21 MPa
Elongation at break	IEC 60684-2	70-120%
Longitudinal shrinkage	ASTM D 2671	- 20% max.
Specific Gravity	ASTM D 792 A-I	1.45g/cm ³ max.
Dielectric strength	VDE 0303 Part 2	20 kV/mm
Volume resistance	VDE 0303 Part 3	> 10 ¹⁴ Ω.cm
Water absorption	VDE 0472	0.70%
Dielectric constant		3.35

Dimensions

Sizes mm		Wall Thickness						
LAY FLAT WIDTH		SIZE in mm						
From	To	0.07	0.10	0.13	0.15	0.18	0.20	0.30
8.5	10.0	x	x					
10.5	13.5	x	x					
14.0	16.5	x	x	x	x			
17.0	19.5	x	x	x	x			
20.0	24.5	x	x	x	x	x		
25.0	29.5	x	x	x	x	x	x	
30.0	34.5	x	x	x	x	x	x	
35.0	39.5	x	x	x	x	x	x	
40.0	99.5	x	x	x	x	x	x	x
100.0	109.5	x	x	x	x	x	x	x
110.0	250.0	x	x	x	x	x	x	x

DUAL WALL TUBING



ACAT-300
ADW-300
ADW-400
ADW-UM3
ADW-UM4
ACCT

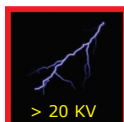
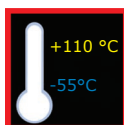
DUAL WALL TUBING SELECTION GUIDE

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
ACAT-300	Commercial grade dual wall tubing with hot-melt adhesive	3:1	110°C	No	Yes	No	Yes	Yes	25
ADW-300	Dual wall tubing with hot-melt adhesive, 3:1 shrink ratio	3:1	125°C	No	Yes	No	Yes	Yes	26
ADW-400	Dual wall tubing with hot-melt adhesive, 4:1 shrink ratio	4:1	125°C	No	Yes	No	Yes	Yes	26
ADW-UM3	High performance dual wall tubing with hot-melt adhesive	3:1	135°C	No	Yes	No	Yes	Yes	27
ADW-UM4	High performance dual wall tubing with hot-melt adhesive	4:1	135°C	No	Yes	No	Yes	Yes	27
ACCT	Dual wall tubing designed for crimped sealed connectors	3:1	125°C	No	Yes	No	Yes	Yes	28

DUAL WALL TUBING

ACAT-300

Commercial grade dual wall tubing



Applications

ACAT-300 is manufactured by coextrusion of polyolefin and meltable adhesive. Designed to provide both insulation and sealing for electronic components, wire splices and cables jackets.

Features

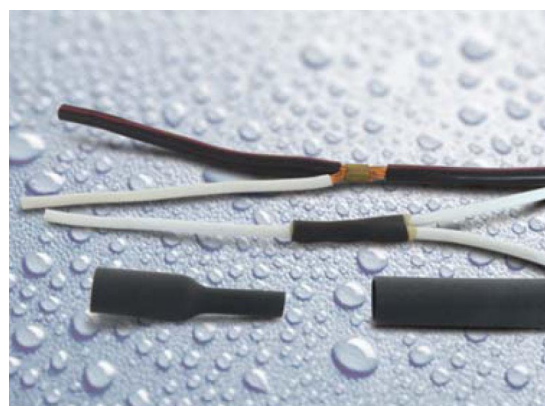
Commercial Grade.
Good electrical insulation and waterproof connection.
RoHs compliant.

Various

Operating temperature: - 45°C to +110°C
Minimum shrink temperature: 80°C
Meet: SAE-AMS-DTL-23053/4, UL 224

Standard color: Black

Only available in 1,22m cut lengths

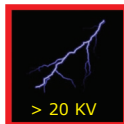
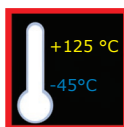


Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	12MPa (Min.)
Tensile strength after aging (136°C/168 hrs.)	ASTM D 2671	Remains 70%
Elongation at break	ASTM D 2671	400% (min)
Elongation at break after aging (158°C/168 hrs.)	ASTM D 2671	>100% (min)
Longitudinal shrinkage	UL 224	0 to -10%
Heat shock	200°C/4 hrs.	No cracking, no dropping
Cold bend (-40°C/1 hr)	ASTM D 2671	No cracking
Voltage withstand (AC 2500V/60 seconds)	ASTM D 2671	No breakdown
Volume resistance	ASTM D 876	10 ¹⁴ Ω.cm (min)
Flammability	SAE-AMS-DTL-23053/4	Self-extinguish in 30 sec
Copper corrosion (158°C/168 hrs.)	ASTM D 2671 Method B	Pass
Water absorption	ASTM D 570	<0,5%
Fluid resistance	MIL-DTL-23053/4	Pass

Dimensions

Normal Size	As Supplied (mm)	After Recoved (mm)			Standard Length
(mm)	Min. Inside Diameter	Max. Inside Diameter	Total Wall Thickness (Min.)	Adhesive Thickness	m/ piece
3/1	3.0	1.0	1.0	0.5	1.22
6/2	6.0	2.0	1.0	0.5	1.22
9/3	9.0	3.0	1.35	0.6	1.22
12/4	12.0	4.0	1.50	0.7	1.22
18/6	19.0	6.0	1.70	0.8	1.22
24/8	24.0	8.0	1.95	1.0	1.22
39/13	40.0	13.0	2.10	1.0	1.22
52/16	52.0	16.0	2.50	1.0	1.22



Applications

Manufactured by co-extrusion of polyolefin and hot-melt adhesive. Designed to provide both insulation and sealing for protected articles. Used to protect auto wires, shipping cable, bundle wires and metal tubes against water and moisture.

Features

Good electrical insulation and waterproof connection.

Various

Operating temperature: - 45°C to +125°C
Minimum shrink temperature: 80°C

Approvals: UL 224 125°C VW-1 600V File No.E204071 (except clear)
Meet: SAE-AMS-DTL-23053/4

Standard color: Black
Special colors: Red, blue, white, yellow, clear



Technical data

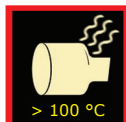
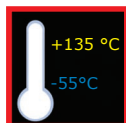
Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	>10.4 MPa
Tensile strength after aging (158°C/168 hrs.)	ASTM D 2671	Remains 70%
Elongation at break	ASTM D 2671	>300% (min)
Elongation at break after aging (158°C/168 hrs.)	ASTM D 2671	100% (min)
Longitudinal shrinkage	UL 224	0 to -10%
Heat shock	250°C/4 hrs	No cracking, no dropping
Cold bend (-30°C/1 hr.)	ASTM D 2671	No cracking
Voltage withstand (AC 2500V/60 seconds)	ASTM D 2671	No breakdown
Volume resistance	ASTM D 876	>10 ¹⁴ Ω.cm
Flammability	SAE-AMS-DTL-23053/4	Self-extinguish in 30 sec
Copper corrosion (158°C/168 hrs.)	UL 224	Pass
Water absorption	ASTM D 570	<0,5%

Dimensions

Normal Size	As Supplied (mm)	After Removed (mm)			Standard Length	
(mm)	Inside Diameter (Min.)	Inside Diameter (Max.)	Total Wall Thickness (Min.)	Adhesive Thickness	m/piece	m/spool
ADW-300 Shrink Ratio 3:1 Adhesive-lined tubing						
3/1	3.0	1.0	1.0	0.5	1.22	150
4.8/1.5	4.8	1.5	1.0	0.5	1.22	100
6/2	6.0	2.0	1.0	0.5	1.22	75
9/3	9.0	3.0	1.40	0.6	1.22	50
12/4	12.0	4.0	1.60	0.7	1.22	25
19/6	19.0	6.0	2.15	0.8	1.22	25
24/8	24.0	8.0	2.40	1.0	1.22	25
30/10	30.0	10.0	2.40	1.0	1.22	25
40/13	40.0	13.0	2.40	1.0	1.22	25
50/19	50.0	19.0	2.40	1.0	1.22	1.22
ADW-400 Shrink Ratio 4:1 Adhesive-lined tubing						
4/1	4.0	1.0	1.00	0.5	1.22	100
6/1.5	6.0	1.5	1.00	0.5	1.22	75
8/2	8.0	2.0	1.00	0.5	1.22	50
12/3	12.0	3.0	1.40	0.6	1.22	25
16/4	16.0	4.0	1.60	0.8	1.22	25
24/6	24.0	6.0	2.15	0.8	1.22	25
32/8	32.0	8.0	2.40	1.0	1.22	25
52/13	52.0	13.0	2.40	1.0	1.22	1.22

•Special spool lengths or cutted pieces available on request.

Special sizes and other special features available on request.



Applications

ADW-UM heat-shrinkable tubing is manufactured by co-extrusion of polyolefin and hot-melt adhesive. Designed to provide both insulation and sealing for protected articles. Typical applications are environment sealing of electrical components such as wire splices and harness in automobile and communication industry.

Features

Operating temperature: - 55°C to +135°C
Minimum shrink temperature: 100°C
Resistant against diesel and lubricating oil

Approvals: UL 224 125°C VW-1 600V File No.E204071
Meet: SAE-AMS-DTL-23053/4

Standard color: Black

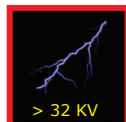
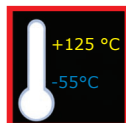


Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	10.4 MPa
Tensile strength after aging (158°C/168 hrs.)	ASTM D 2671	Remains 70%
Elongation at break	ASTM D 2671	300% (min)
Elongation at break after aging (158°C/168 hrs.)	ASTM D 2671	150% (min)
Longitudinal shrinkage	UL 224	0 to -10%
Heat shock	225°C/4 hrs	No cracking, no dropping
Cold bend (-30°C/1 hr.)	ASTM D 2671	No cracking
Voltage withstand (AC 2500V/60 seconds)	ASTM D 2671	No breakdown
Volume resistance	ASTM D 876	>10 ¹⁴ Ω.cm
Flammability	SAE-AMS-DTL-23053/4	Self-extinguish in 30 sec
Copper corrosion (158°C/168 hrs.)	UL 224	Pass
Water absorption	ASTM D 570	<0,5%
Adhesive to aluminium	ASTM D 2671	60N/25mm
Fluid resistance	Tensile strength: 7Mpa (min.) Elongation:300% (Min.)	24hrs. at 23°C In diesel and lubricating oil

Dimensions

Normal Size	As Supplied (mm)	After Recoved (mm)			Standard Length	
(mm)	Inside Diameter (Min.)	Inside Diameter (Max.)	Total Wall Thickness (Min.)	Adhesive Thickness	m/piece	m/spool
ADW-UM3 Shrink Ratio 3:1 Adhesive-lined tubing						
3/1	3.0	1.0	1.0	0.5	1.22	150
4.8/1.5	4.8	1.5	1.0	0.5	1.22	100
6/2	6.0	2.0	1.0	0.5	1.22	75
9/3	9.0	3.0	1.40	0.6	1.22	50
12/4	12.0	4.0	1.60	0.7	1.22	25
19/6	19.0	6.0	2.15	0.8	1.22	25
24/8	24.0	8.0	2.40	1.0	1.22	25
30/10	30.0	10.0	2.40	1.0	1.22	25
40/13	40.0	13.0	2.40	1.0	1.22	25
50/19	50.0	19.0	2.40	1.0	1.22	-
ADW-UM4 Shrink Ratio 4:1 Adhesive-lined tubing						
4/1	4.0	1.0	1.00	0.5	1.22	100
6/1.5	6.0	1.5	1.00	0.5	1.22	75
8/2	8.0	2.0	1.00	0.5	1.22	50
12/3	12.0	3.0	1.40	0.6	1.22	25
16/4	16.0	4.0	1.60	0.8	1.22	25
24/6	24.0	6.0	2.15	0.8	1.22	25
32/8	32.0	8.0	2.40	1.0	1.22	25
52/13	52.0	13.0	2.40	1.0	1.22	-



Applications

ACCT heat-shrinkable tubing is manufactured by co-extrusion of super high strength polymeric materials and hot-melt adhesive.

Designed to provide both insulation and sealing for wire connector.

Features

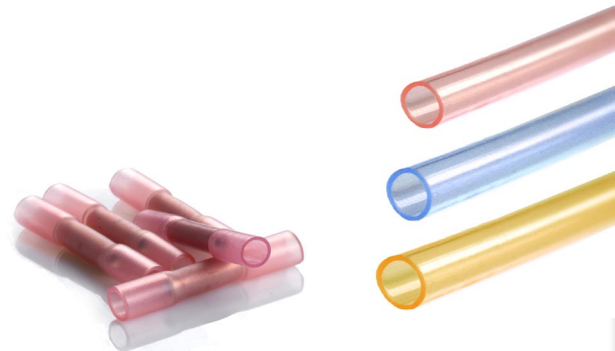
Shrink ratio: 3:1

Operating temperature: -55°C +125°C

Minimum shrink temperature: +110°C

Standard color: Red, Blue, Yellow

*See page 53 for complete connector assembly ACSC.



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	28MPa (min)
Elongation at break	ASTM D 2671	500% (min)
Longitudinal shrinkage	UL224	0 to - 10 %
Heat Shock	250°C/4hrs.	No cracking, flowing of out wall
Heat resistance	165°C/168hrs.	No cracking, flowing of out wall
Cold bend (-40°C/1hr.)	ASTM D 2671	no cracking
Voltage withstand (AC 2500V/ 60 sec.)	ASTM D 2671	No breakdown
Volume resistance	ASTM D 876	10 ¹⁴ Ω cm (min)
Corrosion (158°C, 168 hrs.)	UL224	Pass
Water absorption	ASTM D 570	<0.5%
Fluid resistance (23°C/24 hrs)	ASTM D 2671	Good to excellent
Specific gravity		0.96
Dielectric strength	ASTM D 2671	32KV/mm

Dimensions

Part No.	Color	As Supplied (mm)	After Recovery (mm)				
		Inside Diameter (min.)	Inside Diameter (max.)	Total Wall Thickness	Adhesive Thickness (nom.)	Cut Length (mm)	Standard Length (m/spool)
ACCT-1	Red	4.3	1.4	1.30	0.56	38	100
ACCT-2	Blue	5.0	1.8	1.52	0.76	38	100
ACCT-3	Yellow	6.5	2.2	1.91	1.02	42	100

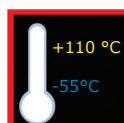
MEDIUM & HEAVY WALL TUBING



AMW-2
AMW/AMWA
AHW/AHWA
AHWA-6X
ACPT
ACTV
AMWA-FR
AHWA-FR
AWAS
ALV KITS

MEDIUM & HEAVY WALL TUBING SELECTION GUIDE

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
AMW-2	Semi-flexible medium wall tubing in spool	>3:1	110°C	No	Yes	No	No	No	31
AMW/AMWA	Medium wall tubing (AMW), adhesive lined(AMWA)	>3:1	110°C	No	Yes	No	No	Yes	32
AHW/AHWA	Heavy wall tubing (AHW), adhesive lined(AHWA)	>3:1	110°C	No	Yes	No	No	Yes	33
AHWA-6X	Heavy wall tubing , adhesive lined, 6:1 shrink ratio	6:1	110°C	No	Yes	No	No	Yes	34
ACPT	Corrosion protection tubing with mastic coating	3:1	110°C	No	Yes	No	No	Yes	35
ACTV	Special tubing/adhesive lined designed for CATV application	3:1	110°C	No	Yes	No	No	No	36
AMWA-FR	Medium wall tubing, adhesive lined, Flame retarded	3:1	110°C	No	Yes	No	Yes	Yes	37
AHWA-FR	Heavy wall tubing, adhesive lined, Flame retarded	3:1	110°C	No	Yes	No	Yes	Yes	38
AWAS	Wrap-around repair sleeve	3:1	N/A	No	Yes	No	No	Yes	39
ALV KITS	Low voltage kits for cable joints	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40



Applications

AMW-2 is semi-flexible medium wall heat shrinkable tubing with continuous length. Suitable for a variety of low voltage electrical and mechanical applications. Designed for applications to seal and protect 1kV power cable terminations and joints.

Features

High electrical insulation. High resistance to impact, abrasion and UV.

Provides excellent mechanical protection to cable joints and terminations.

3:1 shrink ratio allows it to fit over irregular shape and large connectors.

Various

Operating temperature : -55°C to +110°C

Shrink temperature: minimum full temperature 120°C

Resistant to UV-radiation.

Standard colors: Black. Special color: Red.

Packaging: Spools as standards.



Technical data

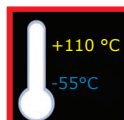
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	≥14 MPa
Tensile strength after aging	ASTM D 2671 (150°C/168 hrs.)	≥14 MPa
Elongation at break	ASTM D 2671	≥400%
Elongation at break after aging	ASTM D 2671 (150°C/168 hrs.)	≥300%
Density	ASTM D 792	1.05g/cm ³
Longitudinal shrinkage	UL 224	0 to - 10%
Dielectric strength	IEC 243	≥20 kV/mm
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Eccentricity	ASTM D 2671	<30%
Copper stability	ASTM D 2671	Pass
Resistance to stress cracking	ASTM D 1693 (50°C)	No Cracking
Water absorption	ISO 62 (23°C/14 days)	<0.15%

Dimensions

AMW-2	As supplied (mm)	After recovered (mm)		*Tube shape	Standard length AMW-2
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)		
8/2	8	2	1.8	-	30m/spool
12/3	12	3	1.8	-	30m/spool
16/5	16	5	2.2	-	30m/spool
22/7	22	7	2.4	-	30m/spool
25/8	25	8	2.4	-	30m/spool
33/10	33	10	2.8	-	30m/spool
40/13	40	13	2.8	-	30m/spool
48/16	48	16	2.8	-	30m/spool
55/19	55	19	2.8	-	30m/spool

• Spools as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "-": Flat shape



Applications

Suitable for a variety of low voltage electrical and mechanical applications, where lighter weight and greater flexibility are important. Recommended to applications for light cable and wire harnesses that require water-proofing, protection, and sealing of connectors components within the tubing.

Features

High electrical insulation. High resistance to impact, abrasion and UV.

Provides excellent mechanical protection to cable joints and terminations.

3:1 shrink ratio allows it to fit over irregular shape and large connectors.

Various

Operating temperature : -55°C to +110°C

Shrink temperature: minimum full temperature 120°C

Resistant to UV-radiation.

Standard colors: Black. Special color: Red.

Packaging: Spools or length as standards according to product sizes.



Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	≥14 MPa
Tensile strength after aging	ASTM D 2671 (150°C/168 hrs.)	≥12 MPa
Elongation at break	ASTM D 2671	≥400%
Elongation at break after aging	ASTM D 2671 (150°C/168 hrs.)	≥300%
Density	ASTM D 792	1.05g/cm ³
Longitudinal shrinkage	UL 224	0 to - 10%
Dielectric strength	IEC 243	≥20 kV/mm
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Eccentricity	ASTM D 2671	<30%
Copper stability	ASTM D 2671	Pass
Resistance to stress cracking	ASTM D 1693 (50°C)	No Cracking
Water absorption	ISO 62 (23°C/14 days)	<0.15%

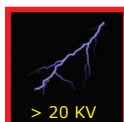
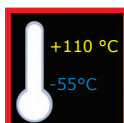
Dimensions

Thermoplastic adhesive for AMWA		
Water absorption	ISO 62	<0.2%
Softening point	ASTM D E28	85°C
Peel strength (PE)	DIN 30672	4N/cm
Copper stability	ASTM D 2671	Non-corrosive
Resistance to fungus and decay	ISO 846	Pass

AMW / AMWA	As supplied (mm)	After recovered (mm)		Tube shape * AMW / AMWA		Standard length AMW / AMWA (mm)
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)			
8/2	8	2	1.7	-	O	30m / 1000-1500
12/3	12	3	2.0	-	O	30m / 1000-1500
16/5	16	5	2.2	-	O	30m / 1000-1500
22/6	22	6	2.2	O	O	1000-1500
28/6	28	6	2.5	O	O	1000-1500
33/8	33	8	2.5	O	O	1000-1500
40/12	40	12	2.5	O	O	1000-1500
55/16	55	16	2.7	O	O	1000-1500
65/19	65	19	2.8	O	O	1000-1500
75/22	75	22	3.0	O	O	1000-1500
85/25	85	25	3.0	O	O	1000-1500
95/25	95	25	3.0	O	O	1000-1500
115/34	115	34	3.0	O	O	1000-1500
140/42	140	42	3.0	-	O	1000-1500
160/50	160	50	3.0	-	O	1000-1500
180/58	180	58	3.0	-	O	1000-1500
205/65	205	65	3.0	-	O	1000-1500
235/65	235	65	3.0	-	O	1000-1500
265/75	265	75	3.0	-	O	1000-1500
300/85	300	85	3.0	-	O	1000-1500
350/100	350	100	3.0	-	O	1000-1500

• 1 m. 1.2 m. 1.5m. sticks as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "O": Round shape or Oval
"-": Flat shape



Applications

Designed for applications to seal and protect electrical and communication connections. Provides excellent mechanical protection to cable joints and terminations, flexible gas pipes, etc....

Features

High resistance to impact, abrasion, corrosion, UV and chemical. Rated for 1 kV, 90 °C continuous use. AHWA is recommended for applications on light cables and wire harnesses which require waterproofing, protection of connector components, and thus encapsulates and seal components contained within the tubing.

Various:

Operating temperature: -55°C to +110°C
Shrink temperature: minimum recovery 120°C
Resistant to UV-radiation.

Standard colors: Black. Special color: Red.
Packaging: Length as standards.



Technical data

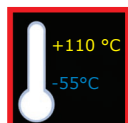
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	≥14 MPa
Tensile strength after aging	ASTM D 2671 (150°C/168hrs.)	≥12 MPa
Elongation at break	ASTM D 2671	≥400%
Elongation at break after aging	ASTM D 2671 (150°C/168hrs.)	≥300%
Density	ASTM D 792	1.05g/cm ³
Longitudinal shrinkage	UL 224	0 to - 10%
Dielectric strength	IEC 243	≥20 kV/mm
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Eccentricity	ASTM D 2671	<30%
Copper stability	ASTM D 2671	Pass
Resistance to stress cracking	ASTM D 1693 (50°C)	No Cracking
Water absorption	ISO 62 (23°C/14 days)	<0.15%
Thermoplastic adhesive for AHWA		
Water absorption	ISO 62	<0.2%
Softening point	ASTM D E28	85°C
Peel strength (PE)	DIN 30672	4 N/cm
Copper stability	ASTM D 2671	Non corrosive
Resistance to fungus and decay	ISO 846	Pass

Dimensions

AHW/AHWA	As supplied (mm)	After recovered (mm)		Tube shape *	Standard length (mm)
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)		
9/3	9	3	1.8	0	1000-1500
13/4	13	4	2.4	0	1000-1500
22/6	22	6	2.7	0	1000-1500
33/8	33	8	3.2	0	1000-1500
40/12	40	12	4.1	0	1000-1500
45/12	45	12	4.1	0	1000-1500
55/16	55	16	4.1	0	1000-1500
75/22	75	22	4.1	0	1000-1500
85/25	85	25	4.3	0	1000-1500
95/30	95	30	4.3	0	1000-1500
105/30	105	30	4.3	0	1000-1500
130/36	130	36	4.3	-	1000-1500
160/50	160	50	4.3	-	1000-1500
180/50	180	50	4.3	-	1000-1500
200/60	200	60	4.3	-	1000-1500

• 1 m. 1.2 m. 1.5m. sticks as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "o": Round shape or Oval
"-": Flat shape



Applications

Ideal for application to extremely different diameter between cables, connectors and components, their high shrink ratio provides close fit to a wide variety of irregular shapes connector and figurations.

Provide excellent mechanical protection to cable joints and terminations, complete environmental protection, and resistant to impact and abrasion.

Features

Resistant to UV-radiation.
High electrical insulation.

Various

Operating temperature: -55°C to +110°C

Shrink temperature: minimum recovery 120°C

Standard color: black.

Packaging: 1 m. or 1.22 m. stick. Special lengths, special printing on request.



Technical data

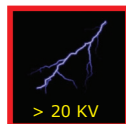
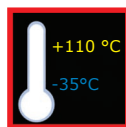
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	≥14 MPa
Tensile strength after aging	ASTM D 2671 (150°C/168hrs.)	≥12 MPa
Longitudinal shrinkage	UL 224	0 to -10%
Elongation at break	ASTM D 2671	≥400%
Elongation at break after aging	ASTM D 2671 (150°C/168hrs.)	≥300%
Dielectric strength	IEC 243	≥20 kV/mm
Heat shock (4hrs. at 225°C)	ASTM D 2671	No cracking or flowing
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Thermoplastic adhesive for AHWA-6X		
Water absorption	ISO 62	<0.2%
Softening point	ASTM D E28	85°C
Peel strength (PE)	DIN 30672	4 N/cm
Copper stability	ASTM D 2671	Non corrosive
Resistance to fungus and decay	ISO 846	Pass

Dimensions

AHWA-6X	As supplied (mm)	After recovered (mm)		Tube shape *	Standard length (mm)
	Inside diameter (min.)	Inside diameter (max.)	Wall whickness (min.)		
19/3.2	19	3.2	3.2	O	1000-1220
33/5.5	33	5.5	3.4	O	1000-1220
44.4/7.4	44.4	7.4	3.6	O	1000-1220
50.8/8.3	50.8	8.3	4.8	O	1000-1220
69.8/11.7	69.8	11.7	4.8	O	1000-1220
88.9/17.1	88.9	17.1	4.8	O	1000-1220
119.4/22.9	119.4	22.9	4.8	O	1000-1220
235/40	235	40	4.8	O	1000-1220

• 1 m. 1.22 m. sticks as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "o": Round shape or Oval



Applications

ACPT tubing is mastic lined heat shrinkable tubing designed specially for protecting of metal pipe's joint, soil nails and any other connectors requiring environmental sealing.

The radiation cross linked jacket provide effective mechanical protection and mastic layer prevent against water and moisture.

Features

Resistant to UV
High electrical insulation
Superior mechanical protection

Various

Operating temperature: -35°C to +110°C
Shrink temperature: minimum recovery 120°C

Standard color: Black.



Technical data

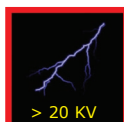
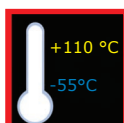
Property	Test Method	Typical Data
Operating temperature	IEC 216	-35°C to +110°C
Tensile strength	ASTM D 2671	≥14 MPa
Elongation at break	ASTM D 2671	≥400%
Longitudinal shrinkage	UL 224	0 to -10%
Eccentricity	ASTM D 2671	<30%
Elongation at break after aging	ASTM D 2671 (150°C/168hrs.)	≥300%
Dielectric strength	IEC 243	≥20KV/mm
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Copper stability	ASTM D 2671	Pass
Resistance to stress cracking (50°C)	ASTM D 1693	No cracking
Cold bend test (-55°C/4hrs.)	ASTM D 2671	No cracking
Thermoplastic Black Sealant Mastic for ACPT		
Water absorption	ISO 62	<0.1%
Softening point	ASTM D E28	80°C
Peel strength to stainless steel	ASTM D 1000	50N/25mm
Copper stability	ASTM D 2671	Non-corrosive
Resistance to fungus and decay	ISO 846	Pass

Dimensions

ACPT	Diameter (mm)		Recovered wall Thickness (mm)	Tube Shape *	Standard Length (mm)
	As Supplied	After Recovery			
30/6	30	6	2.5	O	1000-1500
33/8	33	8	2.5	O	1000-1500
40/12	40	12	2.5	O	1000-1500
55/20	55	20	2.0	O	1000-1500
75/25	75	25	2.0	O	1000-1500
95/30	95	30	2.0	O	1000-1500
120/40	120	40	2.0	O	1000-1500
140/50	140	50	2.3	O	1000-1500
160/50	160	50	2.3	O	1000-1500
180/66	180	66	2.5	O	1000-1500
205/66	205	66	2.5	O	1000-1500
235/70	235	70	2.5	O	1000-1500
265/75	260	75	3.0	O	1000-1500
300/85	300	85	3.0	O	1000-1500
350/100	350	100	3.0	O	1000-1500

• 1 m. 1.5 m. sticks as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "o": Round shape or Oval



Applications

ACTV is medium wall tubing coated with hot melt adhesive developed to meet the specific needs of the CATV industry. It provides waterproof seal and mechanical protection for CATV connectors. The specially formulated adhesive strong bond to cable and cable jacket, but easily peeling off from metal connectors for re-entry to connector or splice.

Features

Operating Temperature: -55°C to 110°C
Minimum fully recovered temperature: 120°C

Various

Standard color: Black.

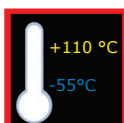


Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	≥15 MPa
Elongation at break	ASTM D 2671	≥600%
Longitudinal shrinkage	UL 224	0 to -10%
Eccentricity	ASTM D 2671	<30%
Elongation at break after aging	ASTM D 2671 (150°C/168hrs.)	>400%
Dielectric strength	IEC 243	≥20KV/mm
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Copper stability	ASTM D 2671	Pass
Resistance to stress cracking (50°C)	ASTM D 1693	No cracking
Cold bend test (-55°C/4 hrs)	ASTM D 2671	No cracking
Thermoplastic Black Sealant Mastic for ACTV		
Water absorption	ISO 62	<0.2%
Softening point	ASTM D E28	80°C
Peel strength to stainless steel	ASTM D 1000	100N/25mm
Copper stability	ASTM D 2671	Non-corrosive
Resistance to fungus and decay	ISO 846	Pass

Dimensions

ACTV	As supplied (mm)	After recovered (mm)		Standard Length (mm)
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)	
10/3.8	10.0	3.8	2.0	1220
19/5.6	19.0	5.6	2.4	1220
28/9	28.0	9.0	2.4	1220
33/10	33.0	10.0	2.4	1220
38/12	38.0	12.0	2.4	1220
45/13	45.0	13.0	2.4	1220
55/19	55.0	19.0	2.4	1220
70/25	70.0	25.0	2.4	1220



Applications

Medium wall tubing with hot melting adhesive flame retardant, suitable for protecting low voltage electrical splices, cable terminations and joints where electrical insulation and waterproof properties are required.

Features

High electrical insulation. High resistance to impact, abrasion and UV.

Provides excellent mechanical protection to cable joints and terminations.

3:1 shrink ratio allows it to fit over irregular shape and large connectors.

Various:

Operating temperature: -55°C to +110°C

Shrink temperature: minimum recovery 120°C

Flame retardant.

Resistant to UV-radiation.

Standard colors: Black.

Packaging: Length as standards according to product sizes.



Technical data

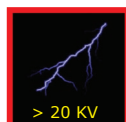
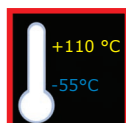
Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥14 MPa
Tensile strength after aging	ASTM D 2671 (158°C/168hrs.)	≥12 MPa
Elongation at break	ASTM D 2671	≥300%
Elongation at break after aging	ASTM D 2671 (120°C/168hrs.)	≥200%
Longitudinal change after shrinking	ASTM D 2671	0 to - 10%
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Heat shock	ASTM D 2671 (225°C/4hrs.)	No Cracking or flowing
Flammability	SAE-AMS-DTL-23053/5	Self extinguish in 30sec.
Dielectric strength	IEC 243	≥20 kV/mm
Thermoplastic adhesive for AMWA-FR		
Water absorption	ISO 62	<0.2%
Softening point	ASTM D E28	85°C
Peel strength (PE)	DIN 30672	4 N/cm
Copper stability	ASTM D 2671	Non-corrosive
Resistance to fungus and decay	ISO 846	Pass

Dimensions

AMWA-FR	As supplied (mm)	After recovery (mm)		Tube shape *	Standard length (mm)
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)		
22/6	22	6	2.2	O	1000-1500
33/8	33	8	2.5	O	1000-1500
40/12	40	12	2.5	O	1000-1500
55/16	55	16	2.7	O	1000-1500
65/19	65	19	2.8	O	1000-1500
75/22	75	22	3.0	O	1000-1500
95/25	95	25	3.0	O	1000-1500
115/34	115	34	3.0	O	1000-1500
140/42	140	42	3.0	O	1000-1500
160/50	160	50	3.0	O	1000-1500
180/58	180	58	3.0	O	1000-1500
200/65	200	65	3.0	O	1000-1500
235/65	235	65	3.0	O	1000-1500
265/75	265	75	3.0	O	1000-1500
300/85	300	85	3.0	O	1000-1500

• 1 m. 1.5m. sticks as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "o": Round shape or Oval



Applications

AHWA-FR is semi-rigid, heavy wall tubing, flame retardant with hot melting adhesive, this specification is suitable for protecting electrical splices, cable terminations and joints where electrical insulation and waterproof properties are required.

Features

High resistance to impact, abrasion, corrosion, UV and chemical. Rated for 1 kV, 90 °C continuous use. AHWA-FR is recommended for applications on light cables and wire harnesses which require waterproofing, protection of connector components, and thus encapsulates and seal components contained within the tubing.

Various:

Operating temperature: -55°C to +110°C
Shrink temperature: minimum recovery 120°C

Flame retardant.
Resistant to UV-radiation.

Standard colors: Black.
Packaging: Length as standards according to product sizes.



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥14 MPa
Tensile strength after aging	ASTM D 2671 (158°C/168 hrs.)	≥12 MPa
Elongation at break	ASTM D 2671	≥300%
Elongation at break after aging	ASTM D 2671 (120°C/168 hrs.)	≥200%
Longitudinal shrinkage	ASTM D 2671	0 to - 10%
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Heat shock	ASTM D 2671 (225°C/4hrs.)	No Cracking or flowing
Flammability	SAE-AMS-DTL-23053/5	Self extinguish in 30sec.
Dielectric strength	IEC 243	≥20 kV/mm
Thermoplastic adhesive for AHWA-FR		
Water absorption	ISO 62	<0.2%
Softening point	ASTM D E28	85°C
Peel strength (PE)	DIN 30672	4N/cm
Copper stability	ASTM D 2671	Non-corrosive
Resistance to fungus and decay	ISO 846	Pass

Dimensions

AHWA-FR	As supplied (mm)	After recovered (mm)		Tube shape *	Standard length (mm)
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)		
9/3	9	3	2.0	0	1000-1500
13/4	13	4	2.5	0	1000-1500
22/6	22	6	2.7	0	1000-1500
33/8	33	8	3.2	0	1000-1500
40/12	40	12	4.1	0	1000-1500
55/16	55	16	4.1	0	1000-1500
75/22	75	22	4.1	0	1000-1500
95/29	95	29	4.1	0	1000-1500
115/34	115	34	4.3	0	1000-1500
130/36	130	36	4.3	0	1000-1500

• 1 m. 1.5m. sticks as standard, special lengths, sizes, printing and other special features available on request.

* Tube shape "o": Round shape or Oval



Applications

AWAS cross linked polyethylene wraparound sleeves are suitable to restore XLPE and paper insulated cable's outer jackets quickly and securely.

They give excellent electrical, environmental and mechanical protection in LV joints. The sleeves are lined with hot-melt adhesive to ensure moisture or water penetration. Also suitable to use in LV branch joints.

Features

The wraparound sleeves are made from thermally stabilized cross linked weather resistant polymeric material. When heating, the sleeve shrinks and the adhesive melts create a water-tight bond between the sleeve and the cable. Sleeve materials equals to the material properties of the original cable jacket, it closes easily with a flexible stainless steel channel. For insulation on low voltage cable up to 1000V.



Technical data

Item	Test Condition and method	Requirement
Bursting Strength	Test temp: 23±5°C	Min 15MPa
Thermal Agering Bursting Strength	168 Hrs at 150±2°C (After free shrinkage)	Min 13.7MPa
Dielectric strength	Electrode Surface Dia: 6 mm Wight: 50±2gms Voltage steps: 2 KV/20sec.	Min 12 KV/mm
Split Resistance	Temp: 200±2°C Test time: 23±3°C	No split Propagation
Carbot Content UV Res of Out/layer	Heating rate: 20°C/min Gas flow rate: 300cc/min	Min 2.6±0.25%
Cold Crack resistance	Test temp≤-40°C	No cracking
Resistance to aggressive media Bursting Strength	Test media: Fuel oil, petroleum jelly Test temp: 70±2°C	Min 13.7MPa
Environmental Stress cracking	10% Igepal Co 630 solution immersion Time 30 days Test temp: 50±3°C	No cracking
Temp. indicating paint conversion	Completely conversion	Completely conversion
Hot melt adhesive		
Peel Strength	-PE at 23±2°C -PE at 23±2°C -Pb at 23±2°C	Min 100N/25mm
Shear Strength	At 23±2°C	Min200N
Corrosive Effect	Copper Mirror test Test time:16hrs Test temp:60±2°C	No effect

Dimensions

AWAS	Max Cable Diam. (mm)	Min Cable Diam. (mm)	Lengths Supplied
42/15	42	15	500-1000-1500-2000 mm
50/15	50	15	500-1000-1500-2000 mm
75/22	75	22	500-1000-1500-2000 mm
93/36	93	36	500-1000-1500-2000 mm
130/38	130	38	500-1000-1500-2000 mm
198/55	198	55	500-1000-1500-2000 mm
210/65	210	65	500-1000-1500-2000 mm

Other wrap around sleeves are also available on special request

- AWAS-R: fiber glass reinforcing layer
Using the same compound as AWAS (hot melt adhesive), but with a special fiber glass reinforcing layer.
- AWAS-S: fiber glass reinforcing layer with aluminum moisture vapour barrier layer
Using the same compound as AWAS (hot melt adhesive), but with fiber glass reinforcing with aluminum moisture vapour barrier layers.

Applications

These kits are designed for jointing 4 and 5 core 0,6kV Uo/1kV U plastic insulated cables armored or unarmored. The kits contain one outer and four (or five) core insulating sleeves depending on the type of cable.

(NAYY, NAYBY, NA2XY)

The kits also contain a cable sheath cleaner and an abrasive strip.

Various

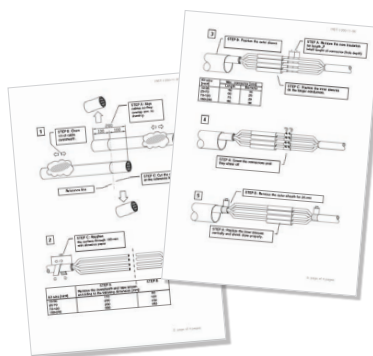
Meet: VDE 623 S1, EN 50 393, ISO 9001



TERMINATIONS FOR 3.5, 4 AND 5-CORE PLASTIC CABLES

Description						Lug Dia. mm max
3.5 AND 4-CORE PLASTIC CABLE WITHOUT ARMOUR - CRIMP						
ALPYT - 4 x	4	-	35	'-CU		14
ALPYT - 4 x	25	-	70	'-CU		22
ALPYT - 4 x	70	-	150	'-CU		31
ALPYT - 4 x	150	-	300	'-CU		45
3.5 AND 4-CORE PLASTIC CABLE WITHOUT ARMOUR - MECH. LUG						
ALPYT - 4 x	25	-	70	'-SU		22
ALPYT - 4 x	50	-	150	'-SU		31
ALPYT - 4 x	120	-	240	'-SU		45
3.5 AND 4-CORE PLASTIC CABLE WITH TAPE ARMOUR - CRIMP						
ALPYT - 4 x	4	-	35	'-CT		14
ALPYT - 4 x	25	-	70	'-CT		22
ALPYT - 4 x	70	-	150	'-CT		31
ALPYT - 4 x	150	-	300	'-CT		45
3.5 AND 4-CORE PLASTIC CABLE WITH ARMOUR - MECH. LUG						
ALPYT - 4 x	25	-	70	'-ST		22
ALPYT - 4 x	50	-	150	'-ST		31
ALPYT - 4 x	120	-	240	'-ST		45
4-CORE PLASTIC CABLE WITH CONCENTRIC NEUTRAL - CRIMP						
ALPYT - 4 x	4	-	35	'-CC		14
ALPYT - 4 x	25	-	70	'-CC		22
ALPYT - 4 x	70	-	150	'-CC		31
ALPYT - 4 x	150	-	300	'-CC		45
4-CORE PLASTIC CABLE WITH CONCENTRIC NEUTRAL - MECH. LUG						
ALPYT - 4 x	25	-	70	'-SC		22
ALPYT - 4 x	50	-	150	'-SC		31
ALPYT - 4 x	120	-	240	'-SC		45
4-CORE PLASTIC CABLE WITH CONCENTRIC NEUTRAL - MECH. LUG						
ALPYT - 5 x	4	-	25	'-CU		14
ALPYT - 5 x	4	-	25	'-CU		45

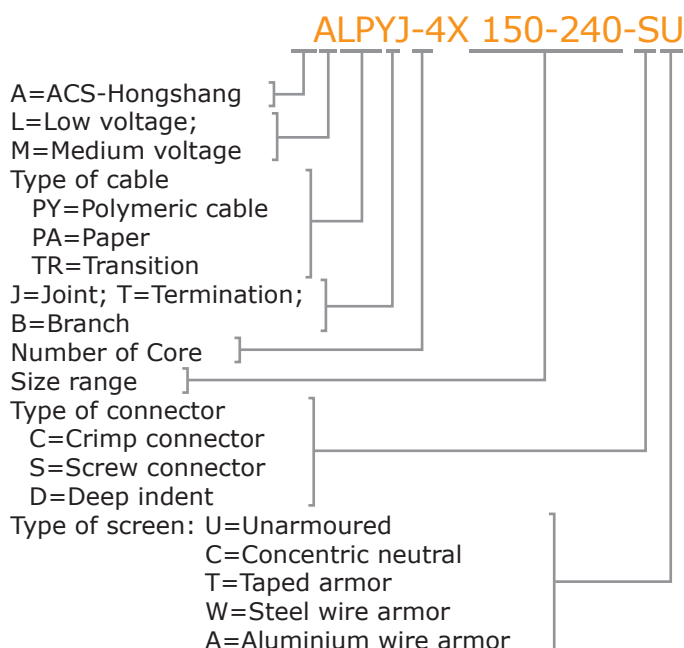
TYPICAL INSTALLATION INSTRUCTION



ACS COMPONENTS

Inner sleeve	AMWA
Outer sleeve	AHWA
Copper mesh	ACM 2000
Cleaning tissue	ACT 001
Abrasive paper	AAP
Installation manual	Inst-xxx

Part numbering system



PLASTIC CABLE INLINE JOINTS FOR 4-CORE CABLES

Description						Connector*	
						Dia. mm max	Length mm max
4-CORE PLASTIC CABLE W/O ARMOUR - CRIMP							
ALPYJ - 4 x	1.5	-	10	\-CU	8	35	
ALPYJ - 4 x	6	-	16	\-CU	10	50	
ALPYJ - 4 x	6	-	25	\-CU	10	75	
ALPYJ - 4 x	16	-	35	\-CU	18	95	
ALPYJ - 4 x	16	-	50	\-CU	18	95	
ALPYJ - 4 x	35	-	70	\-CU	22	105	
ALPYJ - 4 x	70	-	150	\-CU	26	130	
ALPYJ - 4 x	95	-	300	\-CU	37	150	
4-CORE PLASTIC CABLE W/O ARMOUR - MECH. CONNECTOR							
ALPYJ - 4 x	1.5	-	6	\-SU	8	24	
ALPYJ - 4 x	4	-	16re	\-SU	10	30	
ALPYJ - 4 x	10	-	35	\-SU	16	40	
ALPYJ - 4 x	25	-	70	\-SU	26	60	
ALPYJ - 4 x	70	-	120	\-SU	29	75	
ALPYJ - 4 x	150	-	240	\-SU	38	85	
4-CORE PLASTIC CABLE WITH CONCENTRIC NEUTRAL - CRIMP							
ALPYJ - 4 x	1.5	-	10	\-CC	8	35	
ALPYJ - 4 x	6	-	25	\-CC	10	75	
ALPYJ - 4 x	16	-	50	\-CC	18	95	
ALPYJ - 4 x	70	-	150	\-CC	26	130	
ALPYJ - 4 x	95	-	300	\-CC	37	150	
4-CORE PLASTIC CABLE WITH CONCENTRIC NEUTRAL - MECH. CONNECTOR							
ALPYJ - 4 x	10	-	35	\-SC	16	40	
ALPYJ - 4 x	25	-	70	\-SC	26	60	
ALPYJ - 4 x	70	-	120	\-SC	29	75	
ALPYJ - 4 x	150	-	240	\-SC	38	85	
4-CORE PLASTIC CABLE WITH ARMOUR - CRIMP							
ALPYJ - 4 x	1.5	-	10	\-CT	8	35	
ALPYJ - 4 x	6	-	25	\-CT	12	75	
ALPYJ - 4 x	16	-	50	\-CT	18	95	
ALPYJ - 4 x	70	-	150	\-CT	26	130	
ALPYJ - 4 x	95	-	300	\-CT	37	150	
4-CORE PLASTIC CABLE WITH ARMOUR - MECH. CONNECTOR							
ALPYJ - 4 x	10	-	35	\-ST	16	40	
ALPYJ - 4 x	25	-	70	\-ST	26	60	
ALPYJ - 4 x	70	-	120	\-ST	29	75	
ALPYJ - 4 x	150	-	240	\-ST	38	85	

*possible use (not included in the kit)

PLASTIC CABLE INLINE JOINTS FOR 3.5-CORE CABLES

Description						Connector*	
						Dia. mm max	Length mm max
3.5-CORE PLASTIC CABLE W/O ARMOUR - CRIMP							
ALPYJ - 3 x	25-50	\ / 1x	16-25	\-CU	18	95	
ALPYJ - 3 x	70-150	\ / 1x	25-70	\-CU	26	130	
ALPYJ - 3 x	150-240	\ / 1x	70-120	\-CU	37	150	
ALPYJ - 3 x	150-240	\ / 1x	95-120	\-CU	37	150	
3.5-CORE PLASTIC CABLE W/O ARMOUR - MECH. CONNECTOR							
ALPYJ - 3 x	25-70	\ / 1x	16-35	\-SU	25	60	
ALPYJ - 3 x	70-120	\ / 1x	25-70	\-SU	28	70	
ALPYJ - 3 x	150	\ / 1x	70	\-SU	38	80	
ALPYJ - 3 x	150-240	\ / 1x	70-120	\-SU	38	80	
3.5-CORE PLASTIC CABLE WITH ARMOUR - CRIMP							
ALPYJ - 3 x	25-50	\ / 1x	16-25	\-CT	18	95	
ALPYJ - 3 x	70-150	\ / 1x	25-70	\-CT	26	130	
ALPYJ - 3 x	150-240	\ / 1x	70-120	\-CT	37	150	
ALPYJ - 3 x	150-240	\ / 1x	95-120	\-CT	37	150	
3.5-CORE PLASTIC CABLE WITH ARMOUR - MECH. CONNECTOR							
ALPYJ - 3 x	25-70	\ / 1x	16-35	\-ST	25	60	
ALPYJ - 3 x	70-120	\ / 1x	25-70	\-ST	28	70	
ALPYJ - 3 x	150	\ / 1x	70	\-ST	38	80	
ALPYJ - 3 x	150-240	\ / 1x	70-120	\-ST	38	80	

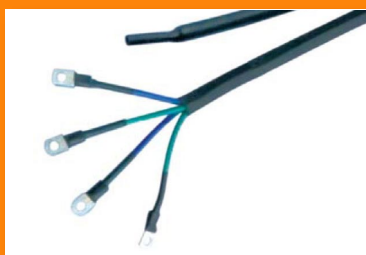
*possible use (not included in the kit)

PLASTIC CABLE INLINE JOINTS FOR 5-CORE CABLES

DESCRIPTION						Connector*	
						Dia. mm max	Length mm max
5-CORE PLASTIC CABLE W/O ARMOUR - CRIMP							
ALPYJ - 5 x	1.5	-	10	\-CU	8	35	
ALPYJ - 5 x	6	-	16	\-CU	10	50	
ALPYJ - 5 x	6	-	25	\-CU	10	75	
5-CORE PLASTIC CABLE W/O ARMOUR - MECH. CONNECTOR							
ALPYJ - 5 x	1.5	-	6	\-SU	8	24	
ALPYJ - 5 x	4	-	16re	\-SU	10	30	
ALPYJ - 5 x	10	-	25	\-SU	16	40	

*possible use (not included in the kit)

SPECIALITY PRODUCTS

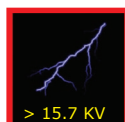
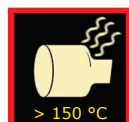
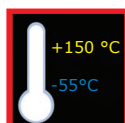


AKY-150
 AKY-175
 AVIT-200
 ADR-150
 ATFE
 AFOP
 ATIE-SS/ES
 ARSM
 ASCM
 ABFM
 ACSC
 AGJ AWAS
 AGJB
 ACM

SPECIALITY PRODUCTS

SELECTION GUIDE

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
AKY-150	Shiny (black) or Crystal (clear) high performance tubing in PVDF	2:1	150°C	No	Yes	Yes	Yes	No	45
AKY-175	PVDF (Kynar) tubing, high performance tubing	2:1	175°C	No	Yes	Yes	Yes	No	46
AVIT-200	Very high performance elastomeric tubing (Viton®)	2:1	200°C	No	Yes	Yes	Yes	No	47
ADR-150/TW	Diesel resistant tubing for high performance cabling	2:1	150°C	No	Yes	No	Yes	No	48
ATFE	PTFE tubing, high T° tubing	2:1	260°C	No	Yes	No	Yes	No	49
AFOP	Fiber Optic heat-shrink splice connector	3:1	100°C	No	No	No	No	No	50
ATIE	Cable ties, standard and high strength	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51
ARSM	Red sealing mastic	N/A	90°C	No	Yes	No	No	Yes	52
ASCM	Stress control mastic	N/A	90°C	No	Yes	No	No	Yes	52
ABFM	Black filling mastic	N/A	90°C	No	Yes	No	No	Yes	52
ACSC	Crimped sealed connector	3:1	125°C	N/A	Yes	N/A	Yes	Yes	53
AGJB	Gel joints	N/A	N/A	N/A	N/A	N/A	N/A	N/A	54
ACM	Versatile Cutting Machine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55



Applications

Can be used for jacketing and bundling of wires to form light-duty harnesses, where low profile, abrasion resistance, and flexibility are required. It reliably protect wires, solder joints terminals, connections from most industrial fluid solvents and fluid chemicals.

Features

High flame resistance.
Excellent physical and electrical properties after exposure to many chemicals and solvents.
Excellent transparency on clear version.

Various

Operating temperature: -55°C to +150°C
Minimum full recovery temperature: +150°C

Approvals: UL, VW-1, File No E249362.

Meet: SAE-AMS-DTL-23053/18.

RoHS

Standard color: Shiny black, crystal clear, other colors on request.

Packaging: Spools as standards. 1 m. or 1,20 m. sticks, special spool lengths, cutted pieces are available on request.



Technical data

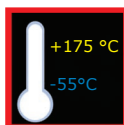
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +150°C
Tensile strength	ASTM D 2671	≥30 MPa
Elongation at break	ASTM D 2671	≥150%
Elongation at break after aging	180°C/168hrs.	≥100%
Heat shock	250°C/4 hrs.	No cracking
Cold bend	-55°C/4 hrs.	No cracking
Flammability	VW-1	Pass
Volume resistance	IEC 93	≥10 ¹⁴ Ω.cm
Copper corrosion	180°C/168hrs.	No corrosion
Copper stability	180°C/168hrs.	No sign of degradation

Dimensions

Size	As supplied (mm)	After recovery (mm)		Tube shape *	Standard length (m/spool)
AKY-150	Inside Diameter (min.)	Inside Diameter (max.)	Wall thickness (min.)		
3/64	1.2	0.6	0.26	0	150
1/16	1.6	0.8	0.26	0	150
3/32	2.4	1.2	0.26	0	150
1/8	3.2	1.6	0.26	0	150
3/16	4.8	2.4	0.26	0	75
1/4	6.4	3.2	0.26	0	75
3/8	9.5	4.8	0.30	-	75
1/2	12.7	6.4	0.30	-	50
3/4	19.1	9.5	0.41	-	30
1	25.4	12.7	0.41	-	30
1 1/2	38.1	19	0.51	-	30

* Tube shape "o": Round shape or Oval

"-": Flat shape



Applications

Excellent to insulate from high temperatures. It reliably protects wires, solder joints, terminals, connections, and components from most industrial fuels, solvents and chemicals.

Features

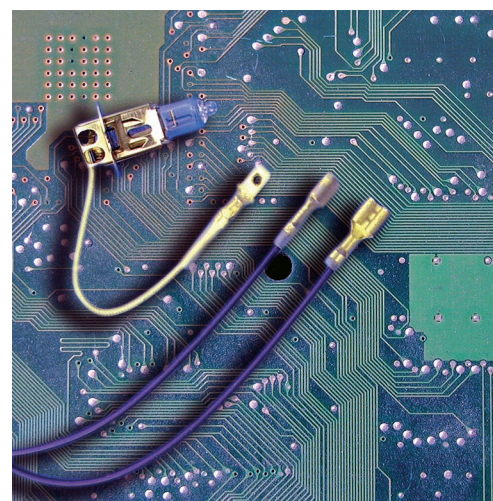
Semi-rigid tubing, ideal for applications that require high-temperature performance, outstanding abrasion and cut-through resistance or superior chemical and solvent resistance properties.

Various

Operating temperature: -55°C to +175°C
Minimum full recovery temperature: +175°C

Approvals: UL, VW-1, File No E249362.
Meet: SAE-AMS-DTL-23053/18.
RoHS.

Standard color: Clear, other colors on request.
Packaging: spools as standards, special spool lengths, cutted pieces are available on request.

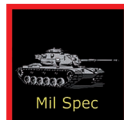
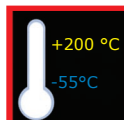


Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +175°C
Tensile strength	ASTM D 2671	≥34,5 MPa
Elongation at break	ASTM D 2671	≥150%
Elongation at break after aging	250°C/168hrs.	≥100%
Heat shock	300°C/1hrs.	No cracking
Cold bend	-55°C/1hrs.	No cracking
Flammability	VW-1	Pass
Volume resistance	IEC 93	≥10 ¹³ Ω.cm
Dielectric strength	ASTM D 2671	≥ 30kV/mm

Dimensions

Size	As supplied (mm)	After recovery (mm)		Standard length (m/spool)
AKY-150	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (min.)	
3/64	1.2	0.6	0.20	150m/spool
1/16	1.6	0.8	0.20	150m/spool
3/32	2.4	1.2	0.23	150m/spool
1/8	3.2	1.6	0.23	150m/spool
3/16	4.8	2.4	0.23	75m/spool
1/4	6.4	3.2	0.28	75m/spool
3/8	9.5	4.8	0.28	75m/spool
1/2	12.7	6.4	0.32	1,22m
3/4	19.1	9.5	0.36	1,22m
1	25.4	12.7	0.41	1,22m



Applications

Suitable for applications requiring high resistance to corrosive fluids, fuels, lubricants, acids, and solvents at elevated temperature (up to 200 °C). Frequently used in harsh environments such as defence, aerospace or marine.

Features

Very flexible at very high temperature, without cracking. Easily printable. Superior resistance to impact, abrasion, and cut-through.

Various

Operating temperature: -55°C to +200°C
Minimum full recovery temperature: +175°C

Approvals: UL, VW-1, File No E249362.
Meet: SAE-AMS-DTL-23053/13.
RoHS.

Standard color: Black.

Packaging: spools as standards, special spool lengths, cutted pieces available on request.
Specials: special sizes, other special features available on request.



Technical data

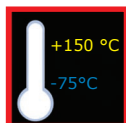
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +200°C
Tensile strength	ASTM D 2671	≥ 8.5 MPa
Elongation at break	ASTM D 2671	≥ 250%
Elongation at break after aging	250°C/168hrs.	≥ 200%
Heat shock	300°C/4 hrs.	No cracking or dropping
Flexibility	ASTM D 412	< 13.8 MPa
Flammability	ASTM D 2671	Self-extinguishing in 15 sec.
Dielectric Strength	ASTM D 2671	≥ 7.9 kV/mm
Volume resistance	ASTM D 876	≥ 10 ⁹ Ω.cm
Copper corrosion	SAE-AMS-DTL-23053/13 (175°C/16hrs.)	No corrosion

Dimensions

AVIT-200	As supplied (mm)	After recovery (mm)		Tube shape *	Standard length (m/spool)
	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (nom.)		
1/8	3.2	1.6	0.76	O	50
3/16	4.8	2.4	0.90	O	50
1/4	6.4	3.2	0.90	O	50
3/8	9.5	4.8	0.90	O	50
1/2	12.7	6.4	1.10	O	50
3/4	19.1	9.5	1.30	O	15
1	25.4	12.7	1.65	-	15
1 1/2	38.1	19.1	1.90	-	15
2	50.8	25.4	1.90	-	1.22m

• (Viton®) is a registered trademark of E.I. Du Pont de Nemours and Co.Inc

* Tube shape "O": Round shape or Oval
"-": Flat shape



Applications

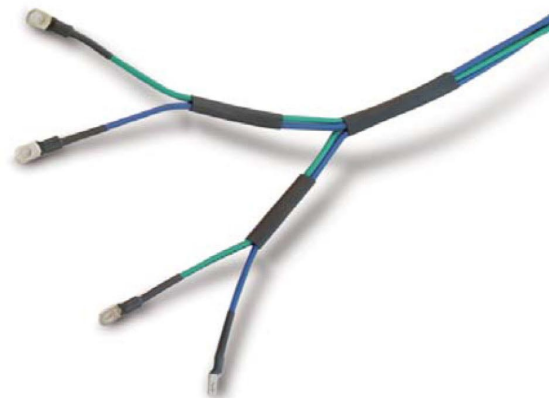
This flexible elastomer tube provides protection for wire harnesses placed in harsh environments. Its superior diesel, lubricating and hydraulic oil resistance combined with flexibility and abrasion resistance makes this product ideal for military, aerospace and automotive applications.

Features

Operating temperature: -75°C to + 150°C
Minimum shrink temperature: +175°C

Meet: SAE-AMS-DTL-23053/16

Standard color: Black.



Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-75°C to +150°C
Tensile strength	ASTM D 2671	≥ 13 Mpa
Elongation at break	ASTM D 2671	≥ 500%
Elongation at break after aging	160°C/168hrs.	≥ 220%
Heat shock	215°C/4hrs.	No cracking or dropping
Flexibility (2% secant)	ASTM D 882	< 50 MPa
Volume resistance	ASTM D 876	≥ 10 ⁹ Ω.cm
Flammability	ASTM D 2671	Self-extinguishing in 15 seconds
Fluid resistance tensile strength	ISO 37 24hrs. (Diesel at 70°C, Hydraulic at 70°C, Lubricant at 100°C)	≥ 10MPa
Fluid resistance elongation		≥ 300%

ADR-150

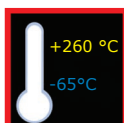
Dimensions

Normal Size		As supplied (mm)	After recovered (mm)		Tube shape *	Standard packing (m/spool)
(inch)	(mm)	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (nom.)		
1/8	3.2	3.2	1.6	0.76	O	50
3/16	4.8	4.8	2.4	0.85	O	50
1/4	6.4	6.4	3.2	0.90	O	50
3/8	9.5	9.5	4.8	1.02	O	50
1/2	12.7	12.7	6.4	1.22	O	30
3/4	19.1	19.1	9.5	1.45	-	30
1	25.4	25.4	12.7	1.80	-	30
1 1/2	38.1	38.1	19.1	2.40	-	15
2	50.8	50.8	25.4	2.80	-	15
3	76.2	76.2	38.1	3.20	-	15

ADR-150 TW (Thin Wall)

Normal Size		As supplied (mm)	After recovered (mm)		Tube shape *	Standard packing (m/spool)
(inch)	(mm)	Inside diameter (min.)	Inside diameter (max.)	Wall thickness (nom.)		
3/32	2.4	2.4	1.2	0.51	O	150
1/8	3.2	3.2	1.6	0.51	O	150
3/16	4.8	4.8	2.4	0.51	O	75
1/4	6.4	6.4	3.2	0.64	O	75
3/8	9.5	9.5	4.8	0.64	O	50
1/2	12.7	12.7	6.4	0.64	O	30
3/4	19.1	19.1	9.5	0.76	-	30
1	25.4	25.4	12.7	0.90	-	30
1 1/4	31.8	31.8	15.9	1.10	-	30
1 1/2	38.1	38.1	19.1	1.02	-	30

* Tube shape "O": Round shape or Oval
"-": Flat shape



Applications

This Teflon® based tubing is designed for protecting applications in extreme electrical, or mechanical environments. Thanks to its compound it has exceptional friction resistance and withstands even aggressive chemical solvents.

Features

Operating temperature: -65°C to +260°C
Minimum full recovery temperature: 350°C

Meet: SAE-AMS-DTL-23053/12

Standard color: Clear (natural).



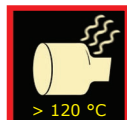
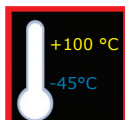
Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥ 17.3 MPa
Elongation at break	ASTM D 2671	≥ 200%
Specific gravity	ASTM D 792	2.30
Heat Shock (400°/4hrs.)	ASTM D 2671	No cracking or dropping
Cold bend test (-65°C/4hrs.)	ASTM D 2671	No cracking
Volume resistance	ASTM D 2671	≥ 10 ¹⁸ Ω.cm
Dielectric strength	ASTM D 2671	≥ 34kV/mm
Copper Corrosion	UL 224	Pass
Flammability	ASTM D 2671	Self-extinguish
Fluid resistance	SAE-AMS-DTL-23053/12	Excellent
Water absorption	ASTM D 570	0.1 max.

Dimensions

ATFE	As Supplied (mm)	After Recovered (mm)		Standard Length
	Ins. Diameter (Nom.)	Ins. Diameter (Nom.)	Wall Thickness (Nom.)	
AWG 20	1.52	0.97	0.30	1.22m
AWG 18	1.93	1.17	0.30	1.22m
AWG 16	2.36	1.45	0.30	1.22m
AWG 14	3.05	1.82	0.30	1.22m
AWG 12	3.81	2.26	0.30	1.22m
AWG 10	4.85	2.80	0.30	1.22m
AWG 8	6.10	3.55	0.38	1.22m
AWG 6	7.67	4.40	0.38	1.22m
AWG 4	9.40	5.45	0.38	1.22m
AWG 2	10.92	6.90	0.38	1.22m
AWG 0	11.94	8.56	0.38	1.22m

• Teflon® is a registered trademark of Du Pont de Nemours and Co. Inc.



Applications

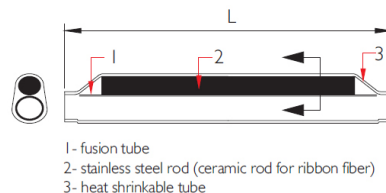
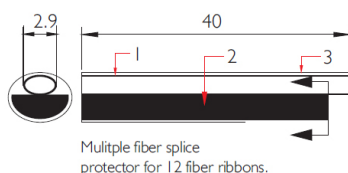
AFOP is specially designed to seal and protect fusion bonded optical cables. The tube has a hot melt adhesive inner liner with low temp flowing ability. The outer jacket is pre-shrunk to secure the stainless steel or ceramic rod in position for a reinforced mechanical protection. Both single and mass (ribbon) protectors are available.

Features

Operating temperature: -45°C to +100°C
Minimum full recovery temperature: 120°C

Approved to: BELLCORE SR 4301 & TCR-8

Standard color: Transparent & Colors



Technical data

Property	Method of test	Typical Data
Tensile strength	ASTM D 2671	≥ 18 MPa
Ultimate Elongation	ASTM D 2671	700%
Density	ISO R1183 D	0.94g/cm ³
Dielectric Strength	IEC 243	20 kV/mm
Dielectric Constant	IEC 243	2,5 max.
Longitudinal Change	ASTM D 2671	0±5%

Dimensions

AFOP	Splice protector (mm)		Fusion tube (mm)		Steel Rod (mm)		Packing (pcs/bag)
	OD.	Length	I.D	Length	OD.	Length	
Larger sleeves							
61	3.0	61	1.40	61	1.5	55	100
45	3.0	45	1.40	45	1.5	40	100
23	3.0	23	1.40	23	1.5	18	100
Standard sleeves							
61T	2.5	61	1.40	61	1.0	57	100
45T	2.5	45	1.40	45	1.0	41	100
40T	2.5	40	1.40	40	1.0	36	100
30T	2.5	30	1.40	30	1.0	26	100
25T	2.5	25	1.40	25	1.0	21	100
Mini/micro sleeves							
40M	1.3	40	0.35	40	0.5	40	100
25M	1.3	25	0.35	25	0.5	25	100
18M	1.3	18	0.35	18	0.5	18	100
15M	1.3	15	0.35	15	0.5	15	100
10M	1.3	10	0.35	10	0.5	10	100

Other lengths and sizes are available on request.

Applications

ATIE serie could be used in any electrical cabinet, electrical and electronic harnesses to secure wire & cable bundles. ATIE-SS is the standard serie suitable for standard application.

ATIE-ES (Extra Strength) is suitable when superior strength is required.

Features

P.A.6.6 - General Purpose nylon is suitable for use in most practical applications at a continuous temperature from -40°C up to 85°C.



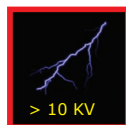
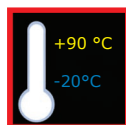
Dimensions

Standard Strength Serie ATIE-SS						
Type	Colors	Width	Length	Bundle Diametre mm/max	Tensile Strength in kg	Package
ATIE-SS*	Black/Natural	2.5	98	21	8.2	100/1000
ATIE-SS	Black/Natural	2.6	135	32	8.2	100/1000
ATIE-SS	Black/Natural	2.6	160	40	8.2	100/1000
ATIE-SS*	Black/Natural	2.6	200	52	8.2	100/1000
ATIE-SS*	Black/Natural	3.6	140	35	13	100/1000
ATIE-SS*	Black/Natural	3.6	200	50	13	100/1000
ATIE-SS*	Black/Natural	3.6	290	80	13	100/1000
ATIE-SS	Black/Natural	4.5	120	24	20	100/1000
ATIE-SS	Black/Natural	4.5	160	40	20	100/1000
ATIE-SS*	Black/Natural	4.8	178	45	22	100/1000
ATIE-SS	Black/Natural	4.8	200	50	22	100/1000
ATIE-SS	Black/Natural	4.8	250	68	22	100/1000
ATIE-SS*	Black/Natural	4.8	290	79	22	100/1000
ATIE-SS	Black/Natural	4.8	360	103	22	100/1000
ATIE-SS*	Black/Natural	4.8	390	106	22	100/1000
ATIE-SS	Black/Natural	4.8	430	115	22	100/1000

Extra Strength Serie ATIE-ES						
Type	Colors	Width	Length	Bundle Diametre mm/max	Tensile Strength in kg	Package
ATIE-ES	Black/Natural	7.8	120	25	55.0	100/1000
ATIE-ES	Black/Natural	7.8	180	45	55.0	100/1000
ATIE-ES	Black/Natural	7.8	240	63	55.0	100/1000
ATIE-ES	Black/Natural	7.8	300	80	55.0	100/1000
ATIE-ES*	Black/Natural	7.8	365	100	55.0	100/1000
ATIE-ES	Black/Natural	7.8	450	130	55.0	100/1000
ATIE-ES	Black/Natural	7.8	540	158	55.0	100/1000
ATIE-ES	Black/Natural	7.8	750	200	55.0	100/1000
ATIE-ES*	Black/Natural	9	780	233	77.0	100/1000

Note:

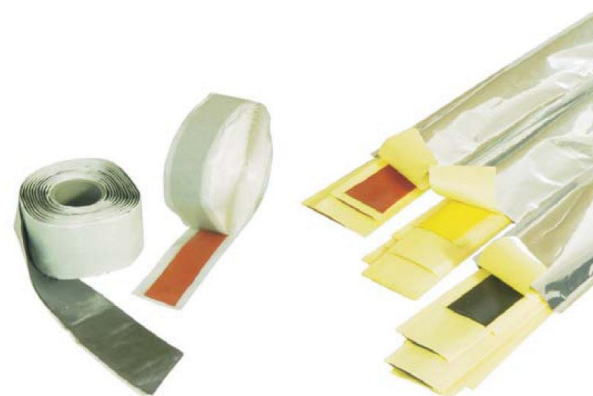
Certain data in these tables may vary, please check with your customer service before ordering.



ASCM Applications

This self amalgamating tape is easy to apply on power cable accessory applications. It is a specially designed formula provides an excellent compatibility with polymeric cables. Used for electrical stress relief at the end of the cable screen in MV polymeric cable joints and terminations to ensure safe operation. Also used to fill voids and gaps during installation of cable joints and terminations particularly in connectors.

Standard color: Light yellow



ARSM Applications

The anti-tracking sealing mastic is made from a non-toxic, butyl composite. The self amalgamating and solvent free make the mastic effectively used in sealing cable joints and terminations to provide waterproof and void-filling.

Standard color: Red

ABFM Applications

This black colored void filling mastic is made from a non-toxic, butyl composite. The mastic is self-amalgamating, and solvent free which makes it easy to apply to cable joint and terminations to provide waterproof and void-filling properties.

Standard color: Black

Features

Suitable for applications in power cable termination and joint 15kV, 24kV 36kV
Operating temperature: 90 °C

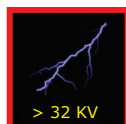
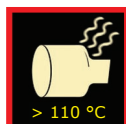
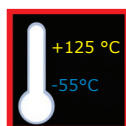
Technical data

Property	Method of Test	Value
ASCM Stress relief mastic		
Tensile strength	ASTM D 638	0.1 MPa
Elongation at break	ASTM D 638	>1000%
Volume resistance	ASTM D 527	10 ⁹ -10 ¹² Ω.cm
Dielectric strength	IEC 250	≥ 15KV/mm
Dielectric constant	IEC 250	10-15
Loss factor (50Hz)		0.035
Service temperature (max.)		-20°C to +90°C
Density	ASTM D 792	1.3g/cm ³
Adhesive and self amalgamation		good
ARSM Anti-tracking mastic		
Tensile strength	ASTM D 638	0.1 MPa
Elongation at break	ASTM D 638	>1000%
Volume resistance	ASTM D 527	10 ¹³ Ω.cm
Dielectric strength	IEC 250	≥ 10KV/mm
Dielectric constant	IEC 250	10-15
Loss factor (50Hz)		3.0
Service temperature (max.)		-20°C to +90°C
Density	ASTM D 792	1.2g/cm ³
Adhesive and self amalgamation		good
ABFM Black sealing mastic		
Tensile strength	ASTM D 638	0.1 MPa
Elongation at break	ASTM D 638	>1000%
Volume resistance	ASTM D 527	10 ¹³ Ω.cm
Dielectric strength	IEC 250	≥ 15KV/mm
Dielectric constant	IEC 250	2-3
Loss factor (50Hz)		0.035
Service temperature (max.)		-20°C to +90°C
Density	ASTM D 792	1.2g/cm ³
Adhesive and self amalgamation		good

Dimensions

Order No.	Thickness (mm)	Width (mm)	Lenght (mm)
ASCM	1.6±0.2	25±1.0	0.5 m, 1.5 m, 30 m
ARSM	0.8±0.1	38±10	1.5 m, 50 m
ABFM	3.0±0.1	25±1.0	1.5 m, 20 m

Available in an AL foil moisture proof pack containing 3 pcs.



Applications

Heat Shrinkable splices provide a permanent environmental seal. The polymer used in the production of the heat shrink tube is specially adapted to be crimped. Ideal for electrical equipment repairs, maintenance and outdoor electrical cabling.

Features

Operating temperature: -55°C to +125°C
Minimum shrink temperature: 110°C

No wire damage thanks to a lower shrink temperature.

100% waterproof, excellent fluid resistance.
Very high abrasion resistance.
Shrink ratio: 3:1.
RoHS compliant.

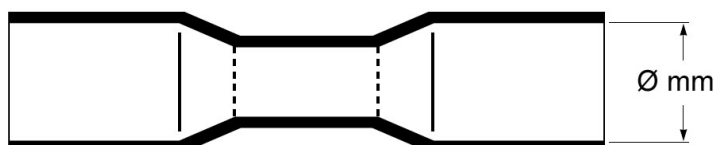


Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	28MPa (min)
Elongation at break	ASTM D 2671	500% (min)
Longitudinal shrinkage	UL224	0 to - 10 %
Heat Shock	250°C/4hrs.	No cracking, flowing of out wall
Heat resistance	165°C/168hrs.	No cracking, flowing of out wall
Cold bend (-40°C/1hr.)	ASTM D 2671	no cracking
Voltage withstand (AC 2500V, 60 sec.)	ASTM D 2671	No breakdown
Volume resistance	ASTM D 876	10 ¹⁴ Ω cm (min)
Corrosion (158°C, 168 hrs.)	UL224	Pass
Water absorption	ASTM D 570	<0.5%
Fluid resistance (23°C/24 hrs)	ASTM D 2671	Good to excellent
Specific gravity		0.96
Dielectric strength	ASTM D 2671	32KV/mm

Dimensions

ACSC	Wire range	As supplied (mm)	After recovery (mm)	
		Inside diameter	Inside diameter	Cut length
Red	0,5 - 1,5 mm ²	4.3	1.4	38
Blue	1,5 - 2,5 mm ²	5.0	1.8	38
Yellow	4 - 6 mm ²	6.5	2.2	42



Applications

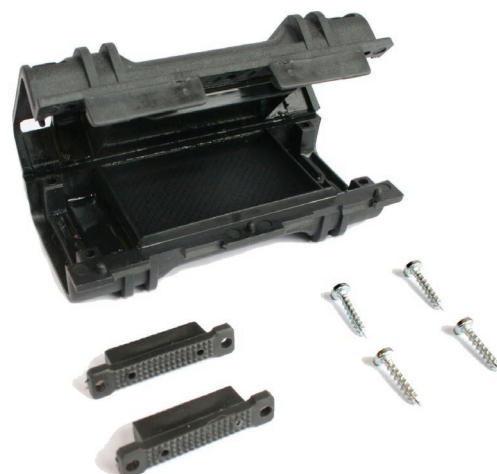
Suitable for straight and branch off junctions.
For extruded insulation low voltage cables 0,6/1kV, class 2, according to CEI 64-8 Protection higher than IP 68 according to CEI EN 60529 and IEC 529.

Features

Black outer shell made in PEHDUV resistant Re enterable Patented cable blocking system of the cables Suitable for fixing the shell to external device by means of cable ties.

Various

Primary insulation in silicon gel at low viscosity, stable and flexible from :
-50°C to + 200°C



Technical data

Property	Test Method
Density	980-970kg/m
Apparent density	450-500kg/m
Melting point	120-140°C
Color of combustion	44Mj/kg
Ignition temperature	340°C
Penetration	45mm x10
Dielectric strength	15kV/mm
Volume resistance	3 x10 Ohm/cm

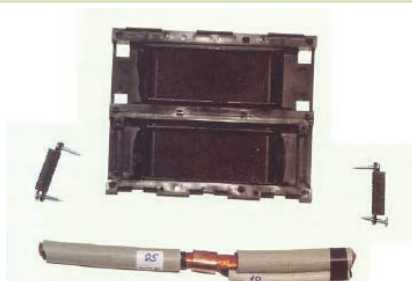
Dimensions

AGJB	Straight joint	Branch off joint	
		Main cable	Branch off cable
50	from 1x4 to 1x50	from 1x4 to 1x50	from 1x1.5 to 1x35
120	from 1x10 to 1x120	from 1x10 to 1x70	from 1x10 to 1x335
	from 2x6 to 2x16	from 2x1.5 to 2x10	from 2x1.5 to 2x6
	from 4x1.5 to 4x6	from 4x1.5 to 4x6	from 4x1.6 to 4x4
185	from 1x35 to 1x185	from 1x25 to 1x150	from 1x10 to 1x70
	from 2x16 to 2x50	from 2x10 to 2x35	from 2x1.5 to 2x25
	from 4x6 to 4x25	from 4x6 to 4x16	from 4x1.5 to 2x10

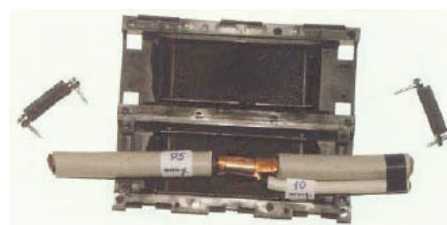
Tear proof joint with silicon gel

Installation Instructions

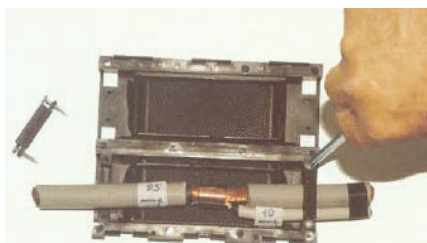
1. Open the shell



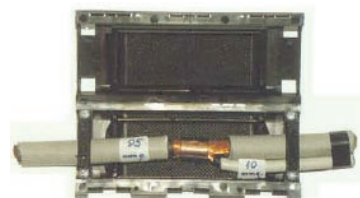
2. Position the cables:
electrical connection right in the middle



3. Fix the cables:
with the patented stoppers in the right position



4. Close the shell:
the joint is safe and properly installed



Applications & Features

The ACM cut to length machine offers a precise digital control of cut to length and quantity, with auto detection / auto stop and alarm system for malfunction.

A test mode allows for test feeding and cutting. Inbuilt are four memories which reduce the need to type values of cut length at every replacement.

A power supply detection circuit will automatically save processing data in the event of a power cut. This versatile cut to length machine will handle a variety of jobs including heat shrink tubes, vinyl, insulation tubes.



Technical data

Property	Data
Cutting Width	0.1mm to 100mm
Cutting Length	0.1mm to 99999mm
Speed	100PCS/MIN, L=100MM
Cutting Tolerance	+/- 0.2 + 0.002 x Cutting length mm
Feeding	Stepping motor
Cutting	Reversible motor
Power Consumption	18W Min 150W Max
Dimensions WxDxH	395x265x355mm
Weight	25KG

MEDIUM VOLTAGE TUBING



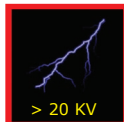
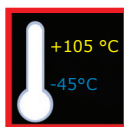
ABBM
ABBH/ABBH-2
ASCT
ADWST
ASCON
AATT
ABBT

*See also in SPECIALITY PRODUCTS:
ARSM, ASCM, ABFM mastic tapes.

MEDIUM VOLTAGE TUBING SELECTION GUIDE

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
ABBM	Bus Bar tubing, medium wall	3:1	105°C	Yes	Yes	No	No	No	59
ABBH/ ABBH-2	Bus Bar tubing, heavy wall	3:1	105°C	Yes	Yes	No	No	No	60
ASCT	Stress control tubing for Medium voltage applications	3:1	100°C	No	Yes	No	No	No	61
ADWST	Dual wall tubing, isolation and semi conductive	3:1	100°C	No	Yes	No	No	No	62
ASCON	Semi conductive tubing for Medium voltage applications	3:1	105°C	No	Yes	No	No	No	63
AATT	High performance anti track tubing for MV applications	3:1	105°C	Yes	Yes	No	No	No	64
ABBT	Bus Bar tape	min. 30%	105°C	No	Yes	No	No	Yes	65

*See also in SPECIALITY PRODUCTS: ARSM, ASCM, ABFM mastic tapes.



Applications

Used to enhance the insulation properties of bus bar in switchgear and substation. Provides high resistance to tracking and arcing.

Features

The continuous length of supplied products make it more convenient and economical.
Material: made from specially formulated radiation cross-linked halogen free compounds.

Various

Minimum shrink temperature: 110°C
Standard color: Orange.

Packaging: Spools or sticks as standards.

Specials: Printing, special sizes and other special features available on request.



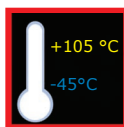
Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥ 11.8 Mpa
Tensile strength after aging	ASTM D 2671/120°, 168 hrs.	≥ 10 Mpa
Longitudinal shrinkage	ASTM D 2671	0 to -10%
Elongation at break	ASTM D 2671	≥ 700%
Elongation at break after aging	ASTM D 2671 (120°/168 hrs.)	≥ 500%
Dielectric strength	IEC 243	≥ 20KV/mm
Volume resistance	IEC 93	≥ 10 ¹³ Ω cm
Flammability (oxygen index)	IEC 2863	≥ 25
Water absorption	ISO 62 (23°/14days)	<0.5%

Dimensions

Normal size (mm)	As Supplied (mm)	After Recovered (mm)		* Tube shape	Standard Length
	Min. Inside diameter	Max. Inside Diameter	Wall thikness (min.)		
Continuous length tubing					
25/10	25	10	2.0	-	15 M/Spool
30/12	30	12	2.0	-	15 M/Spool
35/14	35	14	2.0	-	15 M/Spool
40/16	40	16	2.0	-	15 M/Spool
50/20	50	20	2.0	-	15 M/Spool
65/25	65	25	2.0	-	15 M/Spool
75/30	75	30	2.0	-	15 M/Spool
100/40	100	40	2.0	-	15 M/Spool
Cut length tubing					
150/60	150	60	3.0	-	1000mm
180/70	180	70	3.0	-	1000mm
205/75	205	75	3.3	-	1000mm
235/75	235	75	3.3	-	1000mm

* Tube shape "-": Flat shape



Applications

ABBH / ABBH-2 is medium and heavy wall heat shrinkable tubing. Made from specially formulated radiation cross-linked halogen free compounds. It can provide high resistance to tracking and arcing. Used to enhance the insulation properties of bus-bar in switch and substation to adapt to application in insulating medium voltage bus bars up to 11kV, 24kV, 36kV

Features

The continuous length of supplied products make it more convenient and economical. Material: made from specially formulated radiation cross-linked halogen free compounds.

Various

Minimum shrink temperature: 110 °C

Standard color: Orange.

Packaging: Spools or sticks as standards.

Specials: Printing, special sizes and other special features available on request.



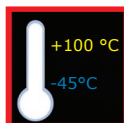
Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥ 11.8 Mpa
Tensile strength after aging	ASTM D 2671 (120°, 168 hrs.)	≥ 10 Mpa
Longitudinal shrinkage	ASTM D 2671	0 to -10%
Elongation at break	ASTM D 2671	≥ 700%
Elongation at break after aging	ASTM D 2671 (120°/168 hrs.)	≥ 500%
Dielectric strength	IEC 243	≥ 20KV/mm
Dielectric constant	IEC 250	3.0 (max.)
Volume resistance	IEC 93	≥ 10 ¹³ Ω cm
Flammability (oxygen index)	IEC 4589	≥ 25
Copper corrosion	ASTM D 2671 (120°/168hrs)	No corrosion
Cold bend	ASTM D 2671 (40°C/4hrs)	No cracking
Water absorption	ISO 62 (23°/14days)	<0.5%

Dimensions

Normal size (mm)	As Supplied (mm)	After Recovered (mm)		Rectangular Bus Bars (mm)	Round Bus Bars (mm)	Standard Length		
	Min. Inside diameter	Max. Inside Diam-eter	Wall thickness (min.)					
ABBH	Medium Wall Busbar Insulation Tubing, for service to 24KV on unbolted busbar							
18/6	18	6	2.0	6.4	19.0	6.8	15.0	15 M/Spool
30/12	30	12	2.3	15.0	30.0	12.7	25.4	15 M/Spool
35/14	40	16	2.5	27.0	45.0	17.0	32.0	15 M/Spool
40/16	50	20	2.5	32.0	51.0	21.0	40.0	15 M/Spool
50/20	65	25	2.5	45.0	75.0	26.0	52.0	15 M/Spool
65/25	75	30	2.6	48.0	85.0	31.0	60.0	15 M/Spool
100/40	100	40	2.6	73.0	120.0	45.0	80.0	15 M/Spool
120/50	120	50	3.0	69.8	111.0	50.0	90.0	15 M/Spool
ABBH -2	Heavy Wall Busbar Insulation Tubing, for services to 36KV on unbolted busbar							
25/10	25	10	4.0	9.5	12.7	10.6	17.7	15m/spool
40/16	40	16	4.0	16.0	25.4	16.0	30.0	15m/spool
65/25	65	25	4.0	25.4	34.9	19.3	33.0	1000mm
75/22	75	25	4.0	34.9	50.8	26.1	43.1	1000mm
95/30	95	30	4.0	50.8	76.2	35.8	58.4	1000mm
120/40	120	40	4.2	69.8	111.0	47.7	81.2	1000mm
180/58	180	58	4.2	107.9	177.0	69.5	124.0	1000mm

*Note: Rectangular busbars have thickness range from 6 mm to 16 mm.



Applications

Ideal to be used in high voltage systems. Control the high electrical stress present at insulation screen termination and joint of power cables.

Features

Minimum shrink temperature: 100 °C
Minimum full recovery temperature: 130 °C

Various

Standard color: Black.

Packaging: Spools and sticks as standards.

Specials: Special sizes, other special features available on request.



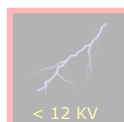
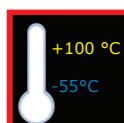
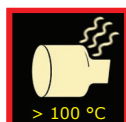
Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 638	≥10 MPa
Elongation at break	ASTM D 638	≥300%
Heat Shock (200°/30mins)	ESI09-13	No splitting, cracking dropping or flowing
Dielectric constant	IEC 250	≥15
Volume resistance	IEC 93	≥10 ¹¹ Ω.cm
Low temp. Flexibility		No cracking after 4 hrs at -20° (max)
Water absorption	ISO 62	<0.1%
Longitudinal shrinkage	-	±5%
Eccentricity	ASTM D 2671	<35%

Dimensions

ASCT	As supplied Min. Inside Diameter(mm)	After Recovery Max. Inside Diameter(mm)	After Recovery Min. Wall Thickness (mm)	*Tube Shape	Standard Spool Length (m/spool)
Continues Length tubing					
16/8	16	8	1.4	-	15 M/Spool
20/10	20	10	1.5	-	15 M/Spool
30/12	30	12	2.0	-	15 M/Spool
35/15	35	15	2.4	-	15 M/Spool
47/18	47	18	2.5	-	15 M/Spool
50/20	50	20	2.5	-	15 M/Spool
54/24	54	24	2.5	-	15 M/Spool
65/30	65	30	2.5	-	15 M/Spool
Cut Length tubing					
47/18	47	18	2.5	o	1000mm
55/21	55	21	2.5	o	1000mm
65/25	65	25	2.5	o	1000mm
75/30	75	30	2.5	o	1000mm

* Tube Shape: "-" flattening tubing; "o" round or oval shape



Applications

The internal layer provides high insulation whereas the external layer provides electrical shielding.

Very suitable for applications in power cable joints up to 36 kV.

Features

Very good insulator and excellent semi-conducting product.

Various

Minimum shrink temperature: 100 °C

Minimum full recovery temperature: 130 °C

Standard color: Black outside, red inside.

Packaging: 1 m & 1,22 m.



Technical data

internal layer

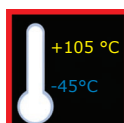
Property	Method of test	Typical Data
Tensile strength	ASTM D 2671	12 MPa (min)
Elongation at break	ASTM D 2671	300% (min)
Water absorption	ISO 62	<0.5% max.
Volume resistance	IEC 93	>10 ¹⁵ Ω.cm (min)
Dielectric strength	IEC 243	20 Kv/mm (min)
Density	ASTM D 257-98	1.1 g/cm ³

external layer

Tensile strength	ASTM D 638	14 MPa (min)
Elongation at break	ASTM D 638	300% (min)
Water absorption	ISO 62	0.5% max.
Volume resistance	IEC 93	<10 ⁴ Ω.cm
Density	ASTM D 257-98	1.2 g/cm ³

Dimensions

Size	As Supplied (mm)	After Recovery (mm)		Inner insulation layer wall thickness (mm)	Standard Length (mm)
	Inside diameter (min.)	Inside diameter (max.)	Total Wall Thickness (nom.)		
ADWST					
36/12	36	12	6.0	5.0	1000-1220
45/15	45	15	6.0	5.0	1000-1220
55/18	55	18	6.0	5.0	1000-1220
62/18	62	18	6.5	5.5	1000-1220
65/22	65	22	6.6	5.6	1000-1220
73/26	73	26	6.6	5.6	1000-1220
85/30	85	30	6.5	5.6	1000-1220
100/38	100	38	6.6	5.6	1000-1220
120/45	120	45	7.0	5.7	1000-1220
140/50	140	50	7.0	5.7	1000-1220



Applications

Suitable for application in power cable accessory.

Features

Chemical formula especially developed makes the tubing provides effective insulation screen on the high voltage cable connectors terminations.



Various

Operating temperature: -45°C to +105°C
Minimum shrink temperature: 100 °C
Minimum full recovery temperature: 120 °C



Standard color: black.
Packaging: 1,20 m. sticks, special lengths available on request.
Specials: special sizes available on request.



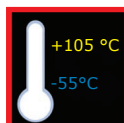
Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-45°C to +105°C
Tensile strength	ASTM D 638	≥14 MPa min.
Elongation at break	ASTM D 638	≥300%
Water absorption	ISO 62	<0.15%
Elongation at break after aging	150°C/168 hrs.	≥200%
Volume resistance	IEC 93	<10 ⁴ Ω cm min.
Longitudinal shrinkage	-	±5%
Eccentricity	ASTM D 2671	<30%

Dimensions

ASCON	As Supplied Min. Wall Thickness (mm)	After Recovery Max. Wall Thickness (mm)	After Recovery Min. Wall Thickness (mm)	*Tube Shape	Standard Spool Length (mm)
33/8	33	8	2.5	o	1000-1500
40/12	40	12	2.5	o	1000-1500
55/16	55	16	2.5	o	1000-1500
75/22	75	22	2.5	o	1000-1500
95/25	95	25	2.7	o	1000-1500
120/34	120	34	3.0	o	1000-1500
140/42	140	42	3.0	o	1000-1500
180/58	180	58	3.0	o	1000-1500

*Tube Shape "o": Round shape or Oval.



Applications

Used to provide insulation protection for cable termination, load-break switches power circuit breakers, etc.



Features

Very high creep resistance and anti-tracking properties of this product provide maximum operational reliability. Specially formulated radiation crosslinked polyolefin tubing.



Various

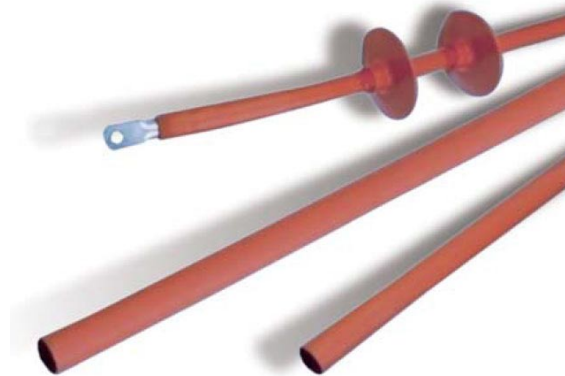
Minimum shrink temperature 110 °C

Standard color: Red



Packaging: Spools and sticks as standards.

Specials: Special lengths and sizes are available on request.



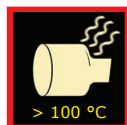
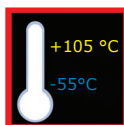
Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥ 11 MPa
Elongation at break	ASTM D 2671	≥ 400%
Longitudinal shrinkage	ASTM D 2671	0 to -10%
Tensile strength after aging	ASTM D 2671 (120°C/168 hrs.)	>10 MPa (min.)
Elongation at break after aging	ASTM D 2671 (120°C/168 hrs.)	>350% (min.)
Dielectric strength	IEC 243	>15KV/mm
Tracking resistance	ASTM D 2303	3.75 KV, 1 hr, Pass
Dielectric constant	IEC 250	3.0 (max.)
Volume resistance	ASTM D 2303	>10 ¹³ Ω cm
Flammability (oxygen index)	IEC 93	>25
Copper corrosion	ASTM D 2671 (120°C/168 hrs.)	No corrosion
Cold bend	ASTM D 2671 (-40°C, 4hrs)	No cracking

Dimensions

AATT	As Supplied Min. Inside Diameter(mm)	After Recovered Max. Inside Diameter (mm)	After Recovered Min. Wall Thickness (mm)	*Tube Shape	Standard Length
Continuous Length tubing					
19/6	19	6	2.5	-	15 M/Spool
30/10	30	10	2.8	-	15 M/Spool
35/12	35	12	2.8	-	15 M/Spool
40/16	40	16	2.9	-	15 M/Spool
45/18	45	18	3.0	-	15 M/Spool
54/24	54	24	3.0	-	15 M/Spool
60/29	60	29	3.0	-	15 M/Spool
76/38	76	38	3.0	-	15 M/Spool
100/49	100	49	3.0	-	15 M/Spool
Cut Length round shape tubing					
35/10	35	10	3.0	°	1000-1500mm
40/12	40	12	3.0	°	1000-1500mm
49/16	49	16	3.0	°	1000-1500mm
55/18	55	18	3.0	°	1000-1500mm
65/21	65	21	3.3	°	1000-1500mm
75/25	75	25	3.5	°	1000-1500mm
85/29	85	29	3.5	°	1000-1500mm
100/38	100	38	4.0	°	1000-1500mm
130/50	130	50	4.0	°	1000-1500mm

* Tube Shape : "-" flattening tubing; "°" round or oval shape



Applications:

This heat shrinkable medium voltage adhesive coated insulating tape is ideal for insulating rectangular or round bus bars bolted, elbow or tee connections up to 24kV.

When shrunk, the hot melt adhesive provides complete environmental and electrical insulation.

Various:

Operating temperature: -55 to + 105°C
Minimum full recovery temperature: 100°C

Shrink ratio: 30%



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 638	≥ 11.8 Mpa
Elongation	ASTM D 638	≥ 550%
Elongation after aging	ASTM D 2671 (120°, 168 hrs.)	≥ 450%
Dielectric strength	IEC 243	≥ 20KV/mm
Dielectric constant	IEC 250	3.5 (max.)
Volume resistance	IEC 93	≥ 10 ¹³ Ω.cm
Copper corrosion	ASTM D 2671 /120°, 168 hrs.	No corrosion
Flammability	ASTM D 2671	Self extinguish in 60sec.
Water absorption	ISO 62 (23°C/14days)	<0.5%

Dimensions

Size	Width (mm)	Wall Thickness After recovery (mm)	Length per Roll
ABBT-1	25	1.0±0.1	10m, 30m
ABBT-2	50	1.0±0.1	10m, 30m
ABBT-3	100	1.0±0.1	10m, 30m

MOULDED PARTS

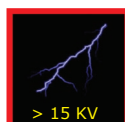
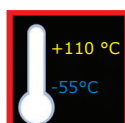


AEC/AEC-L
AMEC
ABOS
ABOS-CON
ABOS MV
AMBT-MV
AATRS

Moulded Parts

SELECTION GUIDE

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Waterproof	Page
AEC/AEC-L	Cable end caps for various cable applications	3:1	110°C	No	Yes	No	No	Yes	69
AMEC	Cable Mini End caps	3:1	125°C	No	Yes	No	No	Yes	70
ABOS	Low voltage breakout molded shapes	3:1	110°C	No	Yes	No	Yes	Yes	71-72
ABOS-CON	Conductive breakout molded shapes for MV applications	3:1	105°C	No	Yes	No	No	Yes	73
ABOS-MV	Medium voltage breakout molded shapes, anti-tracking	3:1	105°C	No	Yes	No	No	Yes	74
AMBT-MV	Bushing moulded shapes, anti-tracking	3:1	105°C	No	Yes	No	No	No	75
AATRS	Rain skirt moulded shapes for MV applications	3:1	110°C	No	Yes	No	No	Yes	76



Applications

Recommended for use both in open air and on underground power distribution cables with PVC, lead or XLPE sheets. Definitive recovery with the layer of spiral coated hot melt adhesive.

Features

Resistant to oxydation, ozone, UV radiation. Protects power cables up to 1000 V and telecommunication cables. Very easy to fit over cable end. Environment definitive watertight seal. Material: thermally stabilized crosslinked polyolefin, coated with specially hot melt adhesive.

Various

Operating temperature: -55°C to +110°C
Minimum full recovery: 120 °C

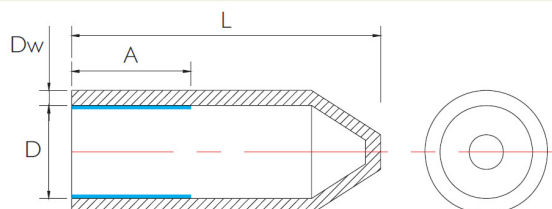
Effectively offering protection against oxidation, ozone, UV-radiation.
Coated with hot melt adhesive to ensure environment seal.

Standard color: Black.



Technical data

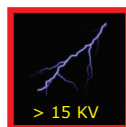
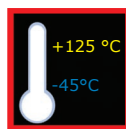
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 638	>14 MPa
Elongation at break	ASTM D 638	> 400%
Elongation at break after aging	150°C/168 hrs.	>300%
Density	ASTM D 792	1.05
Flammability	/	Flammable
Dielectric strength	IEC 243	>15 kV/mm
Volume resistance	IEC 93	>10 ¹⁴ Ω.cm



A-spiral hot melt adhesive

Dimensions

AEC	As supplied (mm)	After recovered (mm)				Cable Diameter (mm)
	D (min)	D (max)	A (±10%)	L (±10%)	Dw (±5%)	
Standard length end caps						
AEC 12/4	12	4.0	15	40	2.6	4-10
AEC 14/5	14	5.0	18	45	2.2	5-12
AEC 20/6	20	6.0	25	55	2.8	6-16
AEC 25/8.5	25	8.5	30	68	2.8	10-20
AEC 35/16	35	16.0	35	83	3.3	17-30
AEC 40/15	40	15.0	40	83	3.3	18-32
AEC 55/26	55	26.0	50	103	3.5	28-48
AEC 75/36	75	36.0	55	120	4.0	45-68
AEC 100/52	100	52.0	70	140	4.0	55-90
AEC 120/60	120	60.0	70	150	4.0	65-110
AEC 145/60	145	60.0	70	150	4.0	70-130
AEC 160/82	160	82.0	70	150	4.0	90-150
AEC 200/90	200	90.0	70	160	4.2	100-180
Extended length end cap						
AEC-L 14/5	14	5.0	30	55	2.2	5-12
AEC-L 42/15	42	15.0	40	110	3.3	18-34
AEC-L 55/23	55	23.0	70	140	3.8	25-48
AEC-L 62/23	62	23.0	70	140	3.8	25-55
AEC-L 75/32	75	32.0	70	150	4.0	40-68
AEC-L 75/36	75	36.0	70	170	4.2	45-68
AEC-L 105/45	105	45.0	65	150	4.0	50-90



Applications

AMEC is a dual wall heat shrinkable mini end cap designed to insulate and terminate connectors, electrical wires and other electrical equipment. Used to protect auto wires, shipping cable, bundle wires and metal tubes against water and moisture.

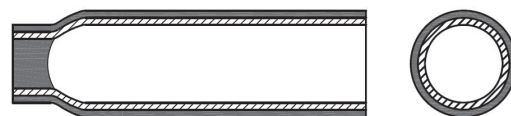
Features

Good electrical insulation and waterproof connection. Polyolefin, coated with specially hot melt adhesive.

Various

Operating temperature: -45°C to +125°C
Minimum shrink temperature: 80°C

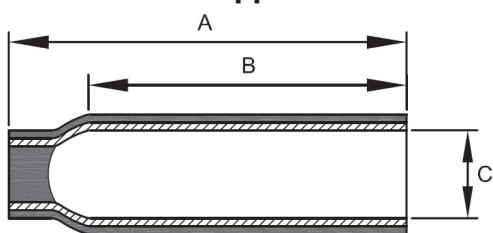
Standard color: Black.
Packaging: 50 units.
Special size or length available on request.



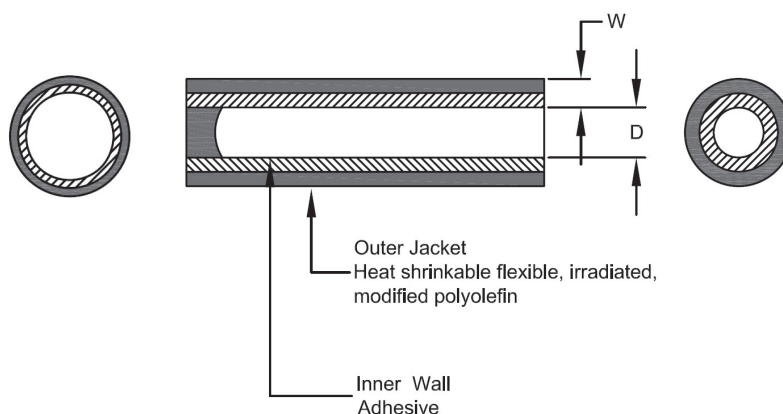
Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-45°C to +125°C
Tensile strength	ASTM D 2671	>14 MPa min.
Elongation at break	ASTM D 2671	250% min.
Elongation at break after aging	158°C/168 hrs.	>300% min.
Density	ASTM D 792	1.05
Flammability	/	Flammable
Dielectric resistance	IEC 243	15 kV/mm min.
Volume resistance	IEC 93	10 ¹⁴ Ω cm min.

As supplied

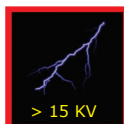
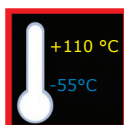


After unrestricted recovery



Dimensions

AMEC	As supplied (mm)			After recovery (mm)		
	A	B	C	D	W	Adhesive wall (min.)
	± 10%	± 10%	Min.	Max.	Min.	
3.0/1.0	25	20	3.4	1.0	1.00	0.50
4.8/1.5	30	25	5.0	1.5	1.00	0.50
6.0/2.0	30	25	6.4	2.0	1.00	0.50
9.0/3.0	35	27	10.0	3.0	1.40	0.60



Applications

ABOS LV heat shrinkable breakouts are made from radiation cross linked polyolefin. The material is weather and UV resistant and has excellent electrical insulating properties which makes them widely used in the electric power industry on low voltage terminations both indoor and outdoor.

Features

Operating temperature: - 55°C to +110°C
Minimum fully recovered temperature: 130 °C

UV Resistant.
2 cores and 3 cores.

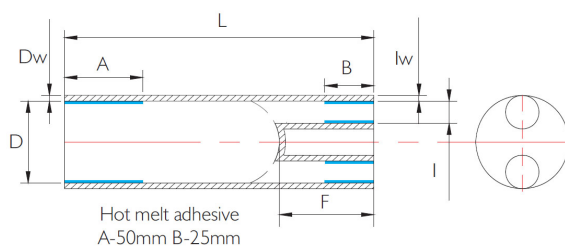
Standard color: Black.



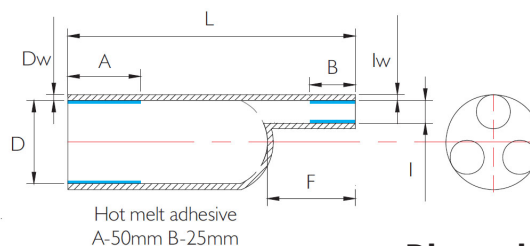
Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	13MPa (min.)
Tensile strength after thermal aging	ASTM D 2671 (120°C/168hrs.)	10 MPa (min.)
Elongation at break after thermal aging	ASTM D 2671 (120°C/168hrs.)	250% (min.)
Elongation at break	ASTM D 2671	300% (min.)
Water absorption	ISO 62	1% (max.)
Volume resistance	IEC 93	10 ¹³ Ω cm (min.)
Dielectric strength	IEC 243	15kV/mm (min.)
Flammability	/	Flammable

ABOS-LV2



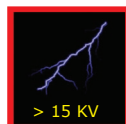
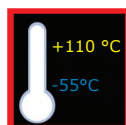
ABOS-LV3



Dimensions

ABOS	D (mm)		I (mm)		Recovered length		Recovered wall thickness	
2 cores breakout	a (min.)	b (max.)	a (min.)	b (max.)	L (mm)	F (mm)	Dw (mm)	Iw (mm)
ABOS-LV2 22/8	22	8	9	3.5	55	18	2.2	1.8
ABOS-LV2 30/12	30	12	14	4.5	93	23	2.6	2.2
ABOS-LV2 40/16	40	16	15	5.0	125	35	2.1	2.1
ABOS-LV2 60/23	60	23	25	7.5	118	29	2.6	2.6
ABOS-LV2 60/23-L	60	23	25	7.5	155	45	2.6	2.6
ABOS-LV2 90-60	90	60	30	8.5	190	50	3.0	3.0
ABOS-LV2 150/90	150	90	20	6.5	150	70	3.0	3.0
3 cores breakout	a (min.)	b (max.)	a (min.)	b (max.)	L (mm)	F (mm)	Dw (mm)	Iw (mm)
ABOS LV3 38/16	38	16	15	4.5	110	35	2.1	2.1
ABOS-LV3 40/16-L	40	16	15	4.5	125	35	2.1	2.1
ABOS-LV3 60/25	60	25	25	8.0	165	50	3.0	2.5
ABOS-LV3 60/24-L	60	24	25	8.0	180	45	3.2	2.8
ABOS-LV3 80/38	80	38	35	11.0	185	55	3.5	3.5
ABOS-LV3 80/38-L	80	38	35	11.0	215	57	4.0	4.0
ABOS-LV3 110/50	110	50	46	17.5	250	65	4.0	4.0
ABOS-LV3 125/57	125	57	55	20.0	260	75	4.0	4.0
ABOS-LV3 140/70	140	70	62	26.0	280	75	4.0	4.0
ABOS-LV3 170/77	170	77	75	28.0	280	80	4.0	4.0

* a: as supplied b: after recovery



Applications

ABOS LV heat shrinkable breakouts are made from radiation cross linked polyolefin. The material is weather and UV resistant and has excellent electrical insulating properties which makes them widely used in the electric power industry on low voltage terminations both indoor and outdoor.

Features

Operating temperature: - 55°C to +110°C
Minimum fully recovered temperature: 130 °C

UV Resistant.
4 cores and 5 cores.

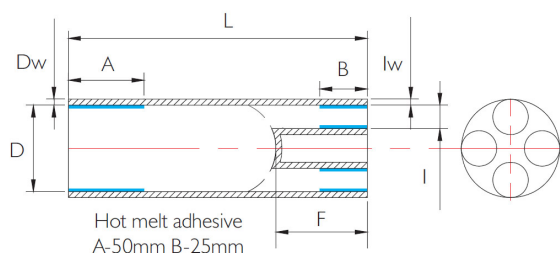
Standard color: Black.



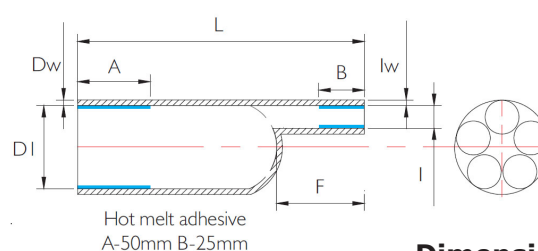
Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +110°C
Tensile strength	ASTM D 2671	13MPa (min.)
Tensile strength after thermal aging	ASTM D 2671 (120°C/168hrs)	10 MPa (min.)
Elongation at break after thermal aging	ASTM D 2671 (120°C/168hrs)	250% (min.)
Elongation at break	ASTM D 2671	300% (min.)
Water absorption	ISO 62	1% (max.)
Volume resistance	IEC 93	10 ¹³ Ω cm (min.)
Dielectric strength	IEC 243	15kV/mm (min.)
Flammability	/	Flammable

ABOS-LV4



ABOS-LV5



Dimensions

ABOS	D (mm)		I (mm)		Recovered length		Recovered wall thickness	
4 cores breakout	a (min.)	b (max.)	a (min.)	b (max.)	L (mm)	F (mm)	Dw (mm)	Iw (mm)
ABOS LV4 40/15	40	15	14	3.5	105	26	2.2	2.0
ABOS LV4 55/21	55	21	20	5.0	150	40	3.1	2.6
ABOS LV4 65/26	65	26	26	7.0	175	45	3.3	2.9
ABOS LV4 75/26	75	26	28	7.0	175	45	3.3	2.9
ABOS LV4 82/37	82	37	30	9.0	190	60	4.0	3.0
ABOS LV4 90/37	90	37	32	9.0	190	60	4.0	3.0
ABOS LV4 100/47	100	47	38	12.0	198	58	4.0	3.0
ABOS LV4 125/52	125	52	52	15.0	240	75	4.0	4.0
ABOS LV4 160/70	160	70	64	19.0	260	75	4.0	4.0
5 cores breakout	a (min.)	b (max.)	a (min.)	b (max.)	L (mm)	F (mm)	Dw (mm)	Iw (mm)
ABOS LV5 40/19	40	19	13	4.0	98	25	2.5	2.0
ABOS LV5 55/24	55	24	18	5.0	155	40	3.2	2.6
ABOS LV5 80/33	80	33	26	8.0	175	53	3.0	2.8
ABOS LV5 100/42	100	42	34	10.0	190	60	3.0	3.0

* a: as supplied b: after recovery



Applications

These three finger heat shrinkable conductive breakouts are electrically semi-conductive and ideal for creating a conductive screen on cable terminations up to 36kV cables.

The three fingers and the base are covered with insulating mastic which secures a watertight seal. They are also UV and weather resistant.

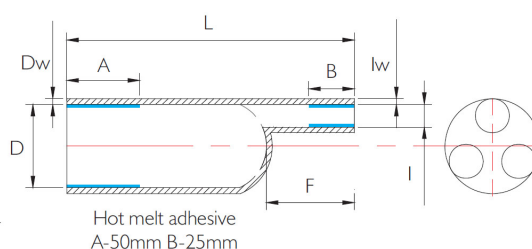
Features

Operating temperature: -55°C to +105°C
Standard color: Black.



Technical data

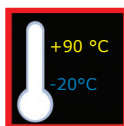
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55 °C to +105 °C
Tensile strength	ASTM D 2671	12 MPa min.
Tensile strength after thermal aging (120 °C/168 hrs.)	ASTM D 2671	10 MPa min.
Elongation at break	ASTM D 2671	250% min
Elongation at break after thermal (120 °C/168 hrs.)	ASTM D 2671	200% min
Water absorption	ISO 62	1% max
Volume resistance	IEC 93	10 ⁴ Ω.cm (max.)



Dimensions

ABOS-MV	D (mm)		I (mm)		Recovered length ±10%		Recovered wall ±10%	
	a (min)	b (max)	a (min)	b (max)	L (mm)	F (mm)	Dw (mm)	Iv (mm)
60/24	60	24	25	8.0	183	45	3.0	2.5
80/38	80	38	35	11.0	215	57	4.0	4.0
110/50	110	50	46	17.5	250	65	4.0	4.0
125/57	125	57	55	20.0	260	57	4.0	4.0
140/70	140	70	62	26.0	280	70	4.0	4.0

* a: as supplied b: after recovery



Applications

These three finger heat shrinkable anti-tracking breakouts are ideal for terminations for up to 36kV cables.

The three fingers and the base are covered with anti-tracking mastic which secures a complete environmental and electrical seal.

The breakouts are also UV resistant and flame retardant.

Features

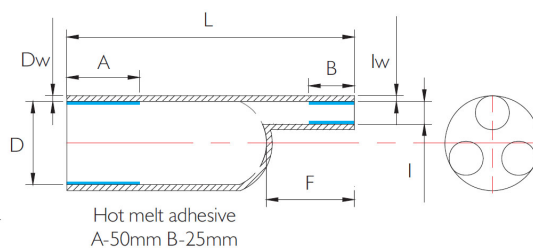
Operating temperature: -55°C to +105°C

Standard color: Red.



Technical data

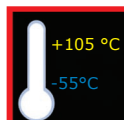
Property	Test Method	Typical Data
Operating temperature	IEC 216	-55 °C to +105 °C
Tensile strength	ASTM D 2671	8 MPa min.
Tensile strength after thermal aging (120 °C/168 hrs.)	ASTM D 2671	7 MPa min.
Elongation at break	ASTM D 2671	300% min
Elongation at break after thermal (120 °C/168 hrs.)	ASTM D 2671	200% min
Water absorption	ISO 62	1% max
Volume resistance	IEC 93	10 ¹³ Ω.cm
Dielectric strength	IEC 243	20 kV/mm min.
Resistance to tracking	ASTM D 2303	No tracking



Dimensions

ABOS-MV	D (mm)		I (mm)		Recovered length ±10%		Recovered wall ±10%	
	a (min)	b (max)	a (min)	b (max)	L (mm)	F (mm)	Dw (mm)	Iv (mm)
60/24	60	24	25	8.0	180	45	3.0	2.5
80/38	80	38	35	11.0	210	57	4.0	4.0
110/50	110	50	46	17.5	250	65	4.0	4.0
125/57	125	57	55	20.0	260	57	4.0	4.0
140/70	140	70	62	26.0	280	70	4.0	4.0
170/77	170	77	75	28.0	280	80	4.0	4.0

* a: as supplied b: after recovery



Applications

These products have been developed to fit the two basic types of bushing arrangement, right angle and in line.

Their main purpose is to minimize the required space and insulate terminations in compact size equipment and cable boxes.

Features

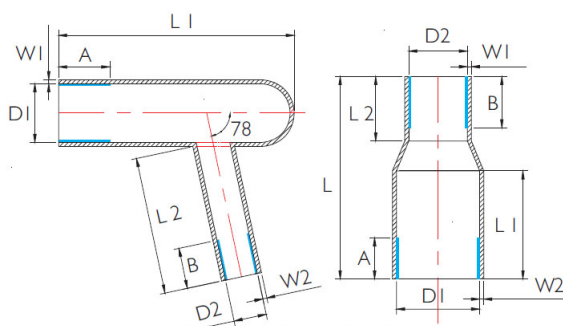
Minimum shrink temperature: 110°C

Standard color: Red.



Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +105°C
Tensile strength	ASTM D 2671	12 MPa min.
Tensile strength after aging 120 , 168 hrs.	ASTM D 2671	8.5 MPa min.
Elongation at break	ASTM D 2671	300%
Elongation at break after aging 120 , 168 hrs.	ASTM D 2671	200%
Cold bend	ASTM D 2671 (40°C/4hrs.)	No cracking
Volume resistance	ASTM D 2303	10 ¹³ Ω.cm
Dielectric strength	ASTM D 2671	15 kV/mm min.
Flammability (Oxygen index)	IEC 93	>25

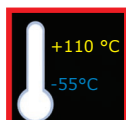


Anti-track red mastic
A-50mm B-25mm

Dimensions

Type	Order Ref No	Bushings-end Diameter		Cable-end Diameter		Bushings-end Length	Cable-end Length	Full Length
		D1(mm)	D2(mm)	D1(mm)	D2(mm)	L1(mm)	L2(mm)	L(mm)
Right angle	AMBT R	80	35	35	18	170	125	-
Right angle	AMBT R	80	35	50	26	170	125	-
Right angle	AMBT R	95	35	70	26	160	140	-
Straight	AMBT S	80	32	34	19	145	30	220
Straight	AMBT S	80	32	58	19	145	30	220

a: as supplied, b: Full recovered

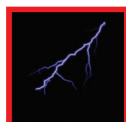


Applications

Used to provide insulation for cable outdoor termination.

Features:

Coated with weather resistant mastic.
High creep resistance and antitracking properties of the products provide maximum operation reliability.



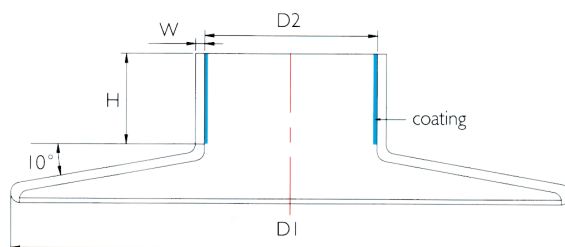
Various

Shrink temperature: minimum full recovery temperature 110 °C.
Material: no PBB's, PBBO's, or PBBE's. Polyolefin compounds coated with antitrack.
Standard color: Red.



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	≥ 13 MPa
Tensile strength after aging 120°C, 168 hrs.	ASTM D 2671	≥ 10.4 MPa
Elongation at break	ASTM D 2671	≥ 400%
Elongation at break 120C, 168 hrs.	ASTM D 2671	≥ 350%
Dielectric strength	ASTM D 2761	≥ 15KV / mm
Tracking resistance 3.75KV, 1 hr	ASTM D 2671	Pass
Electric constant	ASTM D 2303	3.0
Cold bend -40C, 4h.	IEC 250	No racking
Volume resistance	ASTM D 2303	10 ¹⁴ Ω cm
Flammability (oxygen index)	IEC 93	≥ 25
Copper corrosion 120C, 168 hrs.	ASTM D 2671	No corrosion



Dimensions

Size	As Supplied (mm)		D Recovered (mm)	h Minimum (mm)	W ±10% (mm)
AATRS	Expanded Minimum (mm)	After Recovery Maximum (nominal)			
35/12	35	12	95	18	3.0
48/20	48	20	120	21	3.0
60/20	60	20	120	21	3.0
60/30	60	30	140	25	3.0
75/30	75	30	140	25	3.0
100/35	100	35	140	35	3.0
120/45	120	45	200	35	3.0

IDENTIFICATION



AIMS SYSTEM
 AIMS-55
 AIMS-300
 AIMS-3000
 AIMS-ZH2/ZH3
 AIMS-DR3

Identification

SELECTION GUIDE

Part number	Description	Ratio	Temperature	Zero Halogen	RoHS	UL VW1	Flame retardant	Water-proof	Page
AIMS System	Inline marking system	N/A	N/A	N/A	N/A	N/A	N/A	N/A	79
AIMS-55	Flattened heat shrink tubing 2:1	2:1	125°C	No	Yes	Yes	Yes	No	80
AIMS-300	Flattened heat shrink tubing 3:1	3:1	125°C	No	Yes	Yes	Yes	No	81
AIMS-3000	Very flexible, flattened heat shrink tubing 2:1	3:1	135°C	No	Yes	Yes	Yes	No	82
AIMS-ZH2/ZH3	Halogen free, flattened heat shrink tubing 2:1	2:1/ 3:1	105°C	Yes	Yes	No	Yes	No	83
AIMS-DR3	Diesel resistant, flattened heat shrink tubing 2:1	3:1	135°C	No	Yes	Yes	Yes	No	84
APMS	Portable marking system	N/A	N/A	N/A	N/A	N/A	N/A	N/A	85

Applications

Perfect for the identification of wires by printing on flattened tubing. The AIMS printer is a high performance thermal transfer printer specially designed for high volume and 24-hour cycles. It allows to print on AIMS flattened tubing with a diameter range from 3mm to 39mm giving the optimum in flexibility, print quality and permanence.

Features

High speed thermal transfer printer with cutting and pre-scoring capabilities controlled by computer, specially designed for AIMS heat-shrink sleeves.
Superior heat-shrink tubing quality (UL VW1, RoHs).
3:1 & 2:1 shrink ratio, zero halogen and diesel resistant heat shrink available.
Meets SAE-AS5942 requirement for print permanence (Marking of Electrical Insulating Materials).

Heavy-duty printer

Superior combined properties between printer, ribbon ink & tubing. Sleeve and printing length from 5mm to spool length.
Allows to use cutter or pre-scorer.

High speed thermal transfer printer

Print speed: 30 to 125 mm/sec

Maximum print area: 100 mm

Printhead density: 300Dpi

Print Permanence Tests

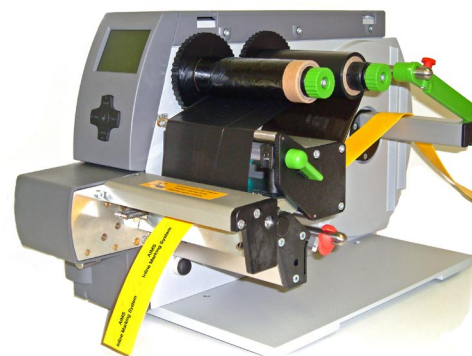
(SAE-AS5942 requirement for print permanence)

AIMS READABILITY SCALE	
Test Nb	AS5942 Issued 2004-05
1	AIMS-300 Readability Test
2	AIMS-300 Readability Test
3	AIMS-300 Readability Test
4	AIMS-300 Readability Test
5	AIMS-300 Readability Test
6	AIMS-300 Readability Test
7	AIMS-300 Readability Test
8	AIMS-300 Readability Test
9	AIMS-300 Readability Test
10	AIMS-300 Readability Test
11	AIMS-300 Readability Test
12	AIMS-300 Readability Test

AIMS System performances achieved with 3 times more SAE test requirements

Acceptable against SAE spec.

Marking Tests AIMS-300 against AS5942	
Original from printer	AIMS-300 R2
After 20 Rubs dry test	AIMS-300 R2
After 40 Rubs dry test	AIMS-300 R2
After 60 Rubs dry test	AIMS-300 R2
After 80 Rubs dry test	AIMS-300 R2
After 120 Rubs dry test	AIMS-300 R2
After 20 Iso-propyl Alcohol Rubs test	AIMS-300 R2

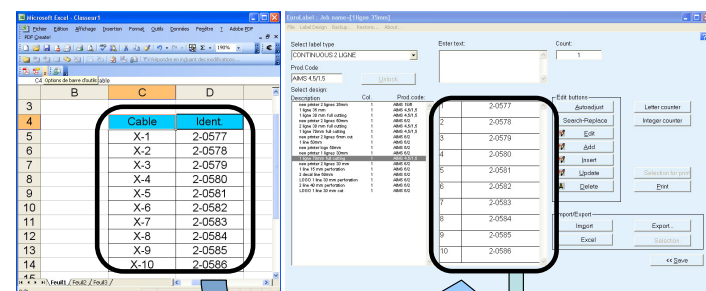


Software

Easy-to-use software

Allows to print pictures on sleeves

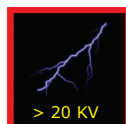
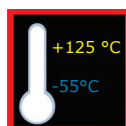
- 1 DRAG from Excel® and DROP data to AIMS software (Eurolabel)
- 2 The print job is done



Part Number	Description / Color	Model	Comments
AIMS-PRT Inline Marking Systems thermal tranfert printer			
AIMS-PRT	Printer	A4+300	-
AIMS-SOFT Inline Marking Systems software			
AIMS-SOFT	Software	Eurolabel VER 1.08	-
AIMS-ACC Inline Marking Systems printer accessories			
AIMS-ACC	AIMS Cutter	CUT	Use for cutting
AIMS-ACC	AIMS Pre-scorer	PSD	Use for pre-scoring and cutting
AIMS-ACC	AIMS Unwinder	UWR	Use for 305mm spool
AIMS-RI1515 High performance ribbon, good fluid resistance and print permanence (Meet SAE-AS5942)			
AIMS-RI1515	Black	40 mm	300 m
AIMS-RI1515	Black	100 mm	300 m
AIMS-RI2020 High performance ribbon, superior fluid resistance and print permanence (Exceed SAE-AS5942)			
AIMS-RI2020	Black	40 mm	300 m
AIMS-RI2020	Black	100 mm	300 m

See technical data sheets for individual AIMS flattened tubing.

Two flattened tubing spools sizes available: diameter 305 mm (100 m to 50 m), use with AIMS unwinder.
diameter 200 mm (30 m).



Applications

Ideal for wires and cables identification by printing on tubing. AIMS-55 can also provide terminal insulation. Suitable for a multitude of technical needs generated by the industrial sectors which are sophisticated (automotive, electrical, professional electronics, transport, construction electric). Easy to implement.

Features

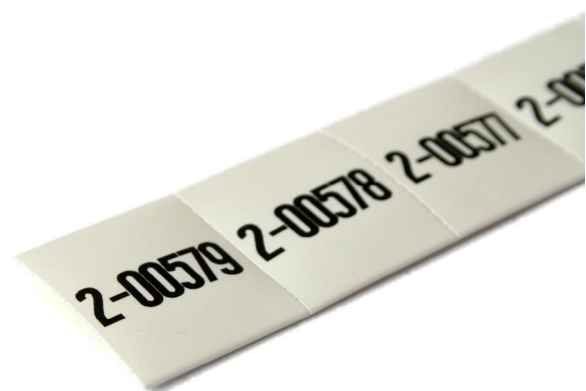
Thin wall flame retarded radiation cross-linked polyolefin heat shrink tubing.
Shrink ratio 2:1, RoHS compliant.

Various

Operating temperature: -55°C to + 125°C
Minimum shrink temperature 70°C
Minimum fully recovery temperature 100°C
Approvals:
Meet UL 224 125 °C VW-1 600V

Print performance with AIMS System:
Print legible after 50 rubs (Meet: SAE AS81531, 4.6.2)
Print legible after 30 strokes (Meet: MIL-STD-202, method 215)

Standard color:
Yellow or white. Others available on request.



Technical data

Property	Test Method	Typical Data
Operating temperature	UL 224	-55°C to +125°C
Tensile strength	ASTM D 2671	> 14 MPa
Ultimate elongation	ASTM D 2671	400%
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	ASTM D 2671	<30%
Heat aging		
Tensile strength	158°C/168 hrs.	> 12MPa
Ultimate elongation		> 350%
Flammability	VW-1	Pass
Dielectric strength	IEC 243	> 20 KV/mm
Volume resistance	IEC 93	> 10 ¹⁴ Ω.cm
Copper stability	UL 224	Pass

Dimensions

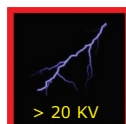
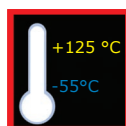
Part Number	Colors / description	Size/Model	Shape	As Supplied / Inside diameter (mm)	After recovery/ Inside diameter (mm)	Spool length	
						Spool diam. 200 mm	Spool diam. 305 mm
AIMS-55 Flattened polyolefin tubing 2:1 ratio, 125 °C, RoHs, UL VW1							
AIMS-55	Yellow, White	3.2/1.6	Flat	3.2	1.6	30 m	100 m
AIMS-55	Yellow, White	4.8/2.4	Flat	4.8	2.4	30 m	100 m
AIMS-55	Yellow, White	6.4/3.2	Flat	6.4	3.2	25 m	100 m
AIMS-55	Yellow, White	9.5/4.8	Flat	9.5	4.8	20 m	75 m
AIMS-55	Yellow, White	12.7/6.4	Flat	12.7	6.4	20 m	75 m
AIMS-55	Yellow, White	19.1/9.5	Flat	19.1	9.5	20 m	50 m
AIMS-55	Yellow, White	25.4/12.7	Flat	25.4	12.7	15 m	50 m
AIMS-55	Yellow, White	38.1/19.1	Flat	38.1	19.1	10 m	50 m
AIMS-RI1515 High performance ribbon, good fluid resistance and print permanence (Meet SAE-AS5942)							
AIMS-RI1515	Black	40 mm	-	-	-	300 m	
AIMS-RI1515	Black	100 mm	-	-	-	300 m	
AIMS-RI2020 High performance ribbon, superior fluid resistance and print permanence (Exceed SAE-AS5942)							
AIMS-RI2020	Black	40 mm	-	-	-	300 m	
AIMS-RI2020	Black	100 mm	-	-	-	300 m	

Two flattened tubing spools sizes available: diameter 305 mm (100 m to 50 m), use with AIMS unwinder.
diameter 200 mm (30 m).

IDENTIFICATION

AIMS-300

Flattened heat shrink tubing 3:1



Applications

Ideal for wires and cables identification by printing on tubing. AIMS-55 can also provide terminal insulation. Suitable for a multitude of technical needs generated by the industrial sectors which are sophisticated (automotive, electrical, professional electronics, transport, construction electric). Easy to implement.

Features

Thin wall flame retarded radiation cross-linked polyolefin heat shrink tubing.
Shrink ratio 3:1, RoHs compliant.

Various

Operating temperature: -55°C to + 125°C
Minimum shrink temperature 70°C
Minimum fully recovery temperature 100°C

Approvals:

Meet : UL 224 125 °C VW-1 600V.

Print performance with AIMS System:

Print legible after 50 rubs (Meet: SAE AS81531, 4.6.2)

Print legible after 30 strokes (Meet: MIL-STD-202, method 215)

Standard color:

Yellow or white. Others available on request.



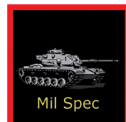
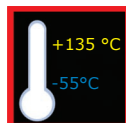
Technical data

Property	Test Method	Typical Data
Operating temperature	UL 224	-55°C to + 125°C
Tensile strength	ASTM D 2671	>14 Mpa
Elongation at break	ASTM D 2671	>400%
Elongation at break after aging	158°C/168 hrs.	>300%
Longitudinal shrinkage	UL 224	0 to -10%
Dielectric strength	IEC 243	>20 kV/mm
Volume resistance	IEC 93	>10 ¹⁴ Ω.cm
Flammability	VW-1	Pass
Copper stability	ASTM D 2671	Pass
Eccentricity	ASTM D 2671	<30%

Dimensions

Part Number	Colors / description	Size/Model	Shape	As Supplied / Inside diameter (mm)	After recovery/ Inside diameter (mm)	Spool length	
						Spool diam. 200 mm	Spool diam. 305 mm
AIMS-300 Flattened polyolefin tubing 3:1 ratio, 125 °C, RoHs, UL VW1							
AIMS-300	Yellow, White	3/1	Flat	3	1	30 m	100 m
AIMS-300	Yellow, White	4.5/1.5	Flat	4.5	1.5	30 m	100 m
AIMS-300	Yellow, White	6/2	Flat	6	2	25 m	100 m
AIMS-300	Yellow, White	9/3	Flat	9	3	20 m	75 m
AIMS-300	Yellow, White	12/4	Flat	12	4	20 m	75 m
AIMS-300	Yellow, White	18/6	Flat	18	6	20 m	50 m
AIMS-300	Yellow, White	24/8	Flat	24	8	15 m	50 m
AIMS-300	Yellow, White	39/13	Flat	39	13	10 m	50 m
AIMS-RI1515 High performance ribbon, good fluid resistance and print permanence (Meet SAE-AS5942)							
AIMS-RI1515	Black	40 mm	-	-	-	300 m	
AIMS-RI1515	Black	100 mm	-	-	-	300 m	
AIMS-RI2020 High performance ribbon, superior fluid resistance and print permanence (Exceed SAE-AS5942)							
AIMS-RI2020	Black	40 mm	-	-	-	300 m	
AIMS-RI2020	Black	100 mm	-	-	-	300 m	

Two flattened tubing spools sizes available: diameter 305 mm (100 m to 50 m), use with AIMS unwinder.
diameter 200 mm (30 m).



Applications

Ideal for wires and cables identification by printing on tubing. AIMS-3000 can also provide terminal insulation. Suitable for a multitude of technical needs generated by the industrial sectors which are sophisticated (automotive, electrical, professional electronics, transport, construction electric). Easy to implement.

Features

Thin wall flame retarded radiation cross-linked polyolefin heatshrink tubing.
Shrink ratio 3:1, RoHS compliant.

Various

Operating temperature: -55°C to +135°C
Minimum shrink temperature: 70°C
Minimum fully recovery temperature: 100°C
Approval:
UL 224 125 °C VW-1 600V (E204071)
Meet SAE-AMS-DTL-23053/5 Class 1&3

Print performance with AIMS System:
Print legible after 50 rubs (Meet: SAE AS81531, 4.6.2).
Print legible after 30 strokes (Meet: MIL-STD-202, method 215).

Standard color:
Yellow or white. Others available on request.



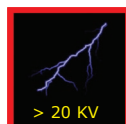
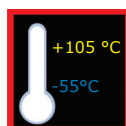
Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	14 Mpa
Elongation at break	ASTM D 2671	800%
Tensile strength after aging	ASTM D 2671 (175°C/168 hrs.)	14 Mpa
Elongation at break after aging	ASTM D 2671 (175°C/168 hrs.)	350%
Flammability	UL 224 VW-1 SAE-AMS-DTL-23053/5	Pass
Heat shock (250°C, 4 hrs.)	ASTM D 2671	No cracking
Cold bend (-55°C, 4 hrs.)	ASTM D 2671	No cracking
Dielectric strength	ASTM D 150	20 kV/mm
Volume resistance	ASTM D 876	10 ¹⁴ Ω.cm
Copper corrosion	UL 224	Pass
Water absorption	ASTM D 570	0.15%
Chemical resistance	SAE-AMS-DTL-23053/5	Pass
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	UL 224	<30%

Dimensions

Part Number	Colors / description	Size/Model	Shape	As Supplied / Inside diameter (mm)	After recovery/ Inside diameter (mm)	Spool length	
						Spool diam. 200 mm	Spool diam. 305 mm
AIMS-3000 Flattened polyolefin tubing 3:1 ratio, 135 °C, RoHs, UL VW1							
AIMS-3000	Yellow, White	3/1	Flat	3	1	30 m	100 m
AIMS-3000	Yellow, White	4.5/1.5	Flat	4.5	1.5	30 m	100 m
AIMS-3000	Yellow, White	6/2	Flat	6	2	25 m	100 m
AIMS-3000	Yellow, White	9/3	Flat	9	3	20 m	75 m
AIMS-3000	Yellow, White	12/4	Flat	12	4	20 m	75 m
AIMS-3000	Yellow, White	18/6	Flat	18	6	20 m	50 m
AIMS-3000	Yellow, White	24/8	Flat	24	8	15 m	50 m
AIMS-3000	Yellow, White	39/13	Flat	39	13	10 m	50 m
AIMS-RI1515 High performance ribbon, good fluid resistance and print permanence (Meet SAE-AS5942)							
AIMS-RI1515	Black	40 mm	-	-	-	300 m	
AIMS-RI1515	Black	100 mm	-	-	-	300 m	
AIMS-RI2020 High performance ribbon, superior fluid resistance and print permanence (Exceed SAE-AS5942)							
AIMS-RI2020	Black	40 mm	-	-	-	300 m	
AIMS-RI2020	Black	100 mm	-	-	-	300 m	

Two flattened tubing spools sizes available: diameter 305 mm (100 m to 50 m), use with AIMS unwinder.
diameter 200 mm (30 m).



Applications

Ideal for wires and cables identification by printing on tubing. It is made with specially halogen free polyolefin. AIMS-ZH2/ZH3 can also provide terminal insulation. Suitable for a multitude of technical needs generated by the industrial sectors which are sophisticated (automotive, electrical, professional electronics, transport, construction electric). Easy to implement.

Features

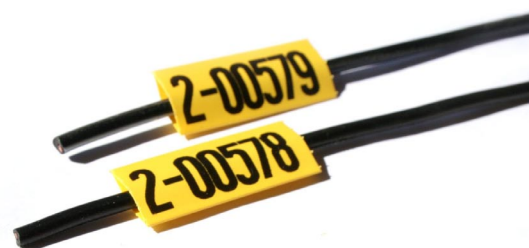
Thin wall flame retarded radiation cross-linked polyolefin heatshrink tubing
Shrink ratio 3:1, RoHS compliant.

Various

Operating temperature: -55°C to +105°C
Minimum shrink temperature: 70 °C
Minimum fully recovery temperature: 100 °C

Print performance with AIMS System:
Print legible after 50 rubs (Meet: SAE AS81531, 4.6.2).
Print legible after 30 strokes (Meet: MIL-STD-202, method 215).

Standard color:
Yellow or white. Others available on request.



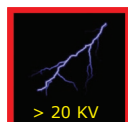
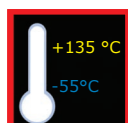
Technical data

Property	Test Method	Typical Data
Operating temperature	IEC 216	-55°C to +105°C
Tensile strength	ASTM D 2671	>10.4 MPa
Elongation at break	ASTM D 2671	>200%
Longitudinal shrinkage	UL 224	±5%
Eccentricity	ADTM D 2761	<30%
Heat shock	250°C/4 hrs.	No cracking
Heat aging		
Tensile strength	136°C, 168 hrs.	9.0MPa
Ultimate elongation		>150%
Flammability	SAE-AMS-DTL-23053/5	Pass

Dimensions

Part Number	Colors / description	Size/Model	Shape	As Supplied / Inside diameter (mm)	After recovery/ Inside diameter (mm)	Spool length	
						Spool diam. 200 mm	Spool diam. 305 mm
AIMS-ZH2 Flattened Halogen free tubing 2:1 ratio, 105°C, RoHs, flame retardant							
AIMS-ZH2	Yellow, White	3.2/1.6	Flat	3.2	1.6	30 m	100 m
AIMS-ZH2	Yellow, White	4.8/2.4	Flat	4.8	2.4	30 m	100 m
AIMS-ZH2	Yellow, White	6.4/3.2	Flat	6.4	3.2	25 m	100 m
AIMS-ZH2	Yellow, White	9.5/4.8	Flat	9.5	4.8	20 m	75 m
AIMS-ZH2	Yellow, White	12.7/6.4	Flat	12.7	6.4	20 m	75 m
AIMS-ZH2	Yellow, White	19.1/9.5	Flat	19.1	9.5	20 m	50 m
AIMS-ZH2	Yellow, White	25.4/12.7	Flat	25.4	12.7	15 m	50 m
AIMS-ZH2	Yellow, White	38.1/19.1	Flat	38.1	19.1	10 m	50 m
AIMS-ZH3 Flattened Halogen free tubing 3:1 ratio, 105°C, RoHs, flame retardant							
AIMS-ZH3	Yellow, White	3/1	Flat	3	1	30 m	100 m
AIMS-ZH3	Yellow, White	4.5/1.5	Flat	4.5	1.5	30 m	100 m
AIMS-ZH3	Yellow, White	6/2	Flat	6	2	25 m	100 m
AIMS-ZH3	Yellow, White	9/3	Flat	9	3	20 m	75 m
AIMS-ZH3	Yellow, White	12/4	Flat	12	4	20 m	75 m
AIMS-ZH3	Yellow, White	18/6	Flat	18	6	20 m	50 m
AIMS-ZH3	Yellow, White	24/8	Flat	24	8	15 m	50 m
AIMS-ZH3	Yellow, White	39/13	Flat	39	13	10 m	50 m
AIMS-RI1515 High performance ribbon, good fluid resistance and print permanence (Meet SAE-AS5942)							
AIMS-RI1515	Black	40 mm	-	-	-	300 m	
AIMS-RI1515	Black	100 mm	-	-	-	300 m	
AIMS-RI2020 High performance ribbon, superior fluid resistance and print permanence (Exceed SAE-AS5942)							
AIMS-RI2020	Black	40 mm	-	-	-	300 m	
AIMS-RI2020	Black	100 mm	-	-	-	300 m	

Two flattened tubing spools sizes available: diameter 305 mm (100 m to 50 m), use with AIMS unwinder.
diameter 200 mm (30 m).



Applications

Ideal for wires and cables identification by printing on tubing. AIMS-DR3 flattened tubing is manufactured with specially developed formulation and technology, which makes the tubing resistant to abrasion and to common fluids and solvents (Diesel).

Features

Thin wall flame retarded radiation cross-linked polyolefin heatshrink tubing
Shrink ratio 3:1, RoHS compliant.

Various

Operating temperature: -55°C to + 135°C
Minimum fully recovery temperature: 130 °C

Approvals:

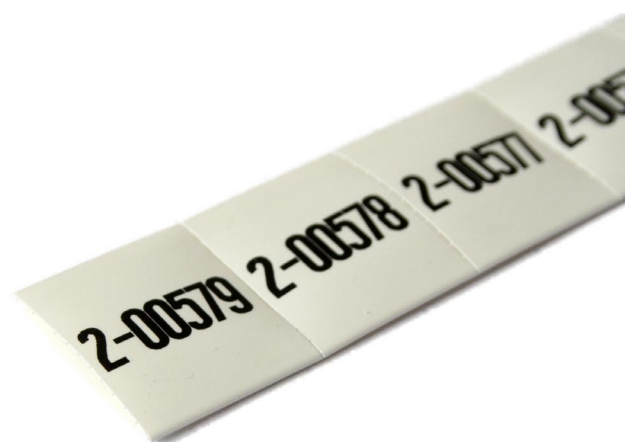
Meet : UL 224 VW-1, 125°C 600V
SAE-AMS-DTL-23053/5 Class 1 & 3

Print performance with AIMS System:

Print legible after 50 rubs (Meet : SAE AS81531, 4.6.2).
Print legible after 30 strokes (Meet : MIL-STD-202, method 215).

Standard color:

Yellow, white. Others available on request.



Technical data

Property	Test Method	Typical Data
Tensile strength	ASTM D 2671	16MPa
Elongation at break	ASTM D 2671	500%
Tensile strength after aging (175°C/168hrs.)	ASTM D 2671	14MPa
Elongation after aging (175°C/168hrs.)	ASTM D 2671	250%
Flammability	Self-extinguible in 30 sec.	Pass
Heat shock (250°C/4hrs.)	ASTM D 2671	No cracking
Cold bend test (-55°C/4hrs.)	ASTM D 2671	No cracking
Dielectric strength	ASTM D 150	20kV/mm
Volume resistance	ASTM D 876	>10 ¹⁴ Ω.cm
Copper corrosion	UL 224	Pass
Water absorption	ASTM D 570	0.15%
Chemical resistance	SAE-AMS-DTL-23053/5	Pass
Longitudinal shrinkage	UL 224	0±5%
Eccentricity	UL 224	<30%

Dimensions

Part Number	Colors / description	Size/Model	Shape	As Supplied / Inside diameter (mm)	After recovery/ Inside diameter (mm)	Spool length	
						Spool diam. 200 mm	Spool diam. 305 mm
AIMS-3000 Flattened polyolefin tubing 3:1 ratio, 135 °C, RoHs, UL VW1							
AIMS-DR3	Yellow, White	3/1	Flat	3	1	30 m	100 m
AIMS-DR3	Yellow, White	4.5/1.5	Flat	4.5	1.5	30 m	100 m
AIMS-DR3	Yellow, White	6/2	Flat	6	2	25 m	100 m
AIMS-DR3	Yellow, White	9/3	Flat	9	3	20 m	75 m
AIMS-DR3	Yellow, White	12/4	Flat	12	4	20 m	75 m
AIMS-DR3	Yellow, White	18/6	Flat	18	6	20 m	50 m
AIMS-DR3	Yellow, White	24/8	Flat	24	8	15 m	50 m
AIMS-RI1515 High performance ribbon, good fluid resistance and print permanence (Meet SAE-AS5942)							
AIMS-RI1515	Black	40 mm	-	-	-	300 m	
AIMS-RI1515	Black	100 mm	-	-	-	300 m	
AIMS-RI2020 High performance ribbon, superior fluid resistance and print permanence (Exceed SAE-AS5942)							
AIMS-RI2020	Black	40 mm	-	-	-	300 m	
AIMS-RI2020	Black	100 mm	-	-	-	300 m	

Two flattened tubing spools sizes available: diameter 305 mm (100 m to 50 m), use with AIMS unwinder.
diameter 200 mm (30 m).

Applications

APMS is designed for printing on heat shrinkable tubing. It is light enough to be used everywhere (only 2 kg) and can be used for wiring identifications, maintenance or small workshops. The speed of the printer allows to print 30 sleeves/min (20 mm sleeves, 5 caracteres, semi-cut) with high printing quality.

Features

Diameter of tubing from 3 to 6,4 mm
Easy to use device

Two cutting functions:

- complete cut
- pre-cutting in caterpillar form (semi-cutting function)

Heat shrinking tubing specially designed for printing
Length of marking limited only by spool length

Available tubing colors: Yellow, white. Other on request.



Technical data

Printer Properties	Value
Printing Method	Thermal Transfer
Speed	25 mm, 18.5 mm/sec. (tubes)
Tube cutting	Full Automatic or Half Cutting
Resolution	300 dpi
Power	220 V
Weight	2 kgs
Dimension	250 x 300 x 85mm

Dimensions

APMS		ACS Portable Marking System					
Type	Colors	Size	Shape	Before Shrinkage (mm)	After Shrinkage (mm)	Spool Length	Unit
Thin wall tubing 125°C VW1 RoHS 2:1							
APMS-55	White, Yellow	1/8"	°	3.2	1.6	10	1 Box
APMS-55	White, Yellow	3/16"	°	4.8	2.4	10	1 Box
APMS-55	White, Yellow	1/4"	°	6.4	3.2	10	1 Box
Thin wall tubing 125°C VW1 RoHS 3:1							
APMS-300	White, Yellow	1/8	°	3	1	10	1 Box
APMS-300	White, Yellow	1/4	°	6	2	10	1 Box
Thin wall tubing 105°C - Flexible, Halogen free							
APMS-ZH	White, Yellow	1/8"	°	3.2	1.6	10	1 Box
APMS-ZH	White, Yellow	3/16"	°	4.8	2.4	10	1 Box
APMS-ZH	White, Yellow	1/4"	°	6.4	3.2	10	1 Box
Portable printer							
APRT-01	-	-	-	-	-	-	1 Piece
Ribbon ink							
ARI-01	Black	-	-	-	-	100	5 Pieces

Quality Management System ISO 9001:2000

Around Cable Systems© is certified ISO 9001:2000.

CERTIFICATE



Management system as per
ISO 9001:2000

In accordance with TÜV CERT procedures, it is hereby certified that

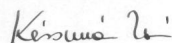
Around Cable Systems Kft.
1091 Budapest
Kálvin tér 7.
Site: 25451 Quickborn, Robert Bosch str. 20-24.
Hungary

applies a quality system in line with the above standard for the following scope

**trading of thermo-shrinkable plastic tubes, injection moulded and
thermo-shrinkable shapes, insulating and mastic materials.**

Certificate Registration No. 75 100 10220
Contract No. 0041-40142/1354

Valid until 2011-06-25



TÜV CERT Certification Body
TÜV Rheinland InterCert

Budapest, 2008-06-26

This certification was conducted in accordance with the TÜV CERT auditing and certification procedures and is
subject to regular surveillance audits.

TÜV Rheinland InterCert Kft. 1132 Budapest, Váci út 48/a-b. www.tuvrheinland.hu



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