

POWER CABLE ACCESSORIES

Heat Shrink Cable Accessories Catalogue

Termination and joint kits, stress control and insulation tubes, molded parts, busbar insulation and cable repair for power networks from 0.6/1 kV to 26/35 kV.



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Certification

ISO 9001:2015	Quality management system
IATF 16949:2016	Automotive quality management
ISO 14001:2015	Environmental management
ISO 45001:2018	Occupational health and safety
GJB 9001C-2017	Defence quality management
UL 224 E341796	Extruded insulating tubing
CE / RoHS	European conformity and restricted substances
CCS / ABS / DNV	Marine classification society approvals

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HEAT SHRINK CABLE ACCESSORY KITS

C1 Low Voltage Heat Shrink Cable Accessory Kits

0.6/1 kV

Complete 1 kV termination and joint kits for 1 to 6 core cable from 4 mm² to 400 mm² supplied as a single part number



Voltage Class	0.6/1 (1.2) kV
Operating Temperature	-55 to 105 °C
Cores Covered	1 2 3 4 5 and 6 core
Conductor Range	4 to 400 mm ²
Supply Form	Complete kit in one carton
Withstand Test	4 kV for 1 minute

Introduction

Single core, 2 cores, 3 cores, 4 cores and 5 cores cable accessories. Suitable for protection of indoor and outdoor electric power cable joint and termination up to 1kV.

Features

- Voltage class: 0.6kV/1kV
- Operating temperature: -55 to 105°C
- Supplied by set, with the materials in the kit
- Well resistance against weather and damage

Technical Data

	Property Work frequency voltage withstand	Test Method 4 kV/ 1 min.	Requirement No breakdown, no flashover
	Load cycling (3 times)	5 hrs heating* 3 hrs cooling	2.4 kV/ 4 hrs No breakdown, no flashover
	Work frequency voltage withstand	2.4 kV/ 4 hrs	No breakdown, no flashover
	Note: *Conductor temperature 75°C		

0.6/1 (1.2) kV Selection

	Termination Size of conductor (mm ²)	Cable core number	Product description	Joint Size of conductor (mm ²)	Cable core number	Product description
	4-6	1	NSY-1100	4-6	1	JSY-1100
	10-16	1	NSY-110	10-16	1	JSY-110
	25-50	1	NSY-111	25-50	1	JSY-111
	70-120	1	NSY-112	70-120	1	JSY-112
	150-240	1	NSY-113	150-240	1	JSY-113
	300-400	1	NSY-114	300-400	1	JSY-114
	4-6	2	NSY-1200	4-6	2	JSY-1200
	10-16	2	NSY-120	10-16	2	JSY-120
	25-50	2	NSY-121	25-50	2	JSY-121
	70-120	2	NSY-122	70-120	2	JSY-122
	150-240	2	NSY-123	150-240	2	JSY-123
	300-400	2	NSY-124	300-400	2	JSY-124
	4-6	3	NSY-1300	4-6	3	JSY-1300

	Termination Size of conductor (mm2)	Cable core number	Product description	Joint Size of conductor (mm2)	Cable core number	Product description
	10-16	3	NSY-130	10-16	3	JSY-130
	25-50	3	NSY-131	25-50	3	JSY-131
	70-120	3	NSY-132	70-120	3	JSY-132
	150-240	3	NSY-133	150-240	3	JSY-133
	300-400	3	NSY-134	300-400	3	JSY-134
	4-6	4	NSY-1400	4-6	4	JSY-1400
	10-16	4	NSY-140	10-16	4	JSY-140
	25-50	4	NSY-141	25-50	4	JSY-141
	70-120	4	NSY-142	70-120	4	JSY-142
	150-240	4	NSY-143	150-240	4	JSY-143
	300-400	4	NSY-144	300-400	4	JSY-144
	4-6	5	NSY-1500	4-6	5	JSY-1500
	10-16	5	NSY-150	10-16	5	JSY-150
	25-50	5	NSY-151	25-50	5	JSY-151
	70-120	5	NSY-152	70-120	5	JSY-152
	150-240	5	NSY-153	150-240	5	JSY-153
	300-400	5	NSY-154	300-400	5	JSY-154
	10-16	6	NSY-160	10-16	6	JSY-160
	25-50	6	NSY-161	25-50	6	JSY-161
	70-120	6	NSY-162	70-120	6	JSY-162
	150-240	6	NSY-163	150-240	6	JSY-163
	300-400	6	NSY-164	300-400	6	JSY-164

HEAT SHRINK CABLE ACCESSORY KITS

C15 Medium Voltage Heat Shrink Cable Accessory Kits 8.7/15 kV

Indoor outdoor and joint kits for 8.7/15 (17.5) kV single core and three core cable tested to IEC 60502-4



Voltage Class	8.7/15 (17.5) kV
Operating Temperature	-55 to 105 °C
Standard	IEC 60502-4:2010-12 and GB/T 12706.4
Cores Covered	1 and 3 core
Conductor Range	25 to 400 mm ²
Partial Discharge	10 pC maximum at 1.73 U ₀

Introduction

Single core, 3 cores cable accessories. Suitable for protection of indoor and outdoor electric power cable joint and termination up to 8.7/15 (17.5) kV.

Features

- Voltage class: 8.7/15 (17.5) kV
- Operating temperature: -55°C to 105°C
- Supplied by set, with the materials in the kit
- Well resistance against weather and damage
- Compliant Standard: IEC 60502-4: 2010-12, GB/T 12706.4

Test Procedures and Requirements for Heat-Shrinkable Terminations

No.	Test	Condition	Requirements	Test Sequence 1.1	1.2	1.3	1.4	1.5
1	AC and DC Voltage	4.5 U ₀ , 5min (AC) and 4.0 U ₀ , 15min (DC)	No breakdown, No flashover	X	X	X		
2	AC (wet, indoor)	4.0 U ₀ , 1min	No breakdown, No flashover	X				
3	Partial discharge	At 1.73 U ₀ (ambient temperature)	10 pC max.	X				
4	Impulse at θ _t	10 impulses of each polarity	No breakdown, No flashover	X				
5	Heating cycles in air (indoor)	60 cycles at θ _t and 2.5 U ₀	No breakdown, No flashover	X				
6	Immersion test (outdoor)	10 cycles at θ _t (IEC 61442: 2005 9.4)	/	X				

No.	Test	Condition	Requirements	Test Sequence 1.1	1.2	1.3	1.4	1.5
7	Partial discharge	At 1.73 U ₀ (at θ_t and ambient temperature)	10 pC max.		X	X		
8	Thermal short-circuit (screen)	two short-circuits at I _{sc} of the cable screen	No visible deterioration		X	X		
9	Thermal short-circuit (conductor)	two short-circuits to raise conductor to θ_{sc} of the cable	No visible deterioration		X	X		
10	Dynamic short-circuit	One short-circuit at I _d	No visible deterioration			X		
11	Impulse (ambient temperature)	10 impulses of each polarity	No breakdown, No flashover	X	X	X		
12	AC voltage	2.5 U ₀ , 15min	No breakdown, No flashover	X	X	X		
13	Humidity (Indoor)	300 hrs at 1.25 U ₀ , tripping times not more than three	No breakdown or flashover, no significant damage.				X	
14	Salt fog (Outdoor)	1000 hrs at 1.25 U ₀ , tripping times not more than three	No breakdown or flashover, no significant damage.					X
15	Examination	For information only	GB/T 12706.4 IEC 60502-4	X	X	X	X	X

Test Procedures and Requirements for Heat-Shrinkable Joint

No.	Test	Condition	Requirements	Test Sequence 2.1	2.2	2.3
1	AC and DC Voltage	4.5 U ₀ , 5min (AC) and 4.0 U ₀ , 15min (DC)	No breakdown, No flashover	X	X	X
2	Partial discharge	At 1.73 U ₀ (ambient temperature)	10 pC max.	X		
3	Impulse at θ_t	10 impulses of each polarity	No breakdown, No flashover	X		
4	Heating cycles in air	30 cycles at θ_t and 2.5 U ₀	No breakdown, No flashover	X		
5	Heating cycles in air (under water)	30 cycles at θ_t and 2.5 U ₀ , water height 1m	No breakdown, No flashover	X		

No.	Test	Condition	Requirements	Test Sequence 2.1	2.2	2.3
6	Partial discharge	At 1.73 U ₀ (at θ_t and ambient temperature)	10 pC max.	X		
7	Thermal short-circuit (screen)	two short-circuits at I _{sc} of the cable screen	No visible deterioration		X	X
8	Thermal short-circuit (conductor)	two short-circuits to raise conductor to θ_{sc} of the cable	No visible deterioration		X	X
9	Dynamic short-circuit	One short-circuit at I _d	No visible deterioration			X
10	Impulse (ambient temperature)	10 impulses of each polarity	No breakdown, No flashover	X	X	X
11	AC Voltage	2.5 U ₀ , 15min	No breakdown, No flashover	X	X	X
12	Examination	For information only	GB/T 12706.4 IEC 60502-4	X	X	X

8.7/15 (17.5) kV Selection

	Size of conductor (mm ²) 25-50	Cable core number 3	Product description NSY-1031	Installation Location Terminations Indoor
	70-120	3	NSY-1032	Terminations Indoor
	150-240	3	NSY-1033	Terminations Indoor
	300-400	3	NSY-1034	Terminations Indoor
	25-50	3	WSY-1031	Terminations Outdoor
	70-120	3	WSY-1032	Terminations Outdoor
	150-240	3	WSY-1033	Terminations Outdoor
	300-400	3	WSY-1034	Terminations Outdoor
	25-50	3	JSY-1031	Joint
	70-120	3	JSY-1032	Joint
	150-240	3	JSY-1033	Joint
	300-400	3	JSY-1034	Joint
	25-50	1	NSY-1011	Terminations Indoor
	70-120	1	NSY-1012	Terminations Indoor
	150-240	1	NSY-1013	Terminations Indoor
	300-400	1	NSY-1014	Terminations Indoor
	25-50	1	WSY-1011	Terminations Outdoor
	70-120	1	WSY-1012	Terminations Outdoor
	150-240	1	WSY-1013	Terminations Outdoor
	300-400	1	WSY-1014	Terminations Outdoor
	25-50	1	JSY-1011	Joint
	70-120	1	JSY-1012	Joint
	150-240	1	JSY-1013	Joint
	300-400	1	JSY-1014	Joint

HEAT SHRINK CABLE ACCESSORY KITS

C35 Medium Voltage Heat Shrink Cable Accessory Kits 26/35 kV

The highest voltage class in the range covering 26/35 (40.5) kV single core and three core cable to 630 mm²



Voltage Class	26/35 (40.5) kV
Operating Temperature	-55 to 105 °C
Standard	IEC 60502-4:2010-12 and GB/T 12706.4
Cores Covered	1 and 3 core
Conductor Range	50 to 630 mm ²
Partial Discharge	10 pC maximum at 1.73 U ₀

Introduction

Single core, 3 cores cable accessories. Suitable for protection of indoor and outdoor electric power cable joint and termination up to 26/35 (40.5) kV.

Features

- Voltage class: 26/35 (40.5) kV
- Operating temperature: -55°C to 105°C
- Supplied by set, with the materials in the kit
- Well resistance against weather and damage
- Compliant Standard: IEC 60502-4: 2010-12, GB/T 12706.4

Test Procedures and Requirements for Heat-Shrinkable Terminations

No.	Test	Condition	Requirements	Test Sequence 1.1	1.2	1.3	1.4	1.5
1	AC and DC Voltage	4.5 U ₀ , 5min (AC) and 4.0 U ₀ , 15min (DC)	No breakdown, No flashover	X	X	X		
2	AC (wet, indoor)	4.0 U ₀ , 1min	No breakdown, No flashover	X				
3	Partial discharge	At 1.73 U ₀ (ambient temperature)	10 pC max.	X				
4	Impulse at θt	10 impulses of each polarity	No breakdown, No flashover	X				
5	Heating cycles in air (indoor)	60 cycles at θt and 2.5 U ₀	No breakdown, No flashover	X				

No.	Test	Condition	Requirements	Test Sequence 1.1	1.2	1.3	1.4	1.5
6	Immersion test(outdoor)	10 cycles at θ_t (IEC 61442: 2005 9.4)	/	X				
7	Partial discharge	At 1.73 U ₀ (at θ_t and ambient temperature)	10 pC max.		X	X		
8	Thermal short-circuit (screen)	two short-circuits at I _{sc} of the cable screen	No visible deterioration		X	X		
9	Thermal short-circuit (conductor)	two short-circuits to raise conductor to θ_{sc} of the cable	No visible deterioration		X	X		
10	Dynamic short-circuit	One short-circuit at I _d	No visible deterioration			X		
11	Impulse (ambient temperature)	10 impulses of each polarity	No breakdown, No flashover	X	X	X		
12	AC voltage	2.5 U ₀ , 15min	No breakdown, No flashover	X	X	X		
13	Humidity (Indoor)	300 hrs at 1.25 U ₀ , tripping times not more than three	No breakdown or flashover, no significant damage.				X	
14	Salt fog (Outdoor)	1000 hrs at 1.25 U ₀ , tripping times not more than three	No breakdown or flashover, no significant damage.					X
15	Examination	For information only	GB/T 12706.4 IEC 60502-4	X	X	X	X	X

Test Procedures and Requirements for Heat-Shrinkable Joint

No.	Test	Condition	Requirements	Test Sequence 2.1	2.2	2.3
1	AC and DC Voltage	4.5 U ₀ , 5min (AC) and 4.0 U ₀ , 15min (DC)	No breakdown, No flashover	X	X	X
2	Partial discharge	At 1.73 U ₀ (ambient temperature)	10 pC max.	X		
3	Impulse at θ_t	10 impulses of each polarity	No breakdown, No flashover	X		
4	Heating cycles in air	30 cycles at θ_t and 2.5 U ₀	No breakdown, No flashover	X		

No.	Test	Condition	Requirements	Test Sequence 2.1	2.2	2.3
5	Heating cycles in air (under water)	30 cycles at θ_t and 2.5 U ₀ , water height 1m	No breakdown, No flashover	X		
6	Partial discharge	At 1.73 U ₀ (at θ_t and ambient temperature)	10 pC max.	X		
7	Thermal short-circuit (screen)	two short-circuits at I _{sc} of the cable screen	No visible deterioration		X	X
8	Thermal short-circuit (conductor)	two short-circuits to raise conductor to θ_{sc} of the cable	No visible deterioration		X	X
9	Dynamic short-circuit	One short-circuit at I _d	No visible deterioration			X
10	Impulse (ambient temperature)	10 impulses of each polarity	No breakdown, No flashover	X	X	X
11	AC Voltage	2.5 U ₀ , 15min	No breakdown, No flashover	X	X	X
12	Examination	For information only	GB/T 12706.4 IEC 60502-4	X	X	X

26/35 (40.5) kV Selection

	Size of conductor (mm ²) 50-120	Cable core number 3	Product description NSY-3532	Installation Location Terminations Indoor
	150-240	3	NSY-3533	Terminations Indoor
	300-400	3	NSY-3534	Terminations Indoor
	500-630	3	NSY-3535	Terminations Indoor
	50-120	3	WSY-3532	Terminations Outdoor
	150-240	3	WSY-3533	Terminations Outdoor
	300-400	3	WSY-3534	Terminations Outdoor
	500-630	3	WSY-3535	Terminations Outdoor
	50-120	3	JSY-3532	Joint
	150-240	3	JSY-3533	Joint
	300-400	3	JSY-3534	Joint
	500-630	3	JSY-3535	Joint
	50-120	1	NSY-3512	Terminations Indoor
	150-240	1	NSY-3513	Terminations Indoor
	300-400	1	NSY-3514	Terminations Indoor
	500-630	1	NSY-3515	Terminations Indoor
	50-120	1	WSY-3512	Terminations Outdoor
	150-240	1	WSY-3513	Terminations Outdoor
	300-400	1	WSY-3514	Terminations Outdoor
	500-630	1	WSY-3515	Terminations Outdoor
	50-120	1	JSY-3512	Joint
	150-240	1	JSY-3513	Joint
	300-400	1	JSY-3514	Joint
	500-630	1	JSY-3515	Joint

8.7/15 (17.5) kV Selection

	Size of conductor (mm ²) 25-50	Cable core number 3	Product description NSY-1031	Installation Location Terminations Indoor
	70-120	3	NSY-1032	Terminations Indoor
	150-240	3	NSY-1033	Terminations Indoor
	300-400	3	NSY-1034	Terminations Indoor
	25-50	3	WSY-1031	Terminations Outdoor
	70-120	3	WSY-1032	Terminations Outdoor
	150-240	3	WSY-1033	Terminations Outdoor
	300-400	3	WSY-1034	Terminations Outdoor
	25-50	3	JSY-1031	Joint
	70-120	3	JSY-1032	Joint
	150-240	3	JSY-1033	Joint
	300-400	3	JSY-1034	Joint
	25-50	1	NSY-1011	Terminations Indoor
	70-120	1	NSY-1012	Terminations Indoor
	150-240	1	NSY-1013	Terminations Indoor
	300-400	1	NSY-1014	Terminations Indoor
	25-50	1	WSY-1011	Terminations Outdoor
	70-120	1	WSY-1012	Terminations Outdoor
	150-240	1	WSY-1013	Terminations Outdoor
	300-400	1	WSY-1014	Terminations Outdoor
	25-50	1	JSY-1011	Joint
	70-120	1	JSY-1012	Joint
	150-240	1	JSY-1013	Joint
	300-400	1	JSY-1014	Joint

STRESS CONTROL AND INSULATION TUBES

C101 Non Tracking Heat Shrink Tube for Cable Terminations

Red anti tracking outer insulation for indoor and outdoor terminations and joints from 6 kV to 36 kV



Voltage Range	6 kV to 36 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2:1 and 3:1
Standard Colour	Red with other colours on request
Cross Reference	TE Raychem HVOT

Introduction

Cross-linked polyolefin, with or without adhesive liner. Excellent resistance to electrical tracking and creeping corrosion. Suitable for insulation protection of indoor and outdoor power cable terminations or joints in voltage range from 6KV to 36KV

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 125°C
- Halogen-free, RoHS compliant, Flame-retardant
- Single or Dual wall (adhesive liner) optional
- Shrink ratio: 2:1 & 3:1
- Standard Color: Red, Other colors optional
- Equivalent to TE HVOT

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥8 MPa
Ultimate Elongation	ASTM D2671	≥200%
Secant modulus 2%	ASTM D2671	≤170 MPa
Heat Aging (150°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥8 MPa ≥100%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹² Ω·cm
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, and 1hr at 3.00kV, and 20mins at 3.25kV. No burn penetration, no sustained burning
Flammability	ASTM D2863	OI ≥25
Color fastness to light	IEC 60684-3	The color does not change between exposed and unexposed parts

Dimensions

Size C101	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
19/6	19	6	2.5	Spool or ≤1.5
30/10	30	10	3	Spool or ≤1.5
38/12	38	12	3	Spool or ≤1.5
40/16	40	16	3	Spool or ≤1.5
45/18	45	18	3	Spool or ≤1.5
55/21	55	21	3	Spool or ≤1.5
65/28	65	28	3	Spool or ≤1.5
75/36	75	36	3	≤1.5
85/40	85	40	3.2	≤1.5
100/40	100	40	3.6	≤1.5
130/50	130	50	3.7	≤1.5

Cross Reference

Tyco-Raychem: HVOT

STRESS CONTROL AND INSULATION TUBES

C102-10 Stress Control Heat Shrink Tube up to 24 kV

High permittivity black tubing that redistributes the electrical field at the screen cut back on 6 to 24 kV cable



Voltage Range	6 kV to 24 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2.5:1
Dielectric Constant	10 to 25 per IEC 62631-2-1
Cross Reference	TE Raychem JSCR

Introduction

Stress control heat shrink tube. Electrical stress control protection of power cable termination and joint Products in 10kV(C102-10) and 35kV(C102-35) ratings are offered

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 125°C
- Single or Dual wall(adhesive-lined) optional
- Shrink ratio: 2.5:1
- Standard Color: Black
- Equivalent to TE JSCR

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥250%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No splitting
Volume resistivity	ASTM D2671	≥1.0×10 ¹¹ Ω·cm
Dielectric constant	IEC 62631-2-1	10 to 25
Loss factor(50Hz)	IEC 62631-2-1	≤ 1.0 (1000V)

Dimensions

Size C102-10	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
26/10	26	10	2.6	Spool or ≤1.5
30/12	30	12	2.7	Spool or ≤1.5
35/14	35	14	2.8	Spool or ≤1.5
40/16	40	16	3	Spool or ≤1.5
47/18	47	18	3	Spool or ≤1.5
55/21	55	21	3	≤1.5
65/24	65	24	3	≤1.5

Size C102-10	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
85/30	85	30	3.2	≤1.5
95/45	95	45	3	≤1.5

Cross Reference

Tyco-Raychem: JSCR

STRESS CONTROL AND INSULATION TUBES

C102-35 Stress Control Heat Shrink Tube up to 36 kV

The 36 kV stress control layer with a dielectric constant of 25 to 50 for 26/35 kV terminations and joints



Voltage Class	36 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2.5:1
Dielectric Constant	25 to 50 per IEC 62631-2-1
Cross Reference	TE Raychem JSCR

Introduction

Stress control heat shrink tube.Electrical stress control protection of power cable termination and joint under 36kV.

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 125°C
- Voltage class: 36kV
- Effective electrical stress control
- Single or Dual wall optional
- Shrink ratio: 2.5:1
- Standard Color: Black

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥250%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking

Property	Test Method	Requirement
Heat shock (200°C/4h)	ASTM D2671	No splitting
Volume resistivity	ASTM D2671	≥1.0×10 ⁹ Ω·cm
Dielectric constant	IEC 62631-2-1	25 to 50
Loss factor(50Hz)	IEC 62631-2-1	≤ 1.0 (1000V)

Dimensions

Size C102-35	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
26/10	26	10	2.7	Spool or ≤1.5
30/12	30	12	2.8	Spool or ≤1.5
35/14	35	14	2.9	Spool or ≤1.5
40/16	40	16	3	Spool or ≤1.5
47/18	47	18	3	Spool or ≤1.5
55/21	55	21	3.1	≤1.5
65/24	65	24	3.2	≤1.5
85/30	85	30	3.4	≤1.5
95/45	95	45	3.2	≤1.5

Cross Reference

Tyco-Raychem: JSCR

STRESS CONTROL AND INSULATION TUBES

C105 Semi Conductive and Insulation Double Layer Heat Shrink Tube

Co extruded heavy wall tube that restores insulation and the outer semiconductive screen in one operation up to 36 kV



Voltage Range	Up to 36 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	135 °C minimum
Shrink Ratio	2.5:1 to 2:1
Colour	Black outer over red inner
Cross Reference	TE Raychem CICM

Introduction

Co-extrusion design, semi-conductive/insulation double layer heat shrink tube. Suitable for insulation protection of power cable joint under 36kV.

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 135°C
- Halogen-free, RoHS compliant, Heavy wall
- Semi-conductive / insulation double layer co-extrusion
- Standard Color: Black (outer layer) / Red (inner layer)
- shrink ratio 2.5:1 to 2:1
- Equivalent to TE CICM

Technical Data

Property	Test Method	Requirement
Outer Layer (Semi-Conductive, Black)		
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥270%
Heat Aging (158°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥250%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Volume resistivity	ASTM D2671	≤1.0×10 ⁴ Ω·cm
Inner Layer (Insulation, red)		
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥350%

Property	Test Method	Requirement
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥270%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm

Dimensions

Size C105	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
38/13	38	13	5	≤1.22
45/17	45	17	5.5	≤1.22
50/20	50	20	5.5	≤1.22
55/23	55	23	5.5	≤1.22
65/25	65	25	6	≤1.22
75/30	75	30	6	≤1.22
85/35	85	35	6	≤1.22
95/40	95	40	6.2	≤1.22
115/50	115	50	6.3	≤1.22

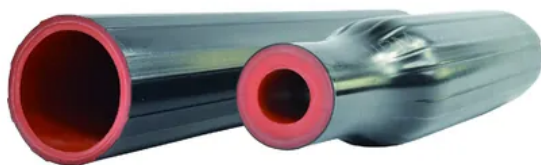
Cross Reference

Tyco-Raychem: CICM

STRESS CONTROL AND INSULATION TUBES

C106 Tri Layer Heat Shrink Tube for Medium Voltage Joints

Ultra heavy wall tube combining semiconductive screen plastic insulation and a fast recovering elastomeric inner layer



Voltage Range	6 kV to 36 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	150 °C minimum
Recovered Wall	11 to 14 mm
Colour	Black outer over red inner
Cross Reference	TE Raychem ERIT ERIC ERIH

Introduction

Co-extrusion design, semi-conductive/insulation/elastomeric insulation tri-layer heat shrink tube. The elastomeric layer is designed to have a fast shrinkage rate to avoid overheating damage. Suitable for insulation protection of power cable joint under 36kV.

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 150°C
- Voltage class: 6kV ~ 36kV
- Halogen-free, RoHS compliant, Ultra heavy wall
- Semi-conductive / insulation / Elastomeric Insulation Three-layer
- Standard Color: Black (outer layer) / Red (inner layer)
- Equivalent to TE ERIT/ERIC/ERIH

Technical Data

Property	Test Method	Requirement
Outer Layer (Semi-Conductive, Black)		
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥270%
Heat Aging (158°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥250%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Volume resistivity	ASTM D2671	≤1.0×10 ⁴ Ω·cm
Middle Layer (Plastic Insulation, red)		
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥350%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥270%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking

Property	Test Method	Requirement
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Inner Layer (/Elastomeric Insulation, red)		
Tensile Strength	ASTM D2671	≥6 MPa
Ultimate Elongation	ASTM D2671	≥270%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥4.2 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Note: Use standard samples for testing		

Dimensions

Size C106	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
35/13	35	13	11	≤1.22
45/17	45	17	12	≤1.22
50/21	50	21	12	≤1.22
63/26	63	26	12.5	≤1.22
75/34	75	34	12.5	≤1.22
85/34	85	34	12.5	≤1.22
95/42	95	42	13.5	≤1.22
110/52	110	52	13.5	≤1.22
125/62	125	62	14	≤1.22

Cross Reference

Tyco-Raychem: ERIT/ERIC/ERIH

STRESS CONTROL AND INSULATION TUBES

C107 Plastic and Elastomeric Insulation Double Layer Heat Shrink Tube

Ultra heavy wall insulation for joints where the cable screen is restored separately from 6 kV to 36 kV



Voltage Range	6 kV to 36 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	150 °C minimum
Construction	Plastic and elastomeric insulation
Standard Colour	Red
Wall Class	Ultra heavy wall

Introduction

Co-extrusion design, thermoplastic insulation/elastomeric insulation double layer heat shrink tube. The elastomeric layer is designed to have a fast shrinkage rate to avoid overheating damage. Suitable for insulation protection of power cable joint under 36kV.

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 150°C
- Voltage class: 6kV ~ 36kV
- Halogen-free, RoHS compliant, Ultra heavy wall
- Plastic insulation and Elastomeric Insulation
- Standard Color: Red

Technical Data

Property	Test Method	Requirement
Outer Layer (Plastic Insulation, red)		
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥350%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥270%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm

Property	Test Method	Requirement
Inner Layer (Elastomeric Insulation, red)		
Tensile Strength	ASTM D2671	≥6 MPa
Ultimate Elongation	ASTM D2671	≥270%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥4.2 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Note: Use standard samples for testing		

Dimensions

Size C107	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
35/13	35	13	11	≤1.22
45/17	45	17	12	≤1.22
50/21	50	21	12	≤1.22
63/26	63	26	12.5	≤1.22
75/34	75	34	12.5	≤1.22
85/34	85	34	12.5	≤1.22
95/42	95	42	13.5	≤1.22
110/52	110	52	14	≤1.22
125/62	125	62	14	≤1.22

STRESS CONTROL AND INSULATION TUBES

C108 Insulation and Stress Control Composite Heat Shrink Tube

A single tube that carries both anti tracking insulation and a zinc oxide stress control sealant for terminations up to 24 kV



Voltage Class	Up to 24 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	150 °C minimum
Construction	Insulating layer over stress control sealant
Standard Colour	Red
Inner Layer	Zinc oxide stress control adhesive

Introduction

Double-wall heat-shrinkable tube structure with an outer layer made of radiation cross-linked polyolefin and a unique zinc oxide stress-control adhesive on the inner layer. Excellent anti-tracking, creepage corrosion resistance, and stress control properties. Suitable for insulation protection of indoor and outdoor power cable termination under 24KV

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 150°C
- Voltage class: Under 24kV
- Double wall heat shrink
- Insulating layer, stress control sealant layer
- Standard Color: Red

Technical Data

Property	Test Method	Requirement
Outer Layer (Plastic Insulation, red)		
Tensile Strength	ASTM D2671	≥8 MPa
Ultimate Elongation	ASTM D2671	≥200%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥8 MPa ≥100%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹² Ω·cm

Property	Test Method	Requirement
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, and 1hr at 3.00kV, and 20mins at 3.25kV. No burn penetration, no sustained burning
Flammability	ASTM D2863	OI ≥25
Color fastness to light	IEC 60684-3	No visible change
Inner layer (Stress control and sealant layer, green)		
Dielectric constant	ASTM D150	≥3.1
Volume resistivity	ASTM D2671	≥1.0×10 ¹¹ Ω·cm
Note: Use standard samples for testing		

Dimensions

Size C108	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
30/12	30	12	5	≤ 1.22
45/15	45	15	5	≤ 1.22
49/16	49	16	5	≤ 1.22
50/20	50	20	5	≤ 1.22
60/28	60	28	5	≤ 1.22
80/35	80	35	5	≤ 1.22

MOLDED CABLE PARTS

Y1 Heat Shrink Breakout Boots for Multi Core Cable

Molded two three four and five leg boots with adhesive on the big end and every leg for 1 kV to 36 kV cable



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 105 °C
Leg Configurations	2 3 4 and 5 leg
Adhesive	Applied on big end and all legs
Standard Colour	Black
Cross Reference	TE 302K 402W 502K

Introduction

Molded heat shrinkable breakout boots. Adhesive applied on big end and legs. Sealing and insulation protection for branching of multi-core cables.

Features

- Operating temperature: -55 to 105°C
- Voltage class: 1kV ~ 36kV
- Insulated, sealed and waterproof
- Standard Color: Black
- Equivalent to TE 302K, 402W, 502K

Technical Data

Property	Test Method	Requirement	
Tensile Strength	ASTM D2671	≥12 MPa	
Ultimate Elongation	ASTM D2671	≥300%	Product diagram
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥270%	
Water absorption (23°C/24h)	ASTM D2671	≤0.5%	
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking	
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing	
Dielectric strength	ASTM D2671	≥15 kV/mm	
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm	
Note: Use standard samples for testing			

Dimensions

Size	As supplied(mm) Inner diameter Big end (min.)	Inner diameter Leg (min.)	Length (±20%)	After recovered (mm) Inner diameter Big end (max.)	Inner diameter Leg (max.)	Size for conductor (mm ²)
Y1-2/0h	21	11	120	13	5	4-6, 10-16

Size	As supplied(mm) Inner diameter Big end (min.)	Inner diameter Leg (min.)	Length (±20%)	After recovered (mm) Inner diameter Big end (max.)	Inner diameter Leg (max.)	Size for conductor (mm ²)
Y1-2/1h	30	15	120	20	7	25-50
Y1-2/2h	40	20	140	25	10	70-120
Y1-2/3h	60	30	150	35	11	150-240
Y1-2/4h	70	40	140	40	13	300-400, 500-630
Y1-3/00h	35	14	130	22	6	4-6, 10-16
Y1-3/0h	50	23	170	29	9	25-50
Y1-3/1h	70	28	200	38	12	70-120
Y1-3/2h	84	37	200	46	15	150-240
Y1-3/3h	100	47	200	55	19	300-400
Y1-3/4h	125	58	200	70	28	500-630
Y1-4/0h	34	10	150	18	5	4-6, 10-16
Y1-4/1h	45	15	150	25	7	25-50
Y1-4/2h	60	22	180	32	9	70-120
Y1-4/3h	75	30	180	40	12	150-240
Y1-4/4h	90	30	190	45	14	300-400
Y1-5/0h	37	11	130	24	5	4-6, 10-16
Y1-5/1h	50	14	150	28	8	25-50
Y1-5/2h	75	23	170	36	9	70-120
Y1-5/3h	90	30	180	46	13	150-240
Y1-5/4h	105	36	200	50	14	300-400
Y1-6/1h	50	12	120	28	5	/
Y1-6/2h	60	16	120	30	7	/
Size	As supplied(mm)			After recovered (mm)		
	Inner diameter Big end (min.)	Inner diameter Big/Small Leg (min.)	Length (±20%)	Inner diameter Big end (max.)	Inner diameter Big/Small Leg (max.)	
Y1-6/1hs	83	31/19	220	40	11/8	
Y1-6/2hs	133	52/30	220	53	16/11	

MOLDED CABLE PARTS

Y2 Heat Shrink Cable End Caps for Sealing and Storage

Adhesive lined molded caps that seal a cut cable end against water ingress during storage transport and installation



Operating Temperature	-55 to 105 °C
Full Recovery Temperature	125 °C minimum
Adhesive	Adhesive liner as standard
Standard Colour	Black
Option	Inflatable seal version available
Cross Reference	TE SSC and ESC

Introduction

Cross-linked polyolefin,with or without adhesive liner.Insulation protection and sealing of cable end,cable termination.Suitable for electric power cable,communication cables and other industrial cabling pipeline.

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 125°C
- Adhesive liner
- Standard Color: Black
- Inflatable seal optional
- Equivalent to TE SSC, ESC

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥270%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Note: Use standard samples for testing		

Dimensions

Size Y2	As supplied(mm) Inner diameter H (min.)	Length P (nom.)	After recovered (mm) Inner diameter Big end (max.)	Inner diameter Leg (max.)
12/5	12	45	5	2.5
15/8	15	75	8	2.5
20/8	20	75	8	2.8

Size Y2	As supplied(mm) Inner diameter H (min.)	Length P (nom.)	After recovered (mm) Inner diameter Big end (max.)	Inner diameter Leg (max.)
25/10	25	85	10	2.8
35/18	35	95	18	2.8
40/18	40	95	18	2.8
55/25	55	125	25	2.8
75/30	75	140	31	3.2
100/40	97	140	40	4.8
120/60	120	150	60	4.4
140/65	140	180	65	4
160/95	160	270	95	4
200/95	200	270	95	4

Cross Reference

Tyco-Raychem: SSC/ESC

MOLDED CABLE PARTS

Y3 Non Tracking Heat Shrink Rain Sheds for Outdoor Terminations

Red anti tracking skirts with mastic collars that build creepage distance on outdoor terminations from 1 kV to 36 kV



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 105 °C
Full Recovery Temperature	150 °C minimum
Material	Non tracking cross linked polyolefin
Adhesive	Mastic applied to collars
Standard Colour	Red

Introduction

Cross-linked polyolefin, non-tracking, mastic applied to collars.Suitable for insulation of outdoor power cable termination.

Features

- Operating temperature: -55 to 105°C
- Minimum fully recovery temperature: 150°C
- Voltage class: 1kV ~ 36kV
- Non-tracking, UV and weather resistance
- Adhesive liner
- Standard Color: Red
- Equivalent to TE SSC, ESC

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, No burn penetration, no sustained burning
Note: Use standard samples for testing		

Dimensions

Size Y3	As supplied(mm) Inner diameter D2 (±10%)	After recovered (mm) Inner diameter D2 (max.)	Diameter D1 (nom.)	H (min.)	Wall thickness W (nom.)
30/12	30	12	95	18	3
35/14	35	14	95	18	3
45/19	45	19	120	20	3
50/19	50	19	120	20	3
60/23	60	23	130	20	3
75/30	75	30	140	22	3
110/50	110	50	175	28	3
130/65	130	65	200	30	3
160/80	168	80	245	30	3
180/80	180	80	245	30	3

Cross Reference

Tyco-Raychem: SSC/ESC

MEDIUM AND HEAVY WALL TUBING

S3(n) Medium Wall Halogen Free Heat Shrink Tube

Halogen free medium wall polyolefin tubing with 3:1 and 4:1 shrink for insulating sealing and protecting cable to 36 kV



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 110 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	3:1 and 4:1
Compliance	Halogen free and RoHS
Wall	Single or adhesive lined dual wall

Introduction

Medium wall halogen-free polyolefin shrink tubing, with or without adhesive liner. Excellent insulation, mechanical protection and sealing of low voltage power cable joints and terminations.

Features

- Operating temperature: -55 to 110°C
- Minimum fully recovery temperature: 125°C
- Shrink ratio: 3:1 & 4:1
- Halogen-free, RoHS compliant
- Single or Dual wall optional
- Standard Color: Black, Other colors optional
- Voltage class: 1kV ~ 36kV

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-55°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹⁴ Ω·cm
Copper corrosion	ASTM D2671	No corrosion

Dimensions

Size S3(n)	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
8/2	8	2	1.8(with glue)	1.0/1.22
9/3	9	3	1.9(with glue)	1.0/1.22
12/4	12	4	2.2(with glue)	1.0/1.22
16/5	16	5	2.5(with glue)	1.0/1.22

Size S3(n)	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
19/6	19	6	2.4	1.0/1.22
22/6	22	6	2.4	1.0/1.22
25/8	25	8	2.5	1.0/1.22
28/6	28	6	2.9	1.0/1.22
33/8	33	8	2.9	1.0/1.22
35/12	35	12	2.6	1.0/1.22
40/12	40	12	2.8	1.0/1.22
45/13	45	13	2.9	1.0/1.22
55/16	54	16	3	1.0/1.22
65/19	65	19	3	1.0/1.22
75/22	75	22	3	1.0/1.22
85/25	85	25	3	1.0/1.22
95/25	95	25	3.2	1.0/1.22
105/30	105	30	3.2	1.0/1.22
115/34	115	34	3.2	1.0/1.22
130/36	130	36	3.2	1.0/1.22
140/42	140	42	3.3	1.0/1.22
160/50	160	50	3.4	1.0/1.22
175/58	175	58	3.4	1.0/1.22
200/65	200	65	3.5	1.0/1.22
230/75	230	75	3.5	1.0/1.22
260/85	260	85	3.5	1.0/1.22
300/100	300	100	4	1.0/1.22

Cross Reference

Tyco-Raychem: MWTM /BSTS/ SST-M

MEDIUM AND HEAVY WALL TUBING

S3(nh) Heavy Wall Halogen Free Heat Shrink Tube

Thickened halogen free polyolefin tubing where the same fire performance is needed with far more mechanical protection



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 110 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	3:1 and 4:1
Compliance	Halogen free and RoHS
Wall	Heavy wall thickened design

Introduction

Heavy wall halogen-free polyolefin shrink tubing, thickened design, with or without adhesive liner. Excellent insulation, mechanical protection and sealing of low voltage power cable joints and terminations.

Features

- Operating temperature: -55 to 110°C
- Minimum fully recovery temperature: 125°C
- Shrink ratio: 3:1 & 4:1
- Halogen-free, RoHS compliant
- Single or Dual wall optional
- Standard Color: Black, Other colors optional
- Voltage class: 1kV ~ 36kV

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-55°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹⁴ Ω·cm
Copper corrosion	ASTM D2671	No corrosion

Dimensions

Size S3(nh)	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
9/3	9	3	2.5(with glue)	1.0/1.22
13/4	12	4	2.8(with glue)	1.0/1.22
16/5	16	5	3.0(with glue)	1.0/1.22
19/6	19	6	2.6	1.0/1.22

Size S3(nh)	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m/pcs)
22/6	22	6	3	1.0/1.22
25/8	25	8	3	1.0/1.22
28/6	28	6	3.4	1.0/1.22
33/8	33	8	3.4	1.0/1.22
35/12	35	12	4.1	1.0/1.22
40/12	40	12	4.1	1.0/1.22
45/13	45	13	4.2	1.0/1.22
55/16	54	16	4.3	1.0/1.22
65/19	65	19	4.4	1.0/1.22
75/22	75	22	4.4	1.0/1.22
85/25	85	25	4.5	1.0/1.22
95/29	95	29	4.5	1.0/1.22
105/30	105	30	4.6	1.0/1.22
115/34	115	34	4.6	1.0/1.22
130/36	130	36	4.8	1.0/1.22
140/42	140	42	4.8	1.0/1.22
160/50	160	50	4.8	1.0/1.22
175/58	175	58	4.8	1.0/1.22
200/65	200	65	4.8	1.0/1.22
230/75	230	75	4.8	1.0/1.22
260/85	260	85	4.8	1.0/1.22

Cross Reference

Tyco-Raychem: SST/WCSM / XCSM

MEDIUM AND HEAVY WALL TUBING

S3 Medium Wall Flame Retardant Heat Shrink Tube

Flame retardant medium wall tubing formulated for wet and underground service on vessels platforms shipyards and harbours



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 110 °C
Full Recovery Temperature	135 °C minimum
Shrink Ratio	3:1 and 4:1
Compliance	Flame retardant and RoHS
Environment	Wet and underground service

Introduction

Medium wall flame-retardant polyolefin shrink tubing,with or without adhesive liner.Excellent insulation,mechanical protection and sealing for outdoor electrical equipment and connections in wet and underground environments such as marine vessels,off-shore oil platform,shipyard and harbor applications.

Features

- Operating temperature: -55 to 110°C
- Minimum fully recovery temperature: 135°C
- Shrink ratio: 3:1 & 4:1
- Environmental friendly, RoHS compliant, Flame-retardant
- Single or Dual wall optional
- Standard Color: Black, Other colors optional
- Voltage class: 1kV ~ 36kV
- Thick-wall and halogen-free versions are also supplied
- Equivalent to TE BSTS-FR, SST-FR

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥10.4 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (158°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥7.3 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-55°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹⁴ Ω·cm
Flammability	UL224	VW-1

Dimensions

Size S3	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
8/2	8	2	1.7(with glue)	1.0/1.22
9/3	9	3	1.8(with glue)	1.0/1.22
12/4	12	4	2.2(with glue)	1.0/1.22
16/5	16	5	2.5(with glue)	1.0/1.22
19/6	19	6	2.4	1.0/1.22
22/6	22	6	2.4	1.0/1.22
25/8	25	8	2.5	1.0/1.22
28/6	28	6	2.9	1.0/1.22
33/8	33	8	2.9	1.0/1.22
35/12	35	12	2.6	1.0/1.22
40/12	40	12	2.7	1.0/1.22
45/13	45	13	2.8	1.0/1.22
55/16	54	16	2.9	1.0/1.22
65/19	65	19	2.9	1.0/1.22
75/22	75	22	2.9	1.0/1.22
85/25	85	25	2.9	1.0/1.22
95/25	95	25	3.3	1.0/1.22
115/34	115	34	3.3	1.0/1.22
130/36	130	36	3.4	1.0/1.22
140/42	140	42	3.4	1.0/1.22
160/50	160	50	3.5	1.0/1.22
175/58	175	58	3.5	1.0/1.22
200/65	200	65	3.6	1.0/1.22
230/75	230	75	3.6	1.0/1.22
260/85	260	85	3.6	1.0/1.22

Cross Reference

Tyco-Raychem: BSTS-FR/SST-FR

MEDIUM AND HEAVY WALL TUBING

S3(h) Heavy Wall Flame Retardant Heat Shrink Tube

The toughest tube in the S3 family combining flame retardant marine formulation with a thickened heavy wall



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 110 °C
Full Recovery Temperature	135 °C minimum
Shrink Ratio	3:1 and 4:1
Compliance	Flame retardant and RoHS
Wall	Heavy wall thickened design

Introduction

Heavy wall flame-retardant polyolefin shrink tubing, thickened design, with or without adhesive liner. Excellent insulation, mechanical protection and sealing for outdoor electrical equipment and connections in wet and underground environments such as marine vessels, off-shore oil platform, shipyard and harbor applications.

Features

- Operating temperature: -55 to 110°C
- Minimum fully recovery temperature: 135°C
- Shrink ratio: 3:1 & 4:1
- Environmental friendly, RoHS compliant, Flame-retardant
- Single or Dual wall optional
- Standard Color: Black, Other colors optional
- Voltage class: 1kV ~ 36kV

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥10.4 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (158°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥7.3 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-55°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹⁴ Ω·cm
Flammability	UL224	VW-1

Dimensions

Size S3(h)	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
9/3	9	3	2.5(with glue)	1.0/1.22
13/4	12	4	2.8(with glue)	1.0/1.22

Size S3(h)	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
16/5	16	5	3.0(with glue)	1.0/1.22
19/6	19	6	2.6	1.0/1.22
22/6	22	6	3	1.0/1.22
25/8	25	8	3	1.0/1.22
28/6	28	6	3.4	1.0/1.22
33/8	33	8	3.4	1.0/1.22
35/12	35	12	4.1	1.0/1.22
40/12	40	12	4.1	1.0/1.22
45/13	45	13	4.2	1.0/1.22
55/16	54	16	4.3	1.0/1.22
65/19	65	19	4.4	1.0/1.22
75/22	75	22	4.4	1.0/1.22
85/25	85	25	4.5	1.0/1.22
95/29	95	29	4.5	1.0/1.22
105/30	105	30	4.6	1.0/1.22
115/34	115	34	4.6	1.0/1.22
130/36	130	36	4.8	1.0/1.22
140/42	140	42	4.8	1.0/1.22
160/50	160	50	4.8	1.0/1.22
175/58	175	58	4.8	1.0/1.22
200/65	200	65	4.8	1.0/1.22
230/75	230	75	4.8	1.0/1.22
260/85	260	85	4.8	1.0/1.22

Cross Reference

Tyco-Raychem: FCSM/SST-FR

BUSBAR INSULATION AND COVERS

S1(n)-10 Halogen Free Busbar Insulation Heat Shrink Tube 6 to 24 kV

Halogen free red tubing that insulates round and rectangular copper or aluminium busbar inside 6 to 24 kV switchgear



Voltage Class	6 kV to 24 kV
Operating Temperature	-40 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2:1 and 2.5:1
Compliance	Halogen free and RoHS
Standard Colour	Red

Introduction

Halogen-free and environmentally friendly polyolefin material, can be applied in 6kV to 24kV power switchgear, providing insulation enhancement, protection against flashover or accidental discharge. Especially suitable for switchgear with limited space, it can be used for circular and rectangular copper or aluminum busbars.

Features

- Operating temperature: -40 to 105°C
- Minimum full recovery temperature: 125°C
- Voltage class: 6kV to 24kV
- Halogen-free, RoHS compliant
- Shrink ratio: 2:1 & 2.5:1
- Standard Color: Red

Technical Data

Property	Test Method	Requirement
Specific gravity	ASTM D2671	1.0~1.2
Thermal endurance	IEC 216	≥105°C
Tensile Strength	ASTM D2671	≥14 MPa
Ultimate Elongation	ASTM D2671	≥400%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥12 MPa ≥300%
Long-term Heat Aging (100°C/3000h) Ultimate Elongation	IEC 60684-2	≥175%
Fluid resistance (23°C/168h) Tensile Strength Ultimate Elongation	IEC 60684-2	≥8 MPa ≥250%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥16 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm

Property	Test Method	Requirement
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, No burn penetration, no sustained burning
Color fastness to light	IEC 60684-3-283	Color stability, no change
Copper corrosion (150°C/168h)	IEC 60684-3-283	No corrosion

Dimensions

Size S1(n)-10	As supplied (mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
25/10	25	10	2.5	25
30/12	30	12	2.7	20
40/16	40	16	2.7	20
50/20	50	20	2.7	20
65/25	65	25	2.9	20
75/30	75	30	2.9	20
85/35	85	35	2.9	20
100/40	100	40	2.9	20
120/50	120	50	2.9	20
150/60	150	60	3.0	20
175/75	175	75	3.0	20

Products Slection

Bus Bar Size (mm)	Single Layer Bus Bar	Double Layer Bus Bar
20×3, 25×3	Φ25/10	Φ30/12
30×3, 30×4	Φ30/12	Φ40/16
30×10, 40×4	Φ40/16	Φ50/20
40×10, 50×5, 50×6	Φ50/20	Φ65/25 (Φ75/30)
50×8, 50×10, 60×6, 60×8	Φ65/25 (Φ75/30)	Φ75/30(Φ85/35)
60×10, 80×6, 80×8, 80×10	Φ75/30(Φ85/35)	Φ100/40(Φ120/50)
100×8, 100×10, 100×12	Φ100/40(Φ120/50)	Φ120/50
150×12, 150×15	Φ150/60	Φ175/75

Cross Reference

Tyco-Raychem: BPTM

BUSBAR INSULATION AND COVERS

S1(n)-35 Halogen Free Busbar Insulation Heat Shrink Tube 6 to 36 kV

The 36 kV halogen free busbar grade for switchgear where clearance is tight and smoke toxicity is regulated



Voltage Class	6 kV to 36 kV
Operating Temperature	-40 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2:1 and 2.5:1
Compliance	Halogen free and RoHS
Standard Colour	Red

Introduction

Halogen-free and environmentally friendly polyolefin material, can be applied in 6kV to 36kV power switchgear, providing insulation enhancement, protection against flashover or accidental discharge. Especially suitable for switchgear with limited space, it can be used for circular and rectangular copper or aluminum busbars.

Features

- Operating temperature: -40 to 105°C
- Minimum full recovery temperature: 125°C
- Voltage class: 6kV to 36kV
- Halogen-free, RoHS compliant
- Shrink ratio: 2:1 & 2.5:1
- Standard Color: Red

Technical Data

Property	Test Method	Requirement
Specific gravity	ASTM D2671	1.0-1.2
Thermal endurance	IEC 216	105°C minimum
Tensile Strength	ASTM D2671	≥14 MPa
Ultimate Elongation	ASTM D2671	≥400%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥12 MPa ≥300%
Long-term Heat Aging (100°C/3000h) Ultimate Elongation	IEC 60684-2	≥175%
Fluid resistance (23°C/168h) Tensile Strength Ultimate Elongation	IEC 60684-2	≥8 MPa ≥250%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥16 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm

Property	Test Method	Requirement
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, No burn penetration, no sustained burning
Color fastness to light	IEC 60684-3-283	Color stability, no change
Copper corrosion (150°C/168h)	IEC 60684-3-283	No corrosion

Dimensions

Size S1(n)-35	As supplied (mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
25/10	25	10	3.5	15
30/12	30	12	3.6	15
40/16	40	16	3.6	15
50/20	50	20	3.6	15
65/25	65	25	3.6	15
75/30	75	30	3.7	15
85/35	85	35	3.7	15
100/40	100	40	3.7	15
120/50	120	50	3.8	15
150/60	150	60	3.8	15
175/75	175	75	3.8	15

Products Slection

Bus Bar Size (mm)	Single Layer Bus Bar	Double Layer Bus Bar
20×3, 25×3	Φ25/10	Φ30/12
30×3, 30×4	Φ30/12	Φ40/16
30×10, 40×4	Φ40/16	Φ50/20
40×10, 50×5, 50×6	Φ50/20	Φ65/25 (Φ75/30)
50×8, 50×10, 60×6, 60×8	Φ65/25 (Φ75/30)	Φ75/30(Φ85/35)
60×10, 80×6, 80×8, 80×10	Φ75/30(Φ85/35)	Φ100/40(Φ120/50)
100×8, 100×10, 100×12	Φ100/40(Φ120/50)	Φ120/50
150×12, 150×15	Φ150/60	Φ175/75

Cross Reference

Tyco-Raychem: BBIT

BUSBAR INSULATION AND COVERS

S1-10 Flame Retardant Busbar Insulation Heat Shrink Tube 6 to 24 kV

Flame retardant busbar insulation available in red yellow green and blue for phase identification up to 24 kV



Voltage Class	6 kV to 24 kV
Operating Temperature	-40 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2:1 and 2.5:1
Compliance	Environmentally friendly and RoHS
Colours	Red yellow green or blue

Introduction

Environmental friendly flame retardant polyolefin material, can be applied in 6kV to 24kV power switchgear, providing insulation enhancement, protection against flashover or accidental discharge. Especially suitable for switchgear with limited space, it can be used for circular and rectangular copper or aluminum busbars.

Features

- Operating temperature: -40 to 105°C
- Minimum full recovery temperature: 125°C
- Voltage class: 6kV to 24kV
- Environmental friendly, RoHS compliant
- Shrink ratio: 2:1 & 2.5:1
- Standard Color: Red, Yellow, Green or Blue

Technical Data

Property	Test Method	Requirement
Specific gravity	ASTM D2671	1.1-1.3
Thermal endurance	IEC 216	105°C minimum
Tensile Strength	ASTM D2671	≥10 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥8 MPa ≥200%
Long-term Heat Aging (100°C/3000h) Ultimate Elongation	IEC 60684-2	≥175%

Property	Test Method	Requirement
Fluid resistance (23°C/168h) Tensile Strength Ultimate Elongation	IEC 60684-2	≥8 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥16 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Flammability	ASTM D2863	Oxygen index 27 min.
Color fastness to light	IEC 60684-3-283	Color stability, no change
Copper corrosion (150°C/168h)	IEC 60684-3-283	No corrosion

Dimensions

Size S1-10	As supplied (mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
25/10	25	10	2.5	25
30/12	30	12	2.7	20 / 25
40/16	40	16	2.7	20 / 25
50/20	50	20	2.7	20 / 25
65/25	65	25	2.9	20 / 25
75/30	75	30	2.9	20 / 25
85/35	85	35	2.9	20 / 25
100/40	100	40	2.9	20 / 25
120/50	120	50	2.9	20 / 25
150/60	150	60	3.0	20 / 25
175/75	175	75	3.0	20 / 25
Products Slection				
Bus Bar Size (mm)	Single Layer Bus Bar	Double Layer Bus Bar		
20×3, 25×3	Φ25/10	Φ30/12		
30×3, 30×4	Φ30/12	Φ40/16		
30×10, 40×4	Φ40/16	Φ50/20		
40×10, 50×5, 50×6	Φ50/20	Φ65/25 (Φ75/30)		
50×8, 50×10, 60×6, 60×8	Φ65/25 (Φ75/30)	Φ75/30(Φ85/35)		
60×10, 80×6, 80×8, 80×10	Φ75/30(Φ85/35)	Φ100/40(Φ120/50)		
100×8, 100×10, 100×12	Φ100/40(Φ120/50)	Φ120/50		
150×12, 150×15	Φ150/60	Φ175/75		

Cross Reference

Tyco-Raychem: BPTM

BUSBAR INSULATION AND COVERS

S1-35 Flame Retardant Busbar Insulation Heat Shrink Tube 6 to 36 kV

The 36 kV flame retardant busbar grade in four phase colours for compact switchgear and collector substations



Voltage Class	6 kV to 36 kV
Operating Temperature	-40 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2:1 and 2.5:1
Compliance	Environmentally friendly and RoHS
Colours	Red yellow green or blue

Introduction

Environmental friendly flame retardant polyolefin material, can be applied in 6kV to 36kV power switchgear, providing insulation enhancement, protection against flashover or accidental discharge. Especially suitable for switchgear with limited space, it can be used for circular and rectangular copper or aluminum busbars.

Features

- Operating temperature: -40 to 105°C
- Minimum full recovery temperature: 125°C
- Voltage class: 6kV to 36kV
- Environmental friendly, RoHS compliant
- Shrink ratio: 2:1 & 2.5:1
- Standard Color: Red, Yellow, Green or Blue

Technical Data

Property	Test Method	Requirement
Specific gravity	ASTM D2671	1.1~1.3
Thermal endurance	IEC 216	105°C minimum
Tensile Strength	ASTM D2671	≥10 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥8 MPa ≥200%
Long-term Heat Aging (100°C/3000h) Ultimate Elongation	IEC 60684-2	≥175%
Fluid resistance (23°C/168h) Tensile Strength Ultimate Elongation	IEC 60684-2	≥8 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥16 kV/mm

Property	Test Method	Requirement
Volume resistivity	ASTM D2671	≥1.0×1013Ω·cm
Flammability	ASTM D2863	Oxygen index 27 min.
Color fastness to light	IEC 60684-3-283	Color stability, no change
Copper corrosion (150°C/168h)	IEC 60684-3-283	No corrosion

Dimensions

Size S1-35	As supplied (mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)
25/10	25	10	3.5	15
30/12	30	12	3.6	15
40/16	40	16	3.6	15
50/20	50	20	3.6	15
65/25	65	25	3.6	15
75/30	75	30	3.7	15
85/35	85	35	3.7	15
100/40	100	40	3.7	15
120/50	120	50	3.8	15
150/60	150	60	3.8	15
175/75	175	75	3.8	15

Products Slection

Bus Bar Size (mm)	Single Layer Bus Bar	Double Layer Bus Bar
20×3, 25×3	Φ25/10	Φ30/12
30×3, 30×4	Φ30/12	Φ40/16
30×10, 40×4	Φ40/16	Φ50/20
40×10, 50×5, 50×6	Φ50/20	Φ65/25 (Φ75/30)
50×8, 50×10, 60×6, 60×8	Φ65/25 (Φ75/30)	Φ75/30 (Φ85/35)
60×10, 80×6, 80×8, 80×10	Φ75/30 (Φ85/35)	Φ100/40 (Φ120/50)
100×8, 100×10, 100×12	Φ100/40 (Φ120/50)	Φ120/50
150×12, 150×15	Φ150/60	Φ175/75

Cross Reference

Tyco-Raychem: BPTM

BUSBAR INSULATION AND COVERS

S1 Busbar Insulation Heat Shrink Tube 1 kV to 35 kV

The general purpose busbar insulation family covering 1 kV to 35 kV with UL 224 recognition under file E341796



Voltage Range	1 kV to 35 kV
Operating Temperature	-40 to 105 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	2:1 2.5:1 and 3:1
Ratings Available	S1-1 S1-10 and S1-35
Approval	UL 224 file E341796

Introduction

Environmental friendly flame retardant polyolefin material, can be applied in power switchgear from 1kv to 35kv, providing insulation enhancement, protection against flashover or accidental discharge. It can be used for circular and rectangular copper or aluminum busbars.

Features

- Operating temperature: -40 to 105°C
- Minimum full recovery temperature: 125°C
- Products available for various voltage ratings (S1-1, S1-10, S1-35)
- Environmental friendly, RoHS compliant
- Shrink ratio: 2:1 & 2.5:1 & 3:1
- Standard Color: Black, other colors also available
- UL224 E341796 met
- compact profile suitable for limited space
- Equivalent to TE LVIT,BBIT,BPTM

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥10.4 MPa
Ultimate Elongation	ASTM D2671	≥200%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥7.3 MPa ≥100%
Water absorption (23°C/24h)	ASTM D2671	≤1.0%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength Thickness less than 1.0mm Thickness 1.0mm to less than 2.0mm Thickness 2.0mm to less than 3.0mm	ASTM D2671	≥20 kV/mm ≥16 kV/mm ≥12 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, No burn penetration, no sustained burning
Flammability	ANSI C37.20 IEEE-27	No continuous combustion phenomenon and Self-extinguishing within 60S
Smoke index	IEC 61034	≤120

Property	Test Method	Requirement
Copper corrosion (150°C/168h)	IEC 60684-3-283	No corrosion

Dimensions

Size S1-1	As supplied(mm) Inner diameter D (min.)	After recovered (mm) Inner diameter d (max.)	Wall thickness t (nom.)	Standard length (m)	Applicable rectangular busbar(mm) L+T		Applicable round busbar(mm)) D	
2.5:1								
15/6	15	6	1.5	30	12	18	6.5	12
30/12	30	12	1.6	30	17	39	11	25
50/20	50	20	1.6	30	36	65	22	43
75/30	75	30	1.7	30	39	86	27	55
100/40	100	40	1.8	30	59	117	38	75
120/50	120	50	1.9	30	70	150	44	90
150/60	150	60	2	30	89	157	55	100
175/70	175	70	2.5	30	117	190	75	120
235/105	235	105	2.5	30	190	280	120	180
3:1								
30/10	30	10	1.8	30	17	39	11	25
75/25	75	25	2.0	30	39	86	27	55
100/35	100	35	2.3	30	59	117	38	75
120/40	120	40	2.5	30	70	150	44	90
150/50	150	50	2.5	30	89	157	55	100

Cross Reference

Tyco-Raychem: LVIT

BUSBAR INSULATION AND COVERS

S1-A Wrap Around Overhead Line Cover 380 V to 110 kV

A wrap around insulating cover with a built in creepage device that clips onto a live route conductor without disconnection



Voltage Class	380 V to 110 kV
Operating Temperature	-40 to 105 °C
Packaging	20 m per roll
Colours	Red green yellow or black
Compliance	Environmentally friendly and RoHS
Cross Reference	TE Raychem MULC

Introduction

Suitable for improving insulation and preventing short circuits of overhead conductors of various voltage levels; Strengthen the three-phase insulation protection of the transition line from medium and high voltage lines to the main transformer station; Used for the lead part of oil switches on columns and urban public transformers. Installation is simple and fast, with built-in creepage growth device to increase creepage distance and improve insulation performance. Excellent weather resistance, UV resistance, and mechanical damage resistance

Features

- Operating temperature: -40 to 105°C
- Voltage Class:380V~110 kV
- Environmental friendly, RoHS compliant
- Standard Color: Red, Green, Yellow, Black
- Standard Packaging: 20m/roll

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥12 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (136°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥10 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-40°C/4h)	ASTM D2671	No cracking

Property	Test Method	Requirement
Dielectric strength	ASTM D2671	≥20 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Dielectric constant	IEC 250	≤5.0
Tracking and erosion resistance	ASTM D2303	After 1hr at 2.5kV, and 1hr at 2.75kV, No burn penetration, no sustained burning
Flammability	ASTM D2863	Oxygen index 27 min.

Dimensions

Size	Voltage class	Size for conductor (mm ²)	Conductor diameter maximum (mm)
Ø14A	380V~10kV	≤70	14
Ø18A	380V~10kV	95	18
Ø20A	380V~10kV	120~150	20
Ø28A	380V~10kV	185~300	28
Ø38A	380V~10kV	400~800	38
Ø14B	35kV~110kV	≤70	14
Ø18B	35kV~110kV	95	18
Ø20B	35kV~110kV	120~150	20
Ø28B	35kV~110kV	185~300	28
Ø38B	35kV~110kV	400~800	38

Cross Reference

Tyco-Raychem: MULC

BUSBAR INSULATION AND COVERS

S1-B Busbar Lap Joint Insulation Cover 1 kV to 36 kV

Molded clip open covers that insulate bolted busbar joints and still allow inspection without damaging the connection



Voltage Class	1 kV to 36 kV
Operating Temperature	-40 to 105 °C
Design	Buckle type opening and closing
Material	Cross linked polyolefin
Colours	Red yellow green or black
Supply	Customised to drawing or joint shape

Introduction

Suitable for 1~36kV voltage rate, power switchgear or power transmission and distribution system, various types of lap joints. Cover type insulation protection, to prevent flashover or discharge caused by small animals, dust, pollution, condensation and other accidents. Buckle type opening and closing design, convenient inspection and maintenance, without damaging the lap point. Crosslinked polyolefin material, excellent weather resistance, high temperature resistance, mechanical damage resistance.

Features

- Operating temperature: -40 to 105°C
- Voltage class: 1kV to 36kV
- Environmental friendly, RoHS compliant
- Standard Color: Red, Yellow, Green, Black
- According to customer drawings or lap joints shape size, to be customized.

CABLE REPAIR AND TAPE

R1 Wraparound Heat Shrink Cable Repair Sleeve

A rail and channel closure sleeve that repairs a damaged cable jacket without cutting the cable or removing the terminations



Operating Temperature	-25 to 90 °C
Full Recovery Temperature	135 °C minimum
Standard Length	Up to 1.5 m
Closure	Rail and channel with metal zipper
Standard Colour	Black
Cross Reference	TE Raychem CRSM

Introduction

Cross-linked semirigid polyolefin outer layer provides abrasion and corrosion resistance. Pre-coated adhesive inner layer provides waterproof sealing protection. Rail and channel closure design, suitable for quick repair of damaged power cable in irregular shapes and sizes.

Features

- Operating temperature: -25 to 90°C
- Minimum fully recovery temperature: 135°C
- Standard Length: ≤1.5m
- Standard Color: Black

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥14 MPa
Ultimate Elongation	ASTM D2671	≥300%
Heat Aging (150°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥12 MPa ≥200%
Water absorption (23°C/24h)	ASTM D2671	≤0.5%
Low-temperature flexibility (-25°C/4h)	ASTM D2671	No cracking
Heat shock (200°C/4h)	ASTM D2671	No cracking, dripping or flowing
Dielectric strength	ASTM D2671	≥15 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹³ Ω·cm
Dielectric constant	IEC 250	≤5.0
Fungus Resistance	ASTM G21	Non-growth

Dimensions

Part NO.	Application diameter (mm) Maximum	Minimum
R1-34/8	25	9
R1-42/10	32	12
R1-53/13	40	15
R1-62/22	47	25
R1-75/20	56	23

Part NO.	Application diameter (mm) Maximum	Minimum
R1-85/25	65	30
R1-93/25	70	30
R1-105/30	80	35
R1-122/30	92	35
R1-135/34	102	40
R1-146/38	110	44
R1-164/42	123	48
R1-175/50	132	58
R1-200/55	150	63
R1-210/65	160	75
R1-230/80	175	92
R1-260/100	195	115

Cross Reference

Tyco-Raychem: CRSM

CABLE REPAIR AND TAPE

T1 Compound Insulation Heat Shrink Tape

Adhesive lined heat shrink tape that seals and insulates irregular shapes where no tube or sleeve will fit



Voltage Range	1 kV to 36 kV
Operating Temperature	-55 to 110 °C
Full Recovery Temperature	125 °C minimum
Shrink Ratio	3:1 and 4:1
Compliance	Halogen free and RoHS
Wall	Single or adhesive lined dual wall

Introduction

Cross-linked polyolefin outer layer, pre-coated adhesive inner layer. Emergency repair of electrical system. Overlapping the irregular shaped substrate to provide a lap to lap sealing insulation and protection while tube or sleeve are not applicable.

Features

- Operating temperature: -55 to 110°C
- Minimum fully recovery temperature: 125°C
- Shrink ratio: 3:1 & 4:1
- Halogen-free, RoHS compliant
- Single or Dual wall optional
- Standard Color: Black, Other colors optional
- Voltage class: 1kV ~ 36kV

Technical Data

Property	Test Method	Requirement
Tensile Strength	ASTM D2671	≥10.4 MPa
Ultimate Elongation	ASTM D2671	≥200%
Heat Aging (120°C/168h) Tensile Strength Ultimate Elongation	ASTM D2671	≥7.3 MPa ≥100%
Longitudinal Change	ASTM D2671	-10% to +10%
Dielectric strength	ASTM D2671	≥10 kV/mm
Volume resistivity	ASTM D2671	≥1.0×10 ¹⁴ Ω·cm

Dimensions

Part NO.	Width (mm) A	Thickness (mm) W	Length (m) L
T1-25A	25.0±2.0	0.8±0.2	5 or 10
T1-50A	50.0±4.0	0.8±0.2	5 or 10
T1-100A	100.0±4.0	0.8±0.2	5 or 10
T1-25B	25.0±4.0	1.0±0.2	5 or 10
T1-50B	50.0±4.0	1.0±0.2	5 or 10
T1-100B	100.0±4.0	1.0±0.2	5 or 10

Cross Reference

Tyco-Raychem: HVBT