# **Thomas & Betts MORE POWER TO YOU**



For over 70 years, Canadian electrical contractors, plant engineers and engineering consultants have placed their trust in Thomas & Betts electrical components. Today, Thomas & Betts Ltd. offers a complete package of market-driven products and services designed to give you the power to succeed in today's economy.

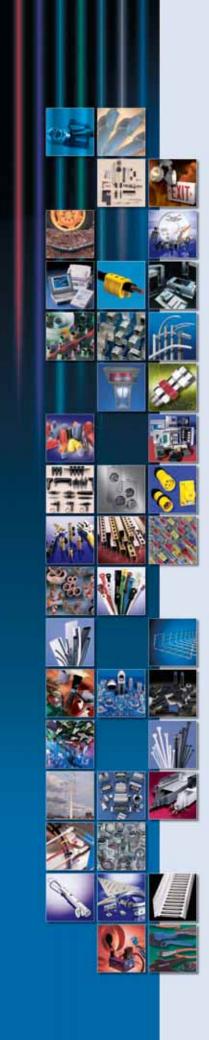
# THE POWER OF T&B ENGINEERED PRODUCTS AND SERVICES

Our products and services continue to set new standards for quality, reliability and innovation.

- Highly-focused sales, product support and customer service team dedicated to serving the industrial MRO and OEM markets
- · Guaranteed, competitive pricing
- The broadest offering of field-proven, brand name products available from one manufacturer
- "One order, one shipment" for thousands of standard products through Thomas & Betts and your Signature Service distributor
- Reduced lead time on critical products through your Signature Service distributor
- Technical support via phone, fax on demand and the internet
- ISO-certified manufacturing quality engineering and manufacturing
- Local and national inventory support
- T&B Tool Lease program the tools you need today without tomorrow's investment







## THE POWER OF CHOICE

As North America's largest single source for electrical components, Thomas & Betts is powered by the longest and most complete list of reputable brand name products available from one manufacturer in the industry today. With services like "one order, one shipment" available through your Thomas & Betts distributor, the more T&B purchases you make, the more you can save.

To request information about any of these products contact your Regional Sales Office.

All-Struct™ aluminum and steel structures

Amerace® airfield lighting

Battpac® battery-powered and compression tools

**Blackburn**® compression connectors **Blackburn**® grounding products

Catamount™ one-piece ties and accessories

Color-Keyed® compression connectors

Deltec™ aerial cable support systems

**Diamond** <sup>™</sup> pole line hardware **Elastimold** <sup>®</sup> premolded connectors

for underground distribution applications

**Emergi-Lite**™ emergency lighting systems

**ExpressTray**™ wire-mesh cable management system

E-Z-Code® wire marker systems
E Z Ground™ compression connectors
Furseweld® exothermic connectors
Hazlux™ hazardous location lighting
Iberville® "roughing-in" products
Iberville® steel boxes and covers
Kold-n-Klose® forced encapsulated closures

and sheath repair systems

LRC® connectors, splices, adaptors and accessories

Lumacell® emergency lighting systems

Marrette® wire connectors and nonmetallic boxes

**Meyer**® transmission and light duty engineered steel poles

*Microlectric*® meter sockets and pole line hardware

**Mipco**® plugs, receptacles, modules, power outlets and connectors

 Ocal™

 Partex®
 wire marker systems

 Pos-E-Kon®
 industrial connectors

 Ready-Lite™
 emergency lighting systems

 Red\*Dot®
 weatherproof boxes and covers

 Reznor®
 heating, ventilation and cooling systems

 Russellstoll®
 plugs, receptacles and connectors

Sachs™ drop line and construction hardware, grounding and bonding products, signal security hardware

Safe-Ty® low profile in-line fasteners
Shield-Kon® grounding connectors and tools

**Shrink-Kon**™ insulation products

South River™ wireless antenna mounts and hardware

Sta-Kon® terminals and application tools

StarTeck™ fittings for teck cable

Steel City® floor boxes, access modules and poke throughs

Superstrut® metal framing, channel and accessories

Sure-Ty<sup>™</sup> automated fastening system

T&B cable tray systemsT&B conduit fittingsTy-Duct™ wiring duct

Ty-Rap® cable ties

# Shrink-Kon™

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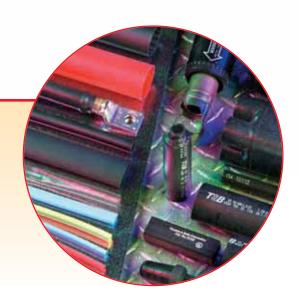
Thomas@Betts

## **Overview**

# Protect against moisture, corrosion and abrasion!

# T&B has you covered when it comes to insulation!

- · Easy to use
- Heat shrinkable
- · Products with heavy, medium, and thin walls
- · Covers available for H-type taps and splices





## Heavy-Wall Shrink-Kon™ Heat-Shrinkable End Cap & Boots

#### Redesigned for superior durability and performance!

Seals and insulates cable ends at a 600V rating. Installs fast, while providing insulation resistance to moisture, corrosion, and abrasion. The extra thickness at the tip of the end cap prevents sharp ends of the cable from puncturing the seal.

Seals and insulates multiconductor cables and conduit with the same cost savings and superior properties of T&B's heat-shrinkable tubing. These boots replace



## Heavy-Wall Shrink-Kon™ — Heat-Shrinkable Insulators

When it comes to moisture-proofing connections and terminations, T&B's heat-shrinkable tubing, boots, and end caps have proven themselves over years of service to the industry. Made of thermally stabilized cross-linked polyolefin, these heat-shrinkable insulators can be used over lead, steel, aluminum, copper, standard plastic and elastomeric insulating materials.

T&B heat-shrinkable insulators are designed to be easy to use. They provide an appropriate level of insulation and abrasion protection.

Where applicable, T&B heat-shrink insulators are UL Listed. Also, all standard size insulators have an internally applied adhesive sealant.

## T&B Heat-Shrinkable Insulators Offer:

- Heavy-duty protection
- · A full range of sizes from #14 to 2500 kcmil
- Field-proven reliability
- Internal sealant provides protection against moisture

#### Featured Products Include:

- High Shrink Ratio HSHR series with 6:1 shrink ratio designed for applications with extreme differences between cable, connector, and back shell sizes
- Flame Retardant HSFR series provides maximum flame retardancy

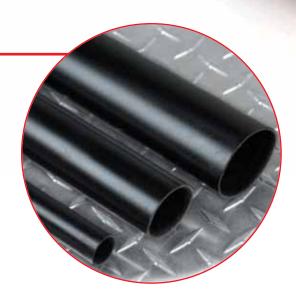


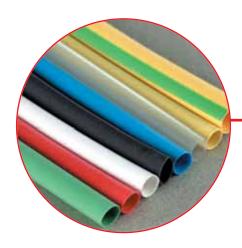
## **Overview**

## Shrink-Kon™ — Medium-Wall Tubing

More flexible than heavy-wall products, with excellent resistance to impact and abrasion.

- Seals and protects cable splices and terminations
- Thermoplastic adhesive liner guarantiees complete environmental protection and insulation





## Shrink-Kon™ — Thin-Wall Tubing

Manufactured from stabilized Polyolefin, these insulators are used to insulate bare Sta-Kon® and Color-Keyed® connectors and splices. They also provide a degree of strain relief and may be used to harness wires. Available in cutpieces or reels.

#### Featured Products Include:

- Standard non-lined 2:1 thin wall tubing
- 3:1 adhesive lined thin-wall CPO-A series provides excellent flexibility with environmental sealing capability
- Extra clear heat shrink for use on power connections and data connections

#### **Covers**

These new insulating covers provide hard-shell insulated protection for "H" type compression taps and splices, and, because there is no taping required, you get uniform quality and appearance each time. The exclusive locking design provides the range-taking capability. Only six H-tap insulating catalogue numbers accommodate the range of 6 AWG–1000 kcmil in the main and 12 AWG–500 kcmil.

- Hard-shell outer covers guard against impact... inner seal keeps out dust
- Installs quickly and easily without special tools... simply snaps together
- Eliminates time-consuming taping
- Provides high-quality, neat, uniform installations
- · Range-taking design reduces inventory



## **HS Series**





- Made of thermally stabilized cross-linked polyolefin, enabling a recovered wall thickness greater than that of the cable jacket replaced
- Withstands severe mechanical requirements of U.R.D., submersible, and direct burial installations
- Tubing, featuring an internally applied sealant, offers protection against moisture, and may be used over lead, steel, aluminum, copper, standard plastic and elastomeric insulating materials
- Shrink temperature of 120° C
- High-impact, abrasion, corrosion and chemical resistance
- Rated for 600V, 90° C continuous use
- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Meets: UL486D, CSA C22.2 No.198.2, ANSI C119.1, Western Underground Guide Numbers 2.4, 2.5, ICEA and NEMA insulation thickness requirements
- Continuous operating temperature: -55° C to 110° C
- T&B recommended up to 1 kV



## HS Series Specifications

Property	Test Method	Typical Performances
	Physical	
Tensile Strength	ASTM D412, ISO 37	2100 psi (14.5 MPa)
Elongation	ASTM D412, 130 37	600%
Elongation after Heat Aging (168 hrs. at 150°C)		500%
Heat Shock (4 hrs. at 225°C)	ASTM D2671	No cracking or flowing
Longitudinal Change	ASTIVI D2071	+1%, -10%
Low Temperature Flexibility (4 hrs. at -55°C)		No cracking
Specific Gravity	ASTM D792	1.1
Hardness (Shore D)	ASTM D2240	50D
	Electrical	
Delectric Strength	ASTM D149	500 V/Mil (20kV/mm)
Dielectric Voltage Withstand (2500V, 600Hz, 1 Min.)	UL 486D	No Breakdown, 24kV-1 min., 15kV-4 hrs.
Volume Resistivity	ASTM D257	1016 ohm-cm
	Chemical	
Fluid Resistance	MIL-DTL-23053	Good to Excellent
Fungus Reistance	ASTM G21	No growth
Copper Corrosion	ASTM D2671	No Corrosion
Water Absorption	ASTM D570	0.1%
	Adhesive	
Adhesive Lap Sheer (1 in./min. at 23°C)	ASTM D1002	125 psi (0.875 MPa)
Adhesive Softening Point	ASTM E28	90°C±5°C
Adhesive Peel Strength (300mm/min. at 23°C)  – to steel, aluminum, P.E.  – PVC	ASTM D 1000	35 lb/po linéaire 20 lb/po linéaire
Water Penetration	STM 706	No penetration after 236 hrs. of continuous immersion
		<u> </u>

# HS Series Heavy-Wall Heat-Shrinkable Tubing — Black

Cat. No.	Min. Expanded I.D.	Min. Max. Nom. Std. AL or ĆU splice w no larger tha [in.) (in.) (in.) (in.)		Length	Length no larger than		Cable Range	Std. Pkg.
	(in.)			Length (in.)	5	Qty		
HS16-12				3			#14 AWG	25
HS16-12L	0.35	0.12	0.07	6	0.27	1.00	to	25
HS16-12-4				48			#10 AWG	5
HS12-6				3			#8 AWG	25
HS12-6L	0.51	0.16	0.09	6	0.38	1.75	to	25
HS12-6-4				48	7		#6 AWG	5
HS6-1				4			#6 AWG	25
HS6-1L	0.75	0.24	0.09	8	0.63	2.50	to	25
HS6-1-4				48			#2 AWG	5
HS4-30				5			#1 AWG	20
HS4-30L	1.10	0.35	0.12	9	0.75	3.25	to	10
HS4-30-4				48			3/0 AWG	5
HS40-400				8			2/0 kcmil	10
HS40-400L	1.50	0.47		12			to	10
HS40-400-4				48			350 kcmil	5
HS500-1000				9			250 kcmil	3
HS500-1000L	2.00	0.63	0.16	15			to	
HS500-1000-4				48	_	_	500 kcmil	2
HS12-30**				12	_	_	800 kcmil	_
HS30-30**	3.54	1.18		30			to	
HS30-4**				48			1250 kcmil	
HS12-40**				12			1500 kcmil	1
HS30-40**	4.72	1.57	0.17	30			to	'
HS40-4-TB				48			2500 kcmil	







Order multiple is std. pkg.

All lengths have factory-applied sealant.

# HS Series Heavy-Wall Heat-Shrinkable Tubing — Red

Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Length (in.)	For 2-Way Connector Cable Sizes	Std Pkg. Qty
HS12-6LR	0.51	0.16	6	#8–6 AWG	25
HS6-1LR	0.75	0.24	8	#6–2 AWG	25
HS4-30LR	1.10	0.35	9	#1-3/0 AWG	10

Order multiple is std. pkg.

All lengths have factory-applied sealant.



# Heavy-Wall Tubing (25' rolls) — Black

Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Length (in.)	For 2-Way Connector Cable Sizes	Std Pkg. Qty	
HS16-12-25	0.35	0.12	0.07	#14–10 AWG		
HS12-6-25	0.51	0.16	0.09	#8–6 AWG		
HS6-1-25	0.75	0.24	0.09	#6-#2 AWG	1	
HS4-30-25	1.10	0.35	0.12	#1-3/0 AWG	'	
HS40-400-25	1.50	0.47	0.16	2/0-350 kcmil		
HS500-1000-25	2.00	0.63	0.16	250-500 kcmil		

Order by reel, not by feet. 25' reels **not** supplied with factory applied sealant.



<sup>\*\*</sup>Not UL Listed

# **HSHR Series** — **High Shrink Ratio**





- Accommodates a wide variety of connector shapes and configurations.
- Thermoplastic Adhesive Liner for complete environmental protection and insulation
- Continuous operating temperature: -55° C to 110° C
- Shrink temperature: 120° C
- Flame retardant

## HSHR Series Heavy-Wall Heat-Shrinkable Tubing



Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Nominal Recovered Wall (in.)	Code Cable Size	Standard Length (in.)	Std. Pkg. Qty
HSHR750-4	0.75	0.13	0.10	#22-#46 AWG		
HSHR1300-4	1.30	0.22	0.12	#8-700 AWG		25
HSHR1750-4	1.75	0.29	0.13	#4-1000 AWG	48	25
HSHR2000-4	2.00	0.33	0.13	#2-1250 AWG		
HSHR2750-4	2.75	0.46	0.14	1/0-1500 kcmil		15
HSHR3500-4	3.50	0.58	0.15	3/0-1750 kcmil		10
HSHR4700-4	4.70	0.78	0.15	300-2000 kcmil		5

Order multiple is std. pkg. Standard color: black

## **HSHR Series Specifications**

Property	Test Method	Typical Performances
	Physical	
Tensile Strength	ASTM D412, ISO 37	2100 psi (14.5 MPa)
Elongation	ASTM D412, ISO 37	600%
Elongation after Heat Aging (168 hrs. at 150°C)		500%
Heat Shock (4 hrs. at 225°C)	ASTM D2671	No cracking or flowing
Longitudinal Change	ASTIVI D2071	+1%, -10%
Low Temperature Flexibility (4 hrs. at -55°C)		No cracking
Specific Gravity	ASTM D792	1.1
Hardness (Shore D)	ASTM D2240	50D
	Electrical	
Delectric Strength	ASTM D149, IEC 243	500 V/Mil (20kV/mm)
Dielectric Voltage Withstand (2500 V, 60Hz, 1 Min.)	UL 486D	No Breakdown, 15kV-4 hrs.
Volume Resistivity	ASTM D257	1016 ohm-cm
	Chemical	
Fluid Resistance	MIL-DTL-23053/15	Good to Excellent
Fungus Reistance	ASTM G21	No growth
Copper Corrosion	ASTM D2671	No Corrosion
Water Absorption	ASTM D570	0.1%
	Adhesive	
Adhesive Lap Sheer (1 in./min. at 23°C)	ASTM D1002	125 psi (0.875 MPa)
Adhesive Softening Point	ASTM E28	90°C±5°C
Adhesive Peel Strength (300mm/min. at 23°C)  – to steel, aluminum, P.E.  – PVC	ASTM D 1000	35 lb/po linéaire 20 lb/po linéaire
Adhesive Blocking (30°C)	ASTM D1146	No Blocking
Water Penetration	STM 706	No penetration after 236 hrs. of continuous immersion

## HSFR Series — Flame-Retardant Heavy-Wall

3:1 Shrink Ratio



- Insulates and protects electrical splices and terminations
- High-impact and abrasion resistance
- · Thermoplastic adhesive liner
- Rated for 600V,90° C continuous use. Continuous operating temperature: -55° C to 110° C
- Shrink temperature of 120° C
- Meets: UL 486D, CSA 22.2 No.198.2, ANSI C119.1, Western Underground Guide Nos. 2.4, 2.5, MIL-DTL-23053/15, IEEE 383 Vertical Flame Test, ANSI C37.20.2, ICEA S-19-8 and NEMA insulation thickness requirements

# HSFR Series Heavy-Wall Heat-Shrinkable Tubing



Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Nominal Recovered Wall (in.)	Code Cable Size	Standard Length (in.)	Std. Pkg. Qty
HSFR16-12-4	0.35	0.12	0.07	#14-#10 AWG		
HSFR12-6-4	0.51	0.16	0.09	#8-#6 AWG	48	25
HSFR6-1-4	0.75	0.24	0.09	#6-#2 AWG		
HSFR4-30-4	1.10	0.35	0.12	#1-3/0 AWG	40	25
HSFR40-400-4	1.50	0.47	0.16	2/0-350 kcmil		
HSFR500-1000-4	2.00	0.63	0.10	250-500 kcmil	]	

Order multiple is std. pkg. - Standard color: black.

## HSFR Series Specifications

Property	Test Method	Typical Performances
	Physical	
Tensile Strength	ASTM D412, ISO 37	2100 psi (14.5 MPa)
Elongation	ASTIVI D412, ISO 37	600%
Longitudinal Change	ASTM D2671	+1%, -10%
Specific Gravity	ASTM D792	1.2
Elongation after Heat Aging (168 hrs. at 175°C)	ASTM D2671, ISO 37	500%
Heat Shock (4 hrs. at 225°C)	ASTM D2671	No cracking or flowing
Low Temperature Flexibility (4 hrs. at -55°C)	ASTIVI D2071	No cracking or splitting
Hardness (Shore D)	ASTM D2240	50D
Oxygen Index	ASTM D2863	27.00
Flammability	ASTM D2671	Flame Retardant
	Electrical	
Delectric Strength	ASTM D149	500 V/Mil (20kV/mm)
Dielectric Voltage Withstand (2500 V, 60Hz, 1 Min.)	UL 486D	No Breakdown, 24kV-4hrs, 15kV-4 hrs.
Volume Resistivity	ASTM D257	1016 ohm-cm
	Chemical	
Fluid Resistance	MIL-DTL-23053/5	Good to Excellent
Fungus Reistance	ASTM G21	No growth
Copper Corrosion	ASTM D2671	No Corrosion
Water Absorption	ASTM D570	0.2%
	Adhesive	
Adhesive Lap Sheer (1 in./min. at 23°C)	ASTM D1002	125 psi (0.875 MPa)
Adhesive Softening Point	ASTM E28	90°C±5°C
Adhesive Peel Strength (300mm/min. at 23°C)	ASTM D 1000	
- to steel, aluminum, P.E.		35 lb/po linéaire
- PVC		20 lb/po linéaire
Adhesive Blocking (30°C)	ASTM D1146	No Blocking
Adhesive Water Absorption	ASTM D570	Less than 0.3%
Water Penetration	STM 706	No penetration after 286 hrs. of continuous immersion



# **HSC Series End Caps**





- Provides effective method for sealing cable ends, pipe conduit, etc.
- Extra thickness at the tip of the end cap prevents sharp ends of the cable from puncturing the seal
- Flame retardant
- Rated from 600/1000V, 90° continuous use
- Shrink temperature of 120° C
- · Resistant to common fluids and solvents
- Adhesive liner provides complete environmental protection and insulation
- Heat indicating lines. Continuous operating temperature: -55° C to 110° C

## **HSC Series Heat-Shrinkable End Caps**

Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Recovered Wall (in.)	Code Cable Size	Nom. Length (in.)	Std. Pkg. Qty
HSC8-4	0.51	0.16	0.09	#8-#6 AWG	2.50	100
HSC2-20	0.75	0.24	0.09	#6-#2 AWG	2.50	100
HSC30-250	1.10	0.35	0.12	#1-3/0 AWG	3.00	
HSC300-600	1.50	0.47		2/0-350 kcmil	3.25	50
HSC700-1000	2.00	0.63	0.16	250-500 kcmil	3.50	
HSC750	2.70	0.87	0.10	600-1000 kcmil	4.00	10
HSC300*	3.50	1.18		800-1250 kcmil	4.50	5
HSC500*	4.70	1.57	0.17	1500-2500 kcmil	5.50	3

Order multiple is std. pkg. - \*Not UL Listed or CSA Certified.

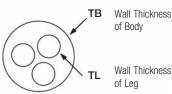


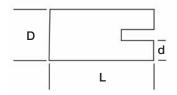
## HSC Series Specifications

Property	Test Method	Typical Performances
	Physical	
Tensile Strength		2100 psi (14.5 MPa)
Elongation	ASTM D412, ISO 37	550%
Elongation after Heat Aging (168 hrs. at 150°C)		500%
Heat Shock (4 hrs. at 225°C)		No cracking or flowing
ongitudinal Change on Recovery	ASTM D2671	+1%, -10%
ow Temperature Flexibility (4 hrs. at -55°C)		No cracking
Specific Gravity	ASTM D792	1.1
Hardness (Shore D)	ASTM D2240	50D
	Electrical	
Delectric Strength	ASTM D149, IEC 243	500 V/Mil (20kV/mm)
Dielectric Voltage Withstand (2500 V, 60Hz, 1 Min.)	UL 486D	No Breakdown, 15kV-4 hrs.
/olume Resistivity	ASTM D257	1016 ohm-cm
	Chemical	
Fluid Resistance	MIL-DTL-23053	Good to Excellent
Fungus Reistance	ASTM G21	No growth
Copper Corrosion	ASTM D2671	No Corrosion
Vater Absorption	ASTM D570	0.1%
	Adhesive	
Adhesive Lap Sheer (1 in./min. at 23°C)	ASTM D1002	125 psi (0.875 MPa)
Adhesive Softening Point	ASTM E28	90°C±5°C
Adhesive Peel Strength (300mm/min. at 23°C)	ASTM D 1000 (mod.)	
to steel, aluminum, P.E.	, , ,	35 lb/po linéaire
- PVC		20 lb/po linéaire
Adhesive Blocking (30°C)	ASTM D1146	No Blocking
Vater Penetration	STM 706	No penetration after 236 hrs. of continuous immersion
Room Temperature	168 hrs./40 psi	No leaks
Temp. Cycling (-40°C to 60°C)	50 cycles/15 psi	ivo leaks
Burst Pressure		100 psi (0.70 MPa)

# HSB Series — Heat-Shrinkable Breakout Boots









- Thermoplastic adhesive liner provides complete environmental protection and insulation
- Meets ESI 09-11
- Strain relief and mechanical protection
- Continuous operating temperature: -55° C to 100° C
- Shrink temperature of 135° C

## **HSB Series Heat-Shrinkable Breakout Boots**

		1	)		d	L	ТВ	TL	Application	
Cat. No.	No. Legs	Expanded Dia. (min.) (in.)	Recovered Dia. (max.) (in.)	Expanded Dia. (min.) (in.)	Recovered Dia. (max.) (in.)	Recovered Length (nom.) (in.)	Wall Thickness of body (nom.) (in.)	Wall Tickness of legs (nom.) (in.)	Legs 600V Conductor AWG/kcmil	Std. Pkg. Qty
HSB200-75-2	2	1.97	0.90	0.83	0.30	4.69	0.13	0.13	#3-300	
HSB120-50-3		1.50	0.50	0.65	0.16	4.47	0.11	0.11	#8-3/0	
HSB170-82-3	3	2.20	0.89	1.20	0.35	7.09	0.12	0.12	#1–600	
HSB240-112-3		2.83	1.38	1.46	0.69	7.01	0.16	0.12	300-1000	10
HSB125-50-4		1.83	0.47	0.59	0.12	3.74	0.10	0.08	#12-2/0	
HSB175-82-4	4	2.36	0.90	1.18	0.25	7.95	0.16	0.13	#4-600	
HSB265-120-4	1	3.10	1.40	1.50	0.49	9.45	0.13	0.13	3/0–1000	
HSB350-138-3		3.54	1.34	1.38	0.55	7.87	0.12	0.08	4/0–1000	
HSB430-157-3	3	4.33	1.38	1.57	0.69	7.01	0.16	0.12	300-1000	5
HSB490-200-3		4.92	2.32	2.00	1.00	11.14	0.15	0.15	450–1000	S
HSB520-135-4	4	5.25	3.00	1.35	0.55	10.02	0.13	0.16	4/0–1000	

Order multiple is std. pkg.

## HSB Series Specifications

Property	Test Method	Typical Performances						
Physical								
Tensile Strength	2100 psi (14.5 MPa)							
Ultimate Elongation	ASTM D412, ISO 540	600%						
Elongation after Heat Aging (168 hrs. at 175°C)		520%						
Heat Shock (4 hrs. at 225°C)	ASTM2671	No dripping, cracking, flowing						
Low Temperature Flexibility (-55°C)	ASTIVIZOFT	No cracking						
Flammability	ASTM D630	Self ext. within 1.97 sec.						
	Electrical							
Delectric Strength	ASTM D2671	280 V/Mil (11kV/mm)						
Chemical								
Water Absorption	ASTM D570	0.03%						

# **Medium-Wall Heat-Shrinkable Tubing**

# **HSMW Series — Medium-Wall Tubing**





- · Seals and protects cable splices and terminations
- High resistance to impact and abrasion
- Shrink temperature of 120° C
- Continuous operating temperature: -55° C to 110° C
- Thermoplastic adhesive liner guarantees complete environmental protection and insulation



## **HSMW Series Medium-Wall Heat-Shrinkable Tubing**

Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Nominal Recovered Wall (in.)	Code Cable Size	Standard Length (in.)	Std. Pkg. Qty	
HSMW400-48	0.40	0.15		#4-#14 AWG			
HSMW750-48	0.75	0.22	]	4/0-#8 AWG			
HSMW1100-48	1.10	0.40	1	400-#1 AWG			
HSMW1300-48	1.30	0.40	0.08	600-#1 AWG		25	
HSMW1500-48	1.50	0.50	0.08	750–3/0 kcmil			
HSMW1700-48	1.70	0.50	0.50		1000-2/0 kcmil	48	
HSMW2050-48	2.05	0.75		250-600 kcmil	40		
HSMW2750-48	2.75	1.00		500-1000 kcmil		15	
HSMW3500-48	3.50	1.18	0.10	750-1250 kcmil		10	
HSMW4700-48	4.70	1.57	0.11	1500-2500 kcmil			
HSMW6700-48	6.70	2.30	0.11	-		5	
HSMW9000-48	9.00	3.00	0.12	-			

Order multiple is std. pkg.

#### HSMW Series Specifications .....

	nomin correct opcomountain	
Property	Test Method	Typical Performances
	Physical	
Tensile Strength		2100 psi (14.5 MPa)
Elongation	ASTM D412, ISO 37	550%
Elongation after Heat Aging (168 hrs. at 150°C)		500%
Heat Shock (4 hrs. at 225°C)		No cracking or flowing
Longitudinal Change	ASTM D2671	+1%, -10%
Low Temperature Flexibility (4 hrs. at -55°C)		No cracking
Specific Gravity	ASTM D792, ISO/R1183	1.1
Hardness (Shore D)	ASTM D2240	50D
	Electrical	
Delectric Strength	ASTM D149, IEC 243	500 V/Mil (20kV/mm)
Dielectric Voltage Withstand (2500V, 600Hz, 1 Min.)	UL 486D	No Breakdown, 24kV-1 min., 15kV-4 hrs.
Volume Resistivity	ASTM D257	1016 ohm-cm
	Chemical	
Fluid Resistance	MIL-DTL-23053/5, ISO 1817, ISO 37	Good to Excellent
Fungus Reistance	ASTM G21	No growth
Copper Corrosion	ASTM D2671	No Corrosion
Water Absorption	ASTM D570	0.1%
	Adhesive	
Adhesive Lap Sheer (1 in./min. at 23°C)	ASTM D1002 (mod.)	125 psi (0.875 MPa)
Adhesive Softening Point	ASTM E28	92°C/-5°C
Adhesive Peel Strength (300mm/min. at 23°C)	ASTM D 1000	
- to steel, aluminum, P.E.		35 lb/po linéaire
- PVC		20 lb/po linéaire
Adhesive Blocking (30°C)	ASTM D1146	No Blocking
Water Penetration	STM 706	No penetration after 286 hrs. of continuous immersion

**FL** 

# **Thin-Wall Heat-Shrinkable Tubing**





- Flame-retardant, cross-linked polyolefin
- Continuous operating temperature: -55° C to 135° C
- Shrink temperature of 120° C
- Meets UL 224, 125° C; CSA C22.2 No.198.1, 125° C; MIL-DTL-23053/5 Class 1&2; AMS 3636 & 3637; DEF STAN 59-97, Issue 3, Type 2a

## CPO Series – Thin-Wall Heat-Shrinkable Tubing

#### Length ft **Final Series** Colour Order No. **CPO63 +** CP063-0-C Available Packaging Available Colours 25' reel O • Black 5 • Green C • Clear 6 • Blue Bulk 2 • Red 9 • White 100' 4 • Yellow Green & Yellow Striped\* (see page 12 for lengths)

CATALOGUE NUMBER CONSTRUCTION

Cat. No.*	Min. Expanded I.D. (in.)	Max. Recovered I.E. (in.)	Nom. Recovered Wall Thickness (in.)	Code Cable Size
CP063	0.06	0.05		-
CP093	0.09	0.05	0.02	-
CP0125	0.13	0.06	0.02	#24-#30 AWG
CP0187	0.18	0.09	1	#14-#22 AWG
CP0250	0.25	0.13		#10-#16 AWG
CP0375	0.38	0.19	0.03	#6-#12 AWG
CP0500	0.50	0.25	0.03	#1-#6 AWG
CP0750	0.75	0.38	1	4/0-#2 AWG
CP01000	1.00	0.50	0.04	350-2/0 kcmil

\*See catalogue construction to complete.

UL Recognized File Number E137759 and CSA Certified. (NOTE: Clear material not UL Recognized). When ordering standard package, order by package not feet. Larger diameters available upon special request; contact your Regional Sales Office. Order multiple for 4' sticks is 25 sticks.

Order multiple for reels is 1 reel.

Series	Bulk Length (ft)	Series	Bulk Reel Length (ft)
CPO63 = 1/16"		CPO375 = 3/8"	500
CPO93 = 3/32"	1.000	CPO500 = 1/2"	400
CPO125 = 1/8"	1,000	CPO750 = 3/4"	
CPO187 = 3/16"		CPO1000 = 1"	300
CPO250 = 1/4"	500	GF 0 1000 = 1	

Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.E. (in.)	Nom. Recovered Wall Thickness (in.)	Std. Pkg. Qty
CP063-0-6	0.06	0.03		
CP093-0-6	0.09	0.05	0.02	
CP0125-0-6	0.13	0.06	0.02	20
CP0187-0-6	0.19	0.09		20
CP0250-0-6	0.25	0.13		
CP0375-0-6	0.38	0.19	0.03	
CP0500-0-6	0.50/	0.25	0.03	10
CP0750-0-6	0.75/	0.38		10
CP01000-0-6	1.00	0.50	0.04	5

Order multiple is std. pkg.

Catalogue numbers listed are Black color, other colors available upon request. Contact your Regional Sales Office.



## Shrink-Kon™ Thin-Wall Insulation Kit

Catalogue No.	Description	Weight Each Kit	UPC Code
CHS-KIT	43' (13 m) Assorted Colors, Sizes – Thin-Wall Heat Shrink Tubing in plastic reusable case	1 lb / 0.45 kg	76821092835

Shrink-Kon thin-wall heat shrink kits feature useful colors and sizes in a convenient resealable storage box.

## **CHS-KIT Thin-Wall Insulation Kit**

Now brought to you in color!

Shrink-Kon's new Thin-Wall Heat Shrink Kit features a large assortment of practical colors and sizes for your demanding jobs. Great for identification and adding a professional finishing touch on wire termination projects.

- Over 43' (13 m) of multi-colored polyolefin thin-wall heat shrink
- Convenient plastic kit for single storage location
- Individual 6" (15 cm) pieces for easy installation
- 2:1 shrink ratio
- UL Recognized and CSA approved
- Wide range of sizes 3/16" (9 mm) to 1" (25 mm)

## **Products included in CHS-KIT**

#### Color Quantity Per Kit

Qty/Kit	Size in. (mm)	Catalogue No.	Black	Clear	Blue	Yellow	Red	Green	White
36	3/16 (5)	CPO187+	6	6	4	4	6	4	6
24	1/4 (6)	CPO250+	6	4	2	2	4	2	4
12	3/8 (9)	CPO375+	2	2	2		2	2	2
6	1/2 (12)	CPO500+	1	1	1		1	1	1
4	3/4 (19)	CPO750+	1	1			1		1
4	1 (25)	CPO1000+	1	1			1		1

<sup>+</sup>Actual catalogue numbers require suffix for appropriate color.



# **Shrink-Kon™ Thin-Wall Insulation Kit**

Catalogue No.	Description	Weight Each Kit	UPC Code
HS-KIT	37' (11 m) Assorted Sizes – Black Color Thin-Wall Heat Shrink Tubing in plastic reusable case	1 lb / 0.45 kg	76821093898

## **The Original Black Version HS-KIT**

- Over 37' (11 m) of black polyolefin thin-wall heat shrink
- Convenient plastic kit for single storage location
- Individual 6" (15 cm) pieces for easy installation
- 2:1 shrink ratio
- UL Recognized and CSA approved

## **Products included in HS-KIT**

Qty/Kit	Size in. (mm)	Catalogue No.
32	3/16 (5)	CPO187-0-6
20	1/4 (6)	CPO250-0-6
8	3/8 (9)	CPO375-0-6
6	1/2 (12)	CPO500-0-6
4	3/4 (19)	CPO750-0-6
4	4 (25)	CPO1000-0-6

# Custom order lengths for those special jobs!

# 2:1 Shrink Ratio



# Custom-Cut Length of Bulk Packaging – Thin-Wall Tubing

To best meet your requirements for thin-wall heat-shrinkable tubing, Thomas & Betts welcomes the opportunity to cut bulk reels of tubing. Minimum order requirement is one standard bulk reel, and multiples thereof. See table for bulk reel length by size. Tubing cannot be cut smaller that 1/2".

When ordering custom-cut lengths of tubing, order by piece, not by length. To determine the minimum number of pieces to order, simply figure how many pieces of a specific length of tubing is required to make use of a complete bulk reel.

Series	Bulk Reel Length (ft)	Series	Bulk Reel Length (ft)
CPO63 = 1/16"		CPO375 = 3/8"	500
CPO93 = 3/32"	1.000	CPO500 = 1/2"	200
CPO125 = 1/8"	1,000	CPO750 = 3/4"	
CPO187 = 3/16"		CPO1000 = 1"	100
CPO250 = 1/4"	500	GF01000 = 1	

	CUT PIECE (	CATALOGUE NO. CONSTRUCTION	
THIN-WALL SERIES	MINIMUM Expanded I.D. (IN.)	COLOUR	LENGTH (IN.)
CPO =	63 = 0.063	0 - Black	<b>XXXX</b> – 4 digits specify
	93 = 0.093	C = Clear	length of cut in inches
Corss-Linked	125 = 0.125	2 = Red	
Modified	187 = 0.187	4 = Yellow	
Polyolefin	250 = 0.250	5 = Green	
	375 = 0.375	6 = Blue	
	500 = 0.500	9 = White	
	750 = 0.750	S = Green & Yellow Striped	
	1000 = 1.000		

Example: CPO + 125 + 2 + 1.500 = CPO125-2-1.500 CPO Thin-wall Shrink, size 125 (0.125"), red colour, 1.5" long Contact your Regional Sales Office for bulk reel quantity

## Exemple 1

If a bulk length of tubing is 1.000' and the desired length of each individual piece is 6", the minimum order requirement is 2,000 pieces.

Given (length of reel)	1,000′
Convert to inches by multiplying by 12	! 12 x 1,000
Length of reel in inches	= 12,000
Divide by desired length	12,000 ÷ 6
Total number of 6" pieces	
in a 1,000' reel (Minimum Order)	= 2,000

#### Exemple 2

If a bulk reel of tubing is 400' and the desired length of each individual piece is 2", the minimum order requirement is 2,400 pieces.

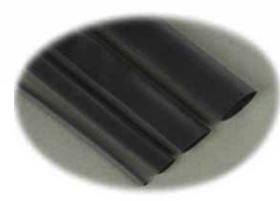
Contact your Regional Sales Office for pricing and availability on cut pieces.

#### 

Property	Test Method	Typical Performances			
	Physical				
Tensile Strength	ASTM D412, ISO 37	2200 psi (15.0 MPa)			
Elongation	ASTIVI D412, ISO 37	400%			
Longitudinal Change	ASTM D2671	+1%, -10%			
2% Secant Modulus	ASTIVI D2071	16,000 psi (110 MPa)			
Specific Gravity	ASTM D792, ISO/R1183	1.3" (colors) 0.95" (clear)			
Restricted Shrinkage		No cracking			
Elongation after Heat Aging (168 hrs. at 175°C)		350%			
Heat Shock (4 hrs. at 250°C)	ASTMD2671	No cracking or flowing			
Low Temperature Flexibility (4 hrs. at -55°C)		No cracking or Splitting			
Flammability		Flame Retardant (except Clear)			
	Electrical				
Delectric Strength	ASTM D2671, IEC 243	600 V/Mil (24kV/mm)			
Volume Resistivity	ASTM D2671	1016 ohm-cm			
	Chemical				
Fluid Resistance	MIL-DTL-23053/5, ISO 1817, ISO 37	Good to Excellent			
Fungus Reistance	ASTM G21	No growth			
Copper Corrosion	ASTM D2671	No Corrosion			
Water Absorption	ASTM D570	0.2%			

# CPO-A Series — Thin-Wall, Adhesive Lined





- Adhesive lined for moisture-proof environmental seal
- · High 3:1 shrink ratio for covering irregularly shaped objects
- Continuous operating temperature: -55° C to 110° C
- Shrink temperature: 120° C

# **CPO-A Series Thin-Wall Heat-Shrinkable Tubing**

Cat. No.	Min. Expanded I.D. (in.)	Max. Expanded I.D. (in.)	Nom. Recovered Wall (in.)	Recovered Code Cable		Std. Pkg. Qty	
CPO-A-125-48	0.13	0.02	0.04	#24-#30 AWG			
CPO-A-187-48	0.18	0.06		#14-#22 AWG			
CPO-A-250-48	0.25	0.08	0.05	#10-#22 AWG	48	25	
CPO-A-375-48	0.38	0.14		#6-#16 AWG	40	∠5	
CPO-A-500-48	0.50	0.19	0.07	#2-#12 AWG			
CPOA-750-48	0.75	0.31	0.07	3/0-#4 AWG			

Note: Non-standard colours, sizes, and lengths available subject to your Regional Sales Office quotation.

Standard colour: Black

## CPO-A Series Specifications

Property	Test Method	Typical Performances								
Physical										
Tensile Strength	ASTM D412, ISO 37	2200 psi (15.0 MPa)								
Elongation	ASTIVI D412, ISO 37	400%								
Heat Shock (4 hrs. at 250°C)		No cracking or Flowing								
Longitudinal Change	ASTM D2671	+/-5%								
Low Temperature Flexibility (4 hrs. at -55°C)		No cracking								
Specific Gravity	ASTM D792, ISO/R1183	1.1								
2% Secant Modulus	ASTM D2671	1600 psi (110 MPa)								
Heat-Resistant Properties (168 hrs. at 175°C)	MIL-DTL-23053/4	240%								
Flammability	ASTM D2671	Moderately Flame Retardant								
	Electrical									
Delectric Strength	ASTM D2671, IEC 243	600 V/Mil (24kV/mm)								
Volume Resistivity	ASTM D2671	1016 ohm-cm								
	Chemical									
Fluid Resistance	MIL-DTL-23053/5, ISO 1817, ISO 37	Good to Excellent								
Fungus Reistance	ASTM G21	No growth								
Copper Corrosion	ASTM D2671	No Corrosion								
Water Absorption	ASTM D570	0.2%								

## CHS Series — Clear Thin-Wall PVC Heat Shrink

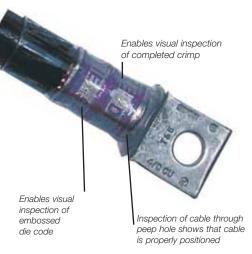


- Clear shrink enables user to inspect die and crimp details after installation
- Flexible PVC tubing is suitable for industrial and electronic applications
- UL standard UL224, VW-1 rated
- CSA standard C22.2 no.198.1
- Flame retardant
- Low shrink temperature of 110° C
- Dielectric strength 600V/MIL





# CHS Series Thin-Wall Heat-Shrinkable Tubing Min. Max. Nominal Std Std Std



Cat. No.	Min. Expanded I.D. (in.)	Max. Recovered I.D. (in.)	Nominal Recovered Wall (in.)	Code Cable Size	Std Length (ft.)	Std Pkg. Qty
CHS18	0.13	0.06	0.02	#22-#18 AWG	50	
CHS18B	0.10	0.00	0.02	#ZZ #107WG	250	
CHS14	0.25	0.13		#16-#10 AWG	50	
CHS14B	0.20	0.10		#10 #10 /WG	250	
CHS38	0.38	0.19	0.03	#8-#6 AWG	50	
CHS38B	0.50	0.13	0.03	#0-#0 AVVG	250	
CHS12	0.50	0.50 0.25		#4-#2 AWG	50	
CHS12B	0.50	0.23		#4-#2 AVVG	250	1
CHS34	.75 0.38			#1-3/0 kcmil	50	1 '
CHS34B	.73	0.36		#1-3/0 KCIIIII	250	
CHS100	1.00	1.00 0.50		4/0-300 kcmil	25	1
CHS100B	1.00	0.50	0.04	4/0-300 KCIIII	100	
CHS112	1.50	1.50 0.75		350-700 kcmil	25	
CHS112B	1.50	0.75		330-7 00 KCITIII	100	
CHS200	2.00	1.00		750–1.000 kcmil	25	
CHS200B	2.00	2.00 1.00		0.05 /50-1,000 kcmii		

Standard package is in reels. Order by reel; not by feet.

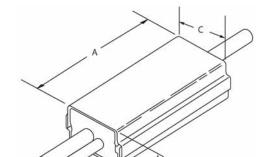
## CHS Series Specifications

Property	Test Method	Typical Performances							
Physical									
Tensile Strength	ASTM D412, ISO 37	3300 psi (23.0 MPa)							
Elongation	A31101 D412, 130 37	300%							
Longitudinal Change	ASTM D2671	+/-10%							
2% Secant Modulus	ASTIVI D2071	16,000 psi (110 MPa)							
Specific Gravity	ASTM D792, ISO/R1183	1.31							
Elongation after Heat Aging (168 hrs. at 136°C)	ASTM D2671, ISO 37	250%							
Heat Shock (4 hrs. at 250°C)		No cracking or Flowing							
Low Temperature Flexibility (1 hrs. at 10°C)	ASTM D2671	No cracking or Slitting							
Flammability		Self Extinguishing							
	Electrical								
Delectric Strength	ASTM D2671, IEC 243	600 V/Mil (24kV/mm)							
Volume Resistivity	ASTM D2671	1016 ohm-cm							
	Chemical								
Fluid Resistance	MIL-DTL-23053/5, ISO 1817, ISO 37	Good to Excellent							
Fungus Reistance	ASTM G21	No growth							
Copper Corrosion	ASTM D2671	No Corrosion							
Water Absorption	ASTM D570	0.3%							



# H-Tap Insulating Covers (Hard Covers)

- Interlocking insulating covers for H-type compression taps
- Easy installation: Place the H-Tap in the cover and snap the cover closed
- Consult your Regional Sales Office for flame-retardant version
- · Can also be used on C-Taps







Cat. No.	No	Std.		
	A (Length)	B (Thick.)	C (Width)	Pkg. Qty
HTC2S	2	1.13	1.44	15
HTC2	3.5	1.13	1.44	15
HTC40	4.25	1.56	2	2
HTC40L2	5.75	1.50	2	2
HTC500	6	1.75	2.75	8
HTC1000	7	2.38 3.88		2
HTC1000L	10	2.36	5.66	3

## Specifications ......

- HTC2 and HTC2S use insulation wrap instead of end cushions for inner seal.
- Connector Cat. Nos. 54755 through 54790 and 63148 through 63180 require hydraulic crimping tools.
   Refer to instruction sheets
- Outer Hard Shell Covers: High-impact black thermoplastic (Noryl) Flammability Class, UL 94V-1
- Inner seal: Black neoprene sponge soft closed cell, oxygen index 28% UL 94 HBF
- Temperature Rating: 90° C Maximum
- Voltage Rating: 600V Maximum

## For H-Tap Applications

Cover Cat. No.	AL/CU H-Tap No.	CU H-Tap
HTC2	63105	-
HTC2S	-	CHT814-10
HTC40	63110 63118 63125 63140	CHT214-9 CHT250214-8 CHT2514-7 CHT2502-6
HTC500	63148 63160	CHT50010-5/CHT50040-4 CHT75010-3/CHT750350-2
HTC1000L	63170	-
HTC1000	63180/63169	CHT750350-1F

## For C-Tap Applications

Cover Cat. No.	C-Tap No.	Colour Code
HTC40	54720 54725 54730 54755 54760	Brown Green Pink Blue Brown
HTC40L2	54735 54740 54745 54750	Black Orange Purple Yellow
HTC500	54765 54770 54775 54780 54785	Pink Black Yellow White –
HTC1000	54790	-



# **H-Tap Insulating Covers** (Soft Covers)

- Eliminates taping
- Provided with three positive locking latches and overlapping fringe for maximum cable insulation

Cat. No.	Wire F	Range	Installs "H" Tap	Std. Pkg. Qty	
	Min.	Max.	Cat. No.		
HT20C	6	2/0	63110 & 63125	50	
HT40C	1	4/0	63140 & 63148	25	
HT600C	2	500 kcmil	63160 & 63169	10	
HT1000C	1/0	750 kcmil	63180	5	
HT100C-L	1/0	1000 kcmil	63170	3	

Order multiple is std. pkg.

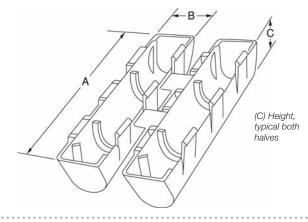


## ·· Specifications ·····

• Rating: 90° C, 600V

• Material: Flame-retardant, high-impact polypropylene

· Colour: Black

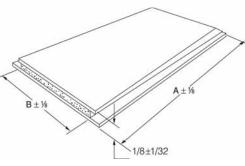


# **H-Tap Insulating Covers**

Cat. No.	Wire F	lange	Use to insulate		In.	"A"	"В"		
oat. No.	Max.	Min.	T&B H-Taps	A B		C	Dim.	Dim.	
HT20C	2/0	6	6110/63115 63125/63120	4.5	1.25	1.13			
HT40C	4/0		63140 63148	5.61	1.41	1.19	_	-	
HT600C	500 kcmil	2	63160/63169	6.81	2.13	1.45			
HT1000C	100 kcmil to 500 kcmil	250 kcmil to 1/0 AWG	63180				[184.15 mm] 7.250	2.330	
HT100C-L	1000 kcmil to 500 kcmil	250 kcmil to 250 kcmil	63170	_	_	_	[263.40 mm] 10.374	+0.060	

# **Adhesive Insulating Covers**

- · Seals against moisture
- Voltage rating up to 600
- Workable from -10° C to 49° C (14° F to 120° F))
- Maximum operating temperature of 80° C (176° F)
- · No installing tools required
- · Also available in 10' rolls; consult your Regional Sales Office





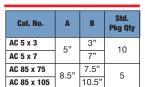
## Specifications .....

#### **Electrical**

- Dielectric Constant: 3.2 ASTM-D150 (60 Hz)
- Power Factor: 007 ASTM-D150 (60 Hz)
- Dielectric Strength: 340 Volts/mil ASTM-D1373

#### **Chemical**

- Water Absorption: 0.06% ASTM-570
- Ozone Resistance: Excellent: 03% ASTM-D1373
- CorrosionNone Visible: per ASTM-D 69



Order multiple is std. pkg.

- UL Listed File No. E9809 for use with T&B Covers
- For "H" Taps, "C" Taps, two-way connectors, mechanical taps, and Color-Keyed® lugs and joints.
- Material: 6 mil vinyl backing, butyl rubber mastic adhesive thickness 1/8" approx.
   Polyethylene release sheet.
- Not for submersion in liquid.

Adhesive Insulator Cat. Nos.	Compression Lug Cat. Nos.								Compression Two-Way Connector Cat. Nos.			"H" Tap Cat. Nos.	"C" Tap Cat. Nos	Compression Cable Joint Cat. Nos.		
	60096	60113	60130	60150	54132	54145	54160	54207	54906	54860	60500		54806	63105	54710	54610
	60097	60114	60150	60151	54134	54108	54162	54208	54942	54862	60501		54807	_	54715	54615
	60099	60016	60230	60230	54105	54147	54163	54255	54947	54864	60507		54806	_	54720	54620
	60101	60017	60236	60236	54135	54148	54111	54209	54909	54866	60512		54504	_	54725	54625
	60102	60018	60238	60238	54136	54150	54165	54210	54910	_	60516		54505	_	54730	54630
AC5X3	60103	60120	60242	60242	54138	54152	54167	54260	54965	-	60905		54506	_	54735	54635
Size Key	60104	60122	60244	60244	54106	54153	54168	54211	54970	-	60910		54507	_	54740	_
#2	60106	60123	60248	60248	54139	54109	54112	54265	54850	-	60915		54506	_	54745	_
	60107	60124	60250	60250	54140	5415	54170	54212	54852	-	60920		54509	_	54750	_
	60108	60126	54104	54104	54107	54157	54204	54270	54854	_	60925		54500	_	_	_
	60109	60128	54130	54130	54142	54158	54205	54930	54856	_	54804		54511	_	_	_
	60112	60129	54131	54131	54143	54110	54206	54905	54858	-	54805		_	-	-	-
	-	60152	60169	60267	54173	54115	54129	54222	54920	-	60522	60945	54516	63110	54755	54640
	-	60153	60174	60268	54174	54183	54213	54291	54923	-	60530	60950	54518	63115	54760	54645
	-	60154	60172	60269	54113	54116	54275	54223	54928	-	60538	60955	54809	63120	54765	54650
	-	60156	60174	60271	58161	54185	54214	54295	54868	-	60542	60960	54810	63125	54770	-
	-	60157	60176	60276	58162	54118	54280	54224	54870	-	60548	60965	54811	-	54775	-
AC 5 x 7	-	60159	60178	60274	58163	54187	54215	54226	54872	-	60554	60970	54812	-	54780	-
Size Key	_	60160	60180	60275	58165	54120	54282	54228	54874	-	60560	54509	54813	-	-	-
#4	-	60162	60254	60276	58166	54122	54216	54913	54876	-	60565	54510	54814	-	-	-
	-	60163	60256	60277	54178	54123	54218	54914	54878	-	60568	54511	54815	-	_	_
	-	60165	60260	60278	54179	54124	54286	54915	54880	-	60574	54512	54816	-	_	_
	-	60166	60262	60280	54114	54126	54220	54916	54882	-	60930	54513	54817	-	_	_
	-	60168	60265	54172	54181	54128	54289	54918	_	-	60935	54514	_	-	_	_
	-	-	-	-	-	-	-	-	-	-	60940	54515	-	-	-	-
	-	_	_	-	60184 60284	_	_	-	_	_	60574 60576		54522 54523	63130 63135	_	_
	_	_	_	_	00204		_	_	_	-	60578		54523	63140	_	_
A005 v 75	_	_	_	_	_	_	_	_	_	-	60580		54524	63145	_	_
AC85 x 75 Size Kev	_	_	_	_	_	_	_	_	_	-	60584		54528	63150	_	
#6	_	_	_	_	_	_	_	_	_	-	60975		54820	- 03130	_	
""	_	_	_	_	_	_	_	_	_	-	60975		54823	_	_	_
	_	_	_	_	_	_	_	_	_	-	60985		54828	_	_	
	_	_	_	_	_	_	_	_	_	_	54520		-	_	_	_
AC85 x 105	_	_	_	_	_	_	_	_	_	_	_	_	-	63155	_	_
Size Key	_	_	_	_	_	_	_	-	_	_	_	_	_	63160	_	_
#8	_	_	_	_	_	_	_	_	_	_	_	_	_	63165	_	_

Once you try it, you'll wonder what you ever did without it!





Cat. No.	Width (in.)	Length (ft)	Thickness (mils)	Color	Std Pkg. Qty				
Self-Fusing I	Self-Fusing Insulation Tape								
TBFT421-36		36	40	Red	10				
TBFT201-36	1	30	20	Black	10				
TBFT201-6		6	20		6				
Smooth Filler Putty Compound									
TBFP9-2	1	2	-	White	1				

Standard package is rolls. Order by rolls; not by feet.

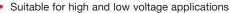
#### Features and Benefits

- · Requires no heat gun or adhesive to form a moistureproof abrasion-resistant bond
- Easy-release, non-static-sensitive, high-visibility liner peels right off
- Self-fusing tape material adheres to itself for ease of installation
- Creates an immeidate, permanent bond even when wet - no waiting period
- Stable even under externe temperatures:  $-90^{\circ}$  C to  $260^{\circ}$  C ( $-130^{\circ}$  F to  $500^{\circ}$  F)
- UV, radiation, arc-track, ozone, steam, moisture and saltwater-resistant
- Easily removable just slice with a knife and pull off -

# Quick and easy inslulation no heat or adhesive required!

You won't believe how easy it is to use Shrink-Kon™ Self-Fusing Insulation Tape to insulate splices, terminations and connections. Forget the heat gun and adhesive. Two layers of this self-amalgamating tape form a flexible dielectric layer that protects your connection against moisture, humidity and corrosion. The tape offers high tensile strength, enabling you to stretch the first layer of tape to form a solid, compressed, watertight seal. Apply the second layer with minimal to no stretch, and your insulation job is complete!

- · just to layers form a moistureproof, abrasion-resistant, dielectric seal
- Easy-release, non-straticsensitive liner peels right off
- Tape adheres only to itself for ease of installation
- Creates and immediate. permanent bond even . when wet





Resistant to UV radiation, arc track, ozone, steam, moisture and saltwater

Easily removable - just slice with a knife and pull off - leaves no residue

Smooth filler putty compound available for use under tape when insulating bolted or dimensionally inconsistent splices and terminations





TBFP9-2

## Specifications ......

- · Material: Modified silicone rubber compound
- · Tensile Strength: 1200 psi
- Dielectric Strength: 20 mil: 600 vpm; 40 mil: 800 vpm
- Abrasion Resistance: 110 lbs./in.
- Water Absorption: < 0.5%
- Temperature Range: 90° C to 260° C (-130° F to 500° F)



- Repair deteriorated insulation on cables and conductors
- Insulate and seal, underground and above-ground bonding installations
- Insulate harmessing, bundling, cabling and wiring in aircraft, automotive, marine and other industrial machinery/equipment
- Motor connections
- Protects against vibration, scratching and moisture

# HSTS25 — Tape Sealant



- Available in a 25-ft. roll
- Used in conjunction with T&B Heat-Shrinkable Insulators for better moisture sealing

## **Installation Guidelines**

- The cable, etc., should be relatively clean and free of greases, oils, and other foreign substances.
- 2. It is best to overlap each wrap of tape by 1/4 to 1/2 the width for the best seal.
- 3. When using heat-shrinkable products, most applications require only 1 or 2 layers of tape prior to sliding tubing in place.
- 4. Shrink the tubing, cap, boot, etc., following the installation procedure for the applicable heat-shrinkable part.

# To seal the junction or crotch of an application requiring two or more cables, conductors, etc. without a common jacket.

- Apply the overlapped 1 or 2 layers around each cable, conductor, etc., at the same distance from the connector, or ball up the sealant and press into crotch or junction of the joint.
- 2. Apply 2 overlapping wraps over the bundle.
- 3. Slide the expanded heat-shrinkable part over the joint and shrink.

Cat. No.	Description	Width (in.)	Thickness (in.)	Length (ft)	Std Pkg. Qty
HSTS25	Tape Sealant	1	0.06	25	1

Standard package is reels. Order by reel; not by feet.

#### Specifications .....

Physical	Electric	Chemical
Description: Butyl Rubber Polymer	Dielectric Strength: 250 v/mil minimum	Chemical Resistance:
Application Temperature: 4°C to 38°C (40°F to 100°F)	Volume Resistivity: 1014 ohms/cm	Resists acids, bases and alcohols. Passes Fed. Spec. SS-S-00210, section 3.6
Service Temperature: -40°C to 82°C (-40°F to 180°F)		
Environmental Resistance: Resists ozone and all normal aging processes		

# Quick and dependable way to insulate and waterproof motor lead connections up to 5kv.

# Medium-Voltage Motor Stub Splice Insulator

- · Installs in seconds
- Flame retardant
- · Flexible boot and impact-resistant cap
- · Long lasting and reusable
- · Waterproof and abrasion resistant
- One size fits all hookups reduces inventory
- · Enables easy inspection of connection



This first-generation multi-splice insulator is designed to give you a quick, dependable means of protecting medium-voltage motor stub splice connections up to 5kV. You can install it in seconds simply by pushing the cover and boot together. Once installed, it completely waterproofs the connection and provides excellent protection against abrasion or mechanical abuse.

## One size reduces inventory

The insulator accommodates wire sizes #8–2/0 AWG having outer diameters of .375" to .840". This range-taking feature should accommodate all of your medium-voltage motor hookups.

#### Inspectable and reusable

The insulator consists of just two parts: an elastomer boot and thermoplastic cap. The boot has two tapered cable entry legs that fit snugly around the cable to form a watertight seal. The legs are designed to be trimmed during installation to fit the required cable size tightly. The cap simply pushes into a groove in the boot — and pulls out easily when you want to inspect the connection. Removal of the cap does not disturb the seal around the cables, nor does it interrupt the bolted splice connection.

#### **Quality engineered**

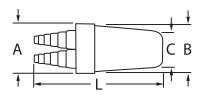
The boot is made of flexible, abrasion-resistant elastomer, and the cap is made of high impact-resistant thermoplastic — high-performance materials you can depend on. Use the insulator for pigtail applications in motor junction boxes, manholes or wherever a waterproof, impact-resistant insulator is required.



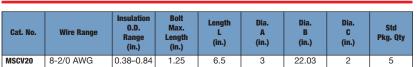
## Specifications -----

- 5KV Wire Range: #8 AWG-2/0
- Rating: 90° C Applications
- UL Listed to: 600V
- CSA Certified to: 600V
- T&B Recommended to: 5000V-90° C
- Material:

Cap — NORYL, U.L.94V-1 Boot — EPDM Elastomer, U.L.94V-2 Lubricant — Silicone Grease



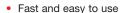
## Wide Range Splice



Order in multiples of std. pkg



# **Quick-Seal Multi-Splice Insulators**



- · Reusable insulator snaps closed and can be opened for inspection
- 600V at 90° 0

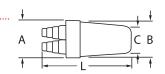
All-purpose quick-seal multi-splice can be used wherever a watertight insulator is needed in motor junction boxes, manholes, street lighting, bridges, machines, rooftop airconditioning, airport lighting, as well as in marine use. The insulator is a two-piece design, an abrasion-resistant elastomer cable entry boot and a high impact-resistant thermoplastic quick-seal cap. Installs in seconds, completely waterproof, long-lasting, reusable, inspectable, flame-retardant, impact-resistant, range-taking, inexpensive and totally dependable.



## Specifications .....

#### Material:

- Cap:NORYL,U.L.94V-1
- Boot: EPDM Elastomer, UL 94V-2
- · Lubricant Silicone Grease





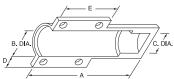


## **Quick-Seal Splice Insulators**

Cat. No.	Wire Range	Insulation O.D. Range (in.)	Length L (in.)	Dia. A (in.)	Dia. B (in.)	Dia. C (in.)	Bolt Size Max. Dia.	Bolt Size Max. Length	Conn. Size Max. Length	Conn. Size Max. Width	Std Pkg. Qty
MSLT 8	14–8	0.15-0.28	2.625	1.22	1.03	0.813	0.25	0.50	1.25	0.50	10
MSLT 1	6–1	0.20-0.52	3.625	1.81	1.53	1.25	0.38	0.75	1.75	0.70	5

Order multiple is std. pkg.





#### ···· Données techniques ·····

- UL File E9809.UL and CSA Certified (94V-1 Flammability Class)
- Rated for 600V and 90° C application Material
- Body: Modified Neoprene Elastomer Straps: Nylon

## **Motor Stub Splice Insulators**

- · Re-enterable motor stub insulator
- Easy installation
- No special tools required
- Permits inspection of connector joint by simply removing the snap on cap, wide cable range, long life

This innovative product has been designed to insulate motor stub splices quickly, easily, and dependably. It consists of a boot-type insulator with integral TY-RAP® cable ties. To install, simply position the insulator over the bolted splice and tighten the cable ties. That's all there is to it. It produces uniform, high-quality installations every time... in about 30 seconds. The completed installation is immediately ready for inspection and use. If required, the insulator can be easily removed. Simply snip the cable ties and slide the insulator off the splice. It leaves no sticky residue.

## **Motor Stub Splice Insulators**





Cat. No.	Wire Range	Length A (in.)	Bolt Max. (in.)	Dia. B (in.)	Dia. C (in.)	D (in.)	E (in.)	Std Pkg. Qty
MSC14*	#14-#10	1.5	0.38	0.56	0.50		0.35	15
MSC8	#12-#8	2.39	0.36	0.76	0.67	0.38	1.20	10
MSC2	#12-#2	3.25	0.75	0.95	0.88		1.5	10
MSC20	#2-2/0	4.25	1.0	1.39	1.05	0.43	1.70	4
MSC250	3/0-300 kcmil	7.56	1.5	1.88	1.80	0.45	1.90	2
MSC500	350-500 kcmil	8.88	1.75	2.56	2.48	0.45	2.10	5

\*One Ty-Rap cable tie only. Order in multiples of std. pkg.

# **Installation Tools**

**Separate fuel- and air-flow controls enable precise adjustment of flame and temperature up to 1,371° C (2,500° F)!** 

## **Portable Heat Shrink Torch**

- 1,371° C (2,500° F) output capacity satisfies virtually any heat-shrink, brazing or soldering requirement
- Dual fuel- and air-flow controls enable separate adjustment of temperature and flame precision
- Brass and steel construction provides durability

## Specifications -----

- Dimensions (without base): 3.9"L x 1.4"W x 5.4"H
- · Weight (when filled): 9.88 oz.
- Fuel Tank Capacity: 2.03 fl.oz.
- · Operating Time (per full fuel tank): Up to 220 minutes

Cat. No.	Cat. No. Description	
WT-PTORCH	Shrink-Kon™ Portable Heat-Shrink Torch	1

Order multiple is std. pkg.



# Electric Heat Gun

- UL/CSA approved
- 232° C to 649° C heat range (450° F to 1,200° F)
- 120V 60Hz AC





Cat. No.	Description	Std. Pkg Qty
WT1400	Dual Temp. heat gun. 600°F / 900°F, 1,300W, 120VAC 60Hz	1

Order multiple is std. pkg.



# **Installation Guidelines and Cross Reference**

## Installation

## No Special Installation Skills Required

- 1 Remove any oil, grease, water, dirt, etc., by wiping the cable ends and connector. Remove all sharp edges and burrs from connector.
- 2 Center tubing over splice connector.
- 3 Use the light blue outer portion of the flame when using the SIT-1 torch. Do not hold the torch still in one position or concentrate the hot inner flame of the torch on the tubing; this may cause scorching.
- Begin heating tubing in the center. Recover the central portion of the tubing first by heating around the circumference of the splice. (Keep heat source moving constantly around the circumference of the insulator to ensure uniform shrinkage of the insulator.)
- [5] Continue heating around the tubing and out toward one end. Move torch around the tubing until one end is completely recovered.
- 6 Repeat the above procedure on the opposite end of the splice, again working la source from the center outward and around the tubing.
- Installation is complete when the tubing conforms to splice and sealant flow is apparent at both ends.

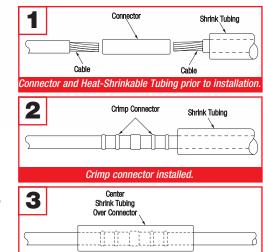
## **Typical Specifications**

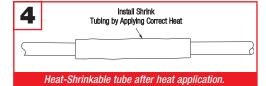
Insulating and sealing of all 600V, in-line cable splices from #16 AWG through 1000 kcmil shall be done in accordance with the instructions provided with the Shrink-Kon™ shrinkable insulators, catalogue series HS.

The connector insulator must be made of thermally stabilized, homogeneous polyolefin having internally applied sealant. It must have underwriter's Laboratories Listing (UL 486, 90°C, 600V) and be approved for the use. It must be usable without additional covering or adhesive both indoors and outdoors, in overhead, direct burial, or submersed applications at rated voltage. It must not be adversely affected by moisture, ozone, oils, fuels, mild acidsand alkalies, or ultraviolet light. It must be compatible with all commonly used cable jacket materials, including rubber, plastic, lead, steel, aluminum and copper.

## Factory-Applied Sealant

A standard sealant is coated on the entire inside surface of most precut sizes. Tubing is also available without sealant — consult factory. The sealant is rated for continuous 90° C operation on non-pressurized cable systems and aids in sealing out moisture and corrosion.





Heat-Shrinkable tube in position

## Cost and Reliability of Heat-Shrinkable Tubing Compared to Tape

The cost differential in the installation of T&B heatshrinkable tubing over taping can result in up to a 34% savings in labor and overhead. For example, on a 2/0 aluminum splice, heat-shrinkable tubing can be installed in 3 minutes, versus 10 minutes of taping. In addition to the direct cost reduction, there are the advantages of assured uniformity of wall thickness and moisture sealing.

## **Cross Reference**

T&B	Panduit	3M	Raychem	Sumitomo	Alpha	Coleflex	Insultab
CP0	HSTT & HSTTM	FP 301 (1 & 2)	RNF 100 (1 & 2)	A2 & B2	FIT 221	ST221 / STS221	HS 101
СРО-А	HSTTA & HSTTVA	EPS300	TAT 125 ATUM 3:1	W3B2	FIT321	ST303	HS101 MW 3:1
HSMW	-	-	MWTM (U) BSTS-M / SST-M				CTV
HS	-	-	WSCM / SST	-	FIT700	-	-
HS FR	HST	HDT	BSTS FR / SSTFR WCSF / FCSM	-	-	-	CTVH
HSC	HSEC	ICEC	S3C/ESC SSC-FR / ESC-FR	-	-	TYT	-
CPO-HF	-	-	-	NH	-	-	-
HSM-HF	-	-	XFFR	-	-	-	-
CHS	-	-	-	-	-	-	-

## **Breakaway Connector Kits**

#### Features / Benefits:

- Completely waterproof
- Individual fusing allows separation of kit without de-energizing complete circuit
- Break-away style fuse holder eliminates risk of electrical shock. Exposed current carrying components are all contained in harmless load side of the kit
- Readily identifiable problem area simplifies maintenance
- Easy to install, no need for tapes or compounds
- Insulated to 600 volt

#### Applications:

- Roadway lighting fixtures
- Flood and area lighting fixtures
- Power distribution systems

## Max. overall length, installed, 7 $^{3}/_{4}$ ". Diameter 1 $^{1}/_{8}$ "





Line side housing (Receptacle)

Crimp-on fuse holder





Load side housing (Plug)

Crimp-on fuse holder

## Style 65 Break-Away

Type: Single pole in-line

Electrical rating: For 600 volt, 10-30 amp.,  $^{13}\!/_{32}$  " x 1- $^{1}\!/_{2}$  " fuse

	Conductor Size	Conductor	Pac	kaging
Cat. No.	(AWG)	Material*	Unit	Standard
65 U	14 through 6	Copper	1	20

<sup>\*\*</sup>Fuse not included with kit. Do **NOT** use glass fuses.

#### Max. overall length, installed, 7 3/4". Diameter 2 5/16"





Line side housing (Receptacle)

Crimp-on fuse holder





Load side housing (Plug)

Crimp-on fuse holder

## Style D65 Break-Away

Type: Double pole in-line

Electrical rating: For 600 volt, 10-30 amp., 13/32" x 1-1/2" fuse

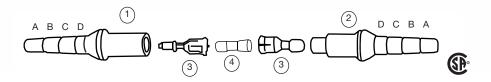
Cat. No.	Conductor Size	Conductor	Pac	kaging
	(AWG)	Material*	Unit	Standard
D65 U	14 through 6	Copper	1	20

<sup>\*\*</sup>Fuse not included with kit. Do **NOT** use glass fuses.

## Installation Instructions for 65 & D65 Fused Connector Kit

- Contents: 1- Line side (female) rubber housing
  - 2- Load side (male) housing
  - 3- Metal Fuse Sockets (4 in D65 Kits)
  - 4- Fuse (not provided)

- Assembly Dowel
- Lubricant
- Wiper



#### **Outside Diameter**

Cable OD (in.)					
А	0.120 - 0.205				
В	0.195 - 0.260				
С	0.250 - 0.330				
D	0.320 - 0.430				

Table 1

#### **Universal Contact**

Crimp	Conductor	Size in AWG	Recommended Crimp Tools & Dies		
Area	Stranded	Solid			
A	14	12, 14	T&B No. WT111M	"C" Cavity	
A	10, 12	8, 10	TAD NO. WITHIN	C Cavity	
В	6	6	T&B No. TBM41E/45S	"Blue" Cavity	
В	6	4	100 100. 10101410/400	Blue Cavity	

Table 2

- Step 1 Measure cable diameter and from Table 1, select corresponding section on molded sleeve. Cut off remaining sections of housing to size required. Example: If cable OD is 0.270 in., it falls withing the "C" range cut between "B" and "C".
- Step 2 Thoroughly clean approximately 8" of the Line side cable to be inserted using the wiper provided. Apply lubricant to cable and small hole in Line side (receptacle) housing.
- Step 3 Insert cable through the small hole in the housing, and push through sufficiently to allow for stripping of insulation.
- Step 4 Strip wires 3/4 in. for wire 14 AWG through 10 AWG, 3/8 in. for wire szes 8 AWG through 4 AWG. (DO NOT PENCIL INSULATION). Crimp on Line side socket. (Refer to Table 2 for suggested tool and die.)
- Step 5 Apply lubricant lightly to the outside of the metal fuse socket.
- Step 6 Place wooden dowel in the socket. Place the free end of the dowel against a firm surface and push the housing forward until it snaps into a locking position. Wipe off any excess lubricant.
- Step 7 Repeat the above steps with the Load housing.
- Step 8 Insert a 13/32 in. by 1-1/2 in. HRC fuse, 600 Volt 30 Amp. max. (Bussmann KTK series or equivalent), in the Load side housing. CAUTION: WHEN THE FUSE IS FULLY SEATED NOT MORE THAN 1/16 IN. OF THE FUSE BARREL WILL BE VISIBLE BETWEEN THE FUSE END CAP AND THE HOUSING. DO NOT APPLY LUBRICANT ON THE FUSE.
- Step 9 Plug the Load side and Line side housings together. CAUTION: WHEN PROPERLY MATED THE SEAM BETWEEN THE HOUSINGS SHOULD NOT EXCEED 1/32 IN.
- Step 10 The connection is now complete. For best results anchor the Line side wire, so that if the Load side wire is pulled (perhaps someone has knocked over a pole), the kit will come apart.

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HT1000C
HT100C-L
HT20C
HT40C
HT600C
HTC1000
HTC1000L
HTC2
HTC2S
HTC40
HTC40L2
HTC500
MSC14
MSC2
MSC20
MSC25023
MSC500
MSC8
MSCV20
MSLT 1
MSLT 8
TBFP9-2
TBFT201-36
TBFT201-6
TBFT421-36
WT140024
WT-PTORCH

