

# Heat Shrink

3M offers a broad range of US-made heat shrink tubing at competitive prices that allow you to address your heat shrink needs while still taking pride in buying American. 3M™ Heat Shrink Tubing is designed to insulate and protect in a wide variety of electrical and mechanical applications. Buying from 3M provides the quality assurance that comes with a 100+ year-old company synonymous with American innovation.



<b>Section</b>	<b>Page</b>
Single (Thin) Wall Tubing .....	366-384
Medium/Heavy Wall .....	385-393
3M™ Bus Bar Tubing BBI-A.....	394-397
Molded Shapes .....	398-401
Dual Wall (Adhesive-Lined).....	402-408

# Single (Thin) Wall Tubing

Lightweight, tough and flexible. 3M™ Single Wall Tubing is the right choice for electrical insulation in many industrial and manufactured products. It's also dependable as a lightweight wire harness, wire



marking, wire bundling, component packaging and fire-resistant cover.

## Standard Sizes and Dimensions

Ordering Size in.	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Recovered Wall Thickness (Nominal)	
	in.	(mm)	in.	(mm)	in.	(mm)
3/64	.046	(1,17)	.023	(0,58)	.016	(0,41)
1/16	.063	(1,60)	.031	(0,79)	.017	(0,43)
3/32	.093	(2,36)	.046	(1,17)	.020	(0,51)
1/8	.125	(3,18)	.062	(1,57)	.020	(0,51)
3/16	.187	(4,75)	.093	(2,36)	.020	(0,51)
1/4	.250	(6,35)	.125	(3,18)	.025	(0,64)
3/8	.375	(9,53)	.187	(4,75)	.025	(0,64)
1/2	.500	(12,70)	.250	(6,35)	.025	(0,64)
3/4	.750	(19,05)	.375	(9,53)	.030	(0,76)
1	1.000	(25,40)	.500	(12,70)	.035	(0,89)
1-1/2	1.500	(38,10)	.750	(19,05)	.040	(1,02)
2	2.000	(50,80)	1.000	(25,40)	.045	(1,14)
3	3.000	(76,20)	1.500	(38,10)	.050	(1,27)
4	4.000	(101,60)	2.000	(50,80)	.055	(1,40)

Note: Dimensions in inches are approximate.

## Section

## Page

Single (Thin) Wall Tubing .....	366-384
3M™ FP-301 Thin-Wall Tubing .....	367-382
3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/64 Inch) .....	367
3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/16 Inch) .....	368
3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/32 Inch) .....	369
3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/8 Inch) .....	370
3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/16 Inch) .....	371
3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/4 Inch) .....	372
3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/8 Inch) .....	373
3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/2 Inch) .....	374
3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/4 Inch) .....	375
3M™ Heat Shrink Thin-Wall Tubing FP-301 (1 Inch) .....	376
3M™ Heat Shrink Thin-Wall Tubing FP-301 (1-1/2 Inch) .....	377
3M™ Heat Shrink Thin-Wall Tubing FP-301 (2 Inch) .....	378
3M™ Heat Shrink Thin-Wall Tubing FP-301 (3 Inch) .....	379
3M™ Heat Shrink Thin-Wall Tubing FP-301 (4 Inch) .....	380
3M™ Heat Shrink Thin-Wall Tubing FP-301 Assorted Sizes Kits .....	381
3M™ Heat Shrink Thin-Wall Tubing FP-301 Assorted Color Packs .....	382
3M™ Heat Shrink Thin-Wall Tubing MFP (Modified Polyvinylidene Fluoride) .....	383
3M™ Heat Shrink Thin-Wall Tubing MFP .....	383
3M™ Very Flexible Polyolefin Tubing VFP-876 .....	384

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing

**3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/64 Inch)**

3M™ Heat Shrink Tubing FP-301 offers an outstanding balance of electrical, physical and chemical properties for a wide variety of industrial and military applications. Rated for 135°C continuous operation, all FP-301 tubing is split resistant, mechanically tough, easily marked and resists cold flow.



FP-301 tubing is rated for continuous operation at -55°C (-67°F) to 135°C (275°F), and is designed to withstand elevated temperatures to 300°C (572°F) for short periods. Minimum shrink temperature for all FP-301 tubing is 100°C (212°F).

**Ordering Size:** 3/64" (1,17 mm)

**Expanded I.D. (Min.):** 0.046" (1,17 mm)

**Recovered I.D. (Max.):** 0.023" (0,58 mm)

**Recovered Wall Thickness (Nominal):** 0.016" (0,41 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67°F to 275°F (-55°C to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-3/64-6"-Black-10-10 Pc Pks	051128-60126	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-3/64-48"-Black-25 Pcs	051128-59960	Black	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/64-48"-Black-250 Pcs	051128-59806	Black	48" (1,22 m) sticks	Yes	250 pcs
FP301-3/64-48"-Blue-25 Pcs	051128-59964	Blue	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/64-48"-Clear-25 Pcs	051128-59961	Clear	48" (1,22 m) sticks	No	25 pcs
FP301-3/64-48"-Red-25 Pcs	051128-59963	Red	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/64-48"-White-25 Pcs	051128-59962	White	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/64-100'-Black-Spool	051138-36027	Black	100' (30,48 m) Reel	Yes	3 Reels
FP301-3/64-100'-Clear-Spool	051138-36028	Clear	100' (30,48 m) Reel	No	3 Reels
FP301-3/64-1000'-Black-Spool	054007-08458	Black	1000' (304,8 m) Reel	Yes	3 Reels
FP301-3/64-1000'-Clear-Spool	054007-08523	Clear	1000' (304,8 m) Reel	No	3 Reels

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



### 3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/16 Inch)

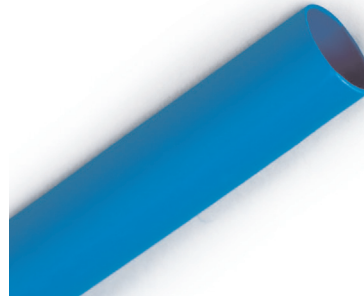
**Ordering Size:** 1/16" (1,59 mm)

**Expanded I.D. (Min.):** 0.063" (1,60 mm)

**Recovered I.D. (Max.):** 0.031" (0,79 mm)

**Recovered Wall Thickness (Nominal):** 0.017" (0,43 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-1/16-6"-Black-200 Pcs	051128-59887	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-1/16-6"-Black-10-10 Pc Pks	051128-60110	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-1/16-6"-Clear-10-10 Pc Pks	051128-60111	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-1/16-48"-Black-250 Pcs	051128-59808	Black	48" (1,22 m) sticks	Yes	250 pcs
FP301-1/16-48"-Clear-25 Pcs	051128-59966	Clear	48" (1,22 m) sticks	No	25 pcs
FP301-1/16-48"-Clear-250 Pcs	051128-59813	Clear	48" (1,22 m) sticks	No	250 pcs
FP301-1/16-48"-Blue-25 Pcs	051128-59970	Blue	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/16-48"-Green-25 Pcs	051128-59971	Green	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/16-48"-Red-25 Pcs	051128-59968	Red	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/16-48"-White-25 Pcs	051128-59967	White	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/16-48"-Yellow-25 Pcs	051128-59969	Yellow	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/16-48"-Black-Hdr-25 Pcs	051128-59626	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/16-48"-Blue-Hdr-25 Pcs	051128-59631	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/16-48"-Clear-Hdr-25 Pcs	051128-59627	Clear	48" (1,22 m) sticks w/ Hdr Label	No	25 pcs
FP301-1/16-48"-Green-Hdr-25 Pcs	051128-59632	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/16-48"-Red-Hdr-25 Pcs	051128-59629	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/16-48"-White-Hdr-25 Pcs	051128-59628	White	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/16-48"-Yellow-Hdr-25 Pcs	051128-59630	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/16-25'-Black-Reel	054007-40058	Black	25' (7,62 m) reel	Yes	1 reel
FP301-1/16-100'-Black-Spool	051135-35550	Black	100' (30,48 m) spool	Yes	3 spools
FP301-1/16-100'-Clear-Spool	051135-35555	Clear	100' (30,48 m) spool	No	3 spools
FP301-1/16-1000'-Black-Spool	054007-08461	Black	1000' (304,80 m) spool	Yes	3 spools
FP301-1/16-1000'-Clear-Spool	054007-08524	Clear	1000' (304,80 m) spool	No	3 spools
FP301-1/16-Blue-100'	051135-35553	Blue	100' (304,80 m) spool	Yes	3 spools
FP301-1/16-Green-100'	051135-37591	Green	100' (304,80 m) spool	Yes	3 spools
FP301-1/16-White-100'	051135-35551	White	100' (304,80 m) spool	Yes	3 spools
FP301-1/16-Yellow-100'	051135-35554	Yellow	100' (304,80 m) spool	Yes	3 spools

Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/32 Inch)

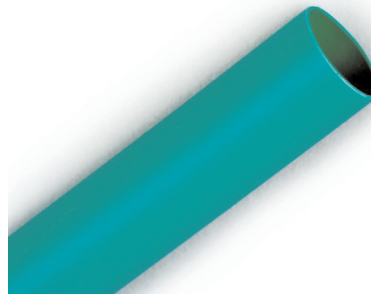
**Ordering Size:** 3/32"

**Expanded I.D. (Min.):** 0.093" (2,36 mm)

**Recovered I.D. (Max.):** 0.046" (1,17 mm)

**Recovered Wall Thickness (Nominal):** 0.020" (0,51 mm)

<b>Material</b>	Polyolefin
<b>Expanded/Recovered I.D.</b>	0.093"/0.046" (2,36/1,17 mm)
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-3/32-6"-Black-10-10 Pc Pks	051128-60122	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-3/32-6"-Black-200 Pcs	051128-59888	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-3/32-6"-Clear-10-10 Pc Pks	051128-60123	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-3/32-48"-Black-25 Pcs	051128-59972	Black	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/32-48"-Black-250 Pcs	051128-59810	Black	48" (1,22 m) sticks	Yes	250 pcs
FP301-3/32-48"-Clear-25 Pcs	051128-59973	Clear	48" (1,22 m) sticks	No	25 pcs
FP301-3/32-48"-Clear-250 Pcs	051128-59814	Clear	48" (1,22 m) sticks	No	250 pcs
FP301-3/32-48"-Blue-25 Pcs	051128-59977	Blue	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/32-48"-Green-25 Pcs	051128-59978	Green	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/32-48"-Red-25 Pcs	051128-59975	Red	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/32-48"-White-25 Pcs	051128-59974	White	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/32-48"-Yellow-25 Pcs	051128-59976	Yellow	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/32-48"-Black-Hdr-25 Pcs	051128-59633	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/32-48"-Blue-Hdr-25 Pcs	051128-59638	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/32-48"-Clear-Hdr-25 Pcs	051128-59634	Clear	48" (1,22 m) sticks w/ Hdr Label	No	25 pcs
FP301-3/32-48"-Green-Hdr-25 Pcs	051128-59639	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/32-48"-Red-Hdr-25 Pcs	051128-59636	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/32-48"-White-Hdr-25 Pcs	051128-59635	White	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/32-48"-Yellow-Hdr-25 Pcs	051128-59637	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/32-25'-Black-Reel	054007-40059	Black	25' (7,62 m) reel	Yes	1 reel
FP301-3/32-100'-Black-Spool	051135-35556	Black	100' (30,48 m) spool	Yes	3 spools
FP301-3/32-Blue-100'	051135-35559	Blue	100' (30,48 m) spool	Yes	3 spools
FP301-3/32-100'-Clear-Spool	051135-35548	Clear	100' (30,48 m) spool	No	3 spools
FP301-3/32-Green-100'	051135-37592	Green	100' (30,48 m) spool	Yes	3 spools
FP301-3/32-Red-100'	051135-35558	Red	100' (30,48 m) spool	Yes	3 spools
FP301-3/32-White-100'	051135-35557	White	100' (30,48 m) spool	Yes	3 spools
FP301-3/32-Yellow-100'	051135-35560	Yellow	100' (30,48 m) spool	Yes	3 spools
FP301-3/32-500'-Black-Spool	054007-08466	Black	500' (152,40 m) spool	Yes	3 spools
FP301-3/32-500'-Clear-Spool	054007-08525	Clear	500' (152,40 m) spool	No	3 spools

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



### 3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/8 Inch)

**Ordering Size:** 1/8" (3,18 mm)

**Expanded I.D. (Min.):** 0.125" (3,18 mm)

**Recovered I.D. (Max.):** 0.062" (1,57 mm)

**Recovered Wall Thickness (Nominal):** 0.020" (0,51 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-1/8-6"-Black-10-10 Pc Pks	051128-60116	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-1/8-6"-Black-200 Pcs	051128-59889	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-1/8-6"-Clear-10-10 Pc Pks	051128-60117	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-1/8-48"-Black-25 Pcs	051128-59979	Black	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/8-48"-Black-250 Pcs	051128-59828	Black	48" (1,22 m) sticks	Yes	250 pcs
FP301-1/8-48"-Blue-25 Pcs	051128-59984	Blue	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/8-48"-Clear-25 Pcs	051128-59980	Clear	48" (1,22 m) sticks	No	25 pcs
FP301-1/8-48"-Clear-250 Pcs	051128-59850	Clear	48" (1,22 m) sticks	No	250 Pcs
FP301-1/8-48"-Green-25 Pcs	051128-59985	Green	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/8-48"-Red-25 Pcs	051128-59982	Red	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/8-48"-White-25 Pcs	051128-59981	White	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/8-48"-Yellow-25 Pcs	051128-59983	Yellow	48" (1,22 m) sticks	Yes	25 pcs
FP301-1/8-48"-Black-Hdr-25 Pcs	051128-59640	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/8-48"-Blue-Hdr-25 Pcs	051128-59645	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/8-48"-Clear-Hdr-25 Pcs	051128-59641	Clear	48" (1,22 m) sticks w/ Hdr Label	No	25 pcs
FP301-1/8-48"-Green-Hdr-25 Pcs	051128-59646	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/8-48"-Red-Hdr-25 Pcs	051128-59643	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/8-48"-White-Hdr-25 Pcs	051128-59642	White	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/8-48"-Yellow-Hdr-25 Pcs	051128-59644	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-1/8-25'-Black-Reel	054007-40060	Black	25' (7,62 m) reel	Yes	1 reel
FP301-1/8-100'-Black-Spool	051135-35562	Black	100' (30,48 m) spool	Yes	3 spools
FP301-1/8-Blue-100'	051135-35565	Blue	100' (30,48 m) spool	Yes	3 spools
FP301-1/8-100'-Clear-Spool	051135-35567	Clear	100' (30,48 m) spool	No	3 spools
FP301-1/8-Green-100'	051135-37593	Green	100' (30,48 m) spool	Yes	3 spools
FP301-1/8-Red-100'	051135-35564	Red	100' (30,48 m) spool	Yes	3 spools
FP301-1/8-White-100'	051135-35563	White	100' (30,48 m) spool	Yes	3 spools
FP301-1/8-Yellow-100'	051135-35566	Yellow	100' (30,48 m) spool	Yes	3 spools
FP301-1/8-500'-Black-Spool	054007-08472	Black	500' (152,40 m) spool	Yes	3 spools
FP301-1/8-500'-Clear-Spool	054007-08526	Clear	500' (152,40 m) spool	No	3 spools

Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/16 Inch)

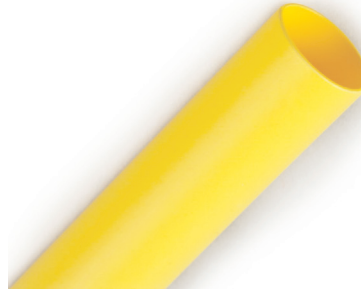
**Ordering Size:** 3/16" (4,75 mm)

**Expanded I.D. (Min.):** 0.187" (4,75 mm)

**Recovered I.D. (Max.):** 0.093" (2,36 mm)

**Recovered Wall Thickness (Nominal):** 0.020" (0,51 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-3/16-6"-Black-10-10 Pc Pks	051128-60120	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-3/16-6"-Black-200 Pcs	051128-59890	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-3/16-6"-Clear-10-10 Pc Pks	051128-60121	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-3/16-48"-Black-25 Pcs	051128-59570	Black	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/16-48"-Black-250 Pcs	051128-59832	Black	48" (1,22 m) sticks	Yes	250 pcs
FP301-3/16-48"-Clear-25 Pcs	051128-59571	Clear	48" (1,22 m) sticks	No	25 pcs
FP301-3/16-48"-Clear-250 Pcs	051128-59851	Clear	48" (1,22 m) sticks	No	250 pcs
FP301-3/16-48"-Blue-25 Pcs	051128-59575	Blue	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/16-48"-Green-25 Pcs	051128-59576	Green	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/16-48"-Red-25 Pcs	051128-59573	Red	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/16-48"-White-25 Pcs	051128-59572	White	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/16-48"-Yellow-25 Pcs	051128-59574	Yellow	48" (1,22 m) sticks	Yes	25 pcs
FP301-3/16-48"-Black-Hdr-25 Pcs	051128-59647	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/16-48"-Blue-Hdr-25 Pcs	051128-59652	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/16-48"-Clear-Hdr-25 Pcs	051128-59648	Clear	48" (1,22 m) sticks w/ Hdr Label	No	25 pcs
FP301-3/16-48"-Green-Hdr-25 Pcs	051128-59653	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/16-48"-Red-Hdr-25 Pcs	051128-59650	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/16-48"-White-Hdr-25 Pcs	051128-59649	White	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/16-48"-Yellow-Hdr-25 Pcs	051128-59651	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	25 pcs
FP301-3/16-25'-Black-Reel	054007-40061	Black	25' (7,62 m) reel	Yes	1 reel
FP301-3/16-100'-Black-Spool	051135-35568	Black	100' (30,48 m) spool	Yes	3 spools
FP301-3/16-Blue-100'	051135-35571	Blue	100' (30,48 m) spool	Yes	3 spools
FP301-3/16-100'-Clear-Spool	051135-35573	Clear	100' (30,48 m) spool	No	3 spools
FP301-3/16-Green-100'	051135-37594	Green	100' (30,48 m) spool	Yes	3 spools
FP301-3/16-Red-100'	051135-35570	Red	100' (30,48 m) spool	Yes	3 spools
FP301-3/16-White-100'	051135-35569	White	100' (30,48 m) spool	Yes	3 spools
FP301-3/16-Yellow-100'	051135-35572	Yellow	100' (30,48 m) spool	Yes	3 spools
FP301-3/16-250'-Black-Spool	054007-08478	Black	250' (76,20 m) spool	Yes	3 spools
FP301-3/16-250'-Clear-Spool	054007-08527	Clear	250' (76,20 m) spool	No	3 spools

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



### 3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/4 Inch)

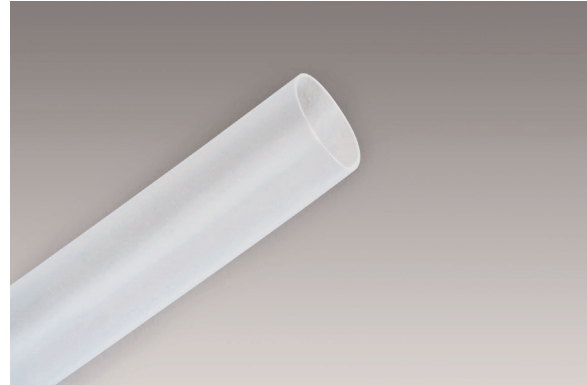
**Ordering Size:** 1/4" (6,35 mm)

**Expanded I.D. (Min.):** 0.250" (6,35 mm)

**Recovered I.D. (Max.):** 0.125" (3,18 mm)

**Recovered Wall Thickness (Nominal):** 0.025" (0,64 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-1/4-6"-Black-200 Pcs	051128-59891	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-1/4-6"-Black-10-10 Pc Pks	051128-60114	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-1/4-6"-Clear-10-10 Pc Pks	051128-60115	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-1/4-48"-Black-12 Pcs	051128-59577	Black	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/4-48"-Black-200 Pcs	051128-59835	Black	48" (1,22 m) sticks	Yes	200 pcs
FP301-1/4-48"-Blue-12 Pcs	051128-59582	Blue	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/4-48"-Clear-12 Pcs	051128-59578	Clear	48" (1,22 m) sticks	No	12 pcs
FP301-1/4-48"-Clear-200 Pcs	051128-59852	Clear	48" (1,22 m) sticks	No	200 pcs
FP301-1/4-48"-Green-12 Pcs	051128-59583	Green	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/4-48"-Red-12 Pcs	051128-59580	Red	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/4-48"-White-12 Pcs	051128-59579	White	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/4-48"-Yellow-12 Pcs	051128-59581	Yellow	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/4-48"-Black-Hdr-12 Pcs	051128-59654	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/4-48"-Blue-Hdr-12 Pcs	051128-59659	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/4-48"-Clear-Hdr-12 Pcs	051128-59655	Clear	48" (1,22 m) sticks w/ Hdr Label	No	12 pcs
FP301-1/4-48"-Green-Hdr-12 Pcs	051128-59660	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/4-48"-Red-Hdr-12 Pcs	051128-59657	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/4-48"-White-Hdr-12 Pcs	051128-59656	White	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/4-48"-Yellow-Hdr-12 Pcs	051128-59658	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/4-25'-Black-Reel	054007-40062	Black	25' (7,62 m) reel	Yes	1 reel
FP301-1/4-100'-Black-Spool	051135-35574	Black	100' (30,48 m) spool	Yes	3 spools
FP301-1/4-Blue-100'	051135-35577	Blue	100' (30,48 m) spool	Yes	3 spools
FP301-1/4-100'-Clear-Spool	051135-35579	Clear	100' (30,48 m) spool	No	3 Spools
FP301-1/4-Green-100'	051135-37346	Green	100' (30,48 m) spool	Yes	3 spools
FP301-1/4-Red-100'	051135-35576	Red	100' (30,48 m) spool	Yes	3 spools
FP301-1/4-White-100'	051135-35575	White	100' (30,48 m) spool	Yes	3 spools
FP301-1/4-Yellow-100'	051135-35578	Yellow	100' (30,48 m) spool	Yes	3 spools
FP301-1/4-200'-Black-Spool	054007-08485	Black	200' (60,96 m) spool	Yes	3 spools
FP301-1/4-200'-Clear-Spool	054007-08528	Clear	200' (60,96 m) spool	No	3 spools



Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/8 Inch)

**Ordering Size:** 3/8" (9,52 mm)

**Expanded I.D. (Min.):** 0.375" (9,53 mm)

**Recovered I.D. (Max.):** 0.187" (4,75 mm)

**Recovered Wall Thickness (Nominal):** 0.025" (0,64 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-3/8-6"-Black-200 Pcs	051128-59892	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-3/8-6"-Black-10-10 Pc Pks	051128-60127	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-3/8-6"-Clear-10-10 Pc Pks	051128-60128	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-3/8-48"-Black-12 Pcs	051128-59584	Black	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/8-48"-Black-125 Pcs	051128-59837	Black	48" (1,22 m) sticks	Yes	125 pcs
FP301-3/8-48"-Blue-12 Pcs	051128-59589	Blue	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/8-48"-Clear-12 Pcs	051128-59585	Clear	48" (1,22 m) sticks	No	12 pcs
FP301-3/8-48"-Clear-125 Pcs	051128-59853	Clear	48" (1,22 m) sticks	No	125 pcs
FP301-3/8-48"-Green-12 Pcs	051128-59590	Green	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/8-48"-Red-12 Pcs	051128-59587	Red	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/8-48"-White-12 Pcs	051128-59586	White	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/8-48"-Yellow-12 Pcs	051128-59588	Yellow	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/8-48"-Black-Hdr-12 Pcs	051128-59661	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/8-48"-Blue-Hdr-12 Pcs	051128-59666	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/8-48"-Clear-Hdr-12 Pcs	051128-59662	Clear	48" (1,22 m) sticks w/ Hdr Label	No	12 pcs
FP301-3/8-48"-Green-Hdr-12 Pcs	051128-59667	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/8-48"-Red-Hdr-12 Pcs	051128-59664	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/8-48"-White-Hdr-12 Pcs	051128-59663	White	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/8-48"-Yellow-Hdr-12 Pcs	051128-59665	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/8-25'-Black-Reel	054007-40063	Black	25' (7,62 m) reel	Yes	1 reel
FP301-3/8-100'-Black-Spool	051135-35580	Black	100' (30,48 m) spool	Yes	3 spools
FP301-3/8-Blue-100'	051135-35583	Blue	100' (30,48 m) spool	Yes	3 spools
FP301-3/8-100'-Clear-Spool	051135-35585	Clear	100' (30,48 m) spool	No	3 spools
FP301-3/8-Green-100'	051135-37643	Green	100' (30,48 m) spool	Yes	3 spools
FP301-3/8-Red-100'	051135-35582	Red	100' (30,48 m) spool	Yes	3 spools
FP301-3/8-White-100'	051135-35581	White	100' (30,48 m) spool	Yes	3 spools
FP301-3/8-Yellow-100'	051135-35584	Yellow	100' (30,48 m) spool	Yes	3 spools
FP301-3/8-200'-Black-Spool	054007-08491	Black	200' (60,96 m) spool	Yes	3 spools
FP301-3/8-200'-Clear-Spool	054007-08529	Clear	200' (60,96 m) spool	No	3 spools

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



### 3M™ Heat Shrink Thin-Wall Tubing FP-301 (1/2 Inch)

**Ordering Size:** 1/2" (12,7 mm)

**Expanded I.D. (Min.):** 0.500" (12,70 mm)

**Recovered I.D. (Max.):** 0.250" (6,35 mm)

**Recovered Wall Thickness (Nominal):** 0.025" (0,64 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-1/2-6"-Black-10-10 Pc Pks	051128-60112	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-1/2-6"-Clear-10-10 Pc Pks	051128-60113	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-1/2-6"-Black-200 Pcs	051128-59893	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-1/2-48"-Black-12 Pcs	051128-59591	Black	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/2-48"-Black-100 Pcs	051128-59859	Black	48" (1,22 m) sticks	Yes	100 pcs
FP301-1/2-48"-Blue-12 Pcs	051128-59596	Blue	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/2-48"-Clear-12 Pcs	051128-59592	Clear	48" (1,22 m) sticks	No	12 pcs
FP301-1/2-48"-Clear-100 Pcs	051128-59854	Clear	48" (1,22 m) sticks	No	100 pcs
FP301-1/2-48"-Green-12 Pcs	051128-59597	Green	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/2-48"-Red-12 Pcs	051128-59594	Red	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/2-48"-White-12 Pcs	051128-59593	White	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/2-48"-Yellow-12 Pcs	051128-59595	Yellow	48" (1,22 m) sticks	Yes	12 pcs
FP301-1/2-48"-Blue-Hdr-12 Pcs	051128-59673	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/2-48"-Clear-Hdr-12 Pcs	051128-59669	Clear	48" (1,22 m) sticks w/ Hdr Label	No	12 pcs
FP301-1/2-48"-Green-Hdr-12 Pcs	051128-59674	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/2-48"-Red-Hdr-12 Pcs	051128-59671	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/2-48"-White-Hdr-12 Pcs	051128-59670	White	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/2-48"-Yellow-Hdr-12 Pcs	051128-59672	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-1/2-25'-Black-Reel	054007-40064	Black	25' (7,62 m) reel	Yes	1 reel
FP301-1/2-100'-Black-Spool	051135-35586	Black	100' (30,48 m) spool	Yes	3 spools
FP301-1/2-Blue-100'	051135-35589	Blue	100' (30,48 m) spool	Yes	3 spools
FP301-1/2-100'-Clear-Spool	051135-35591	Clear	100' (30,48 m) spool	No	3 spools
FP301-1/2-Green-100'	051135-37347	Green	100' (30,48 m) spool	Yes	3 spools
FP301-1/2-Red-100'	051135-35588	Red	100' (30,48 m) spool	Yes	3 spools
FP301-1/2-White-100'	051135-35587	White	100' (30,48 m) spool	Yes	3 spools
FP301-1/2-Yellow-100'	051135-35590	Yellow	100' (30,48 m) spool	Yes	3 spools
FP301-1/2-200'-Black-Spool	054007-08496	Black	200' (60,96 m) spool	Yes	3 spools
FP301-1/2-200'-Clear-Spool	054007-08530	Clear	200' (60,96 m) spool	No	3 spools

Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (3/4 Inch)

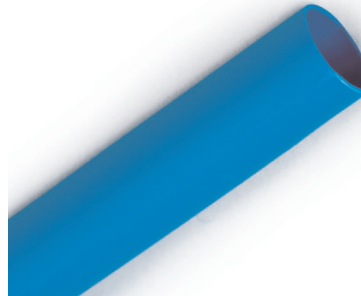
**Ordering Size:** 3/4" (19,0 mm)

**Expanded I.D. (Min.):** 0.750" (19,05 mm)

**Recovered I.D. (Max.):** 0.375" (9,53 mm)

**Recovered Wall Thickness (Nominal):** 0.030" (0,76 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-3/4-6"-Clear-10-10 Pc Pks	051128-60125	Clear	6" (152,4 mm) pieces	No	10/pk, 10 pks
FP301-3/4-6"-Black-10-10 Pc Pks	051128-60124	Black	6" (152,4 mm) pieces	Yes	10/pk, 10 pks
FP301-3/4-6"-Black-200 Pcs	051128-59894	Black	6" (152,4 mm) pieces	Yes	200 pcs
FP301-3/4-48"-Black-12 Pcs	051128-59598	Black	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/4-48"-Black-50 Pcs	051128-59864	Black	48" (1,22 m) sticks	Yes	50 pcs
FP301-3/4-48"-Clear-12 Pcs	051128-59599	Clear	48" (1,22 m) sticks	No	12 pcs
FP301-3/4-48"-Clear-50 Pcs	051128-59855	Clear	48" (1,22 m) sticks	No	50 pcs
FP301-3/4-48"-Blue-12 Pcs	051128-59603	Blue	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/4-48"-Green-12 Pcs	051128-59783	Green	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/4-48"-Red-12 Pcs	051128-59601	Red	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/4-48"-White-12 Pcs	051128-59600	White	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/4-48"-Yellow-12 Pcs	051128-59602	Yellow	48" (1,22 m) sticks	Yes	12 pcs
FP301-3/4-48"-Black-Hdr-12 Pcs	051128-59675	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/4-48"-Blue-Hdr-12 Pcs	051128-59680	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/4-48"-Clear-Hdr-12 Pcs	051128-59676	Clear	48" (1,22 m) sticks w/ Hdr Label	No	12 pcs
FP301-3/4-48"-Green-Hdr-12 Pcs	051128-59782	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/4-48"-Red-Hdr-12 Pcs	051128-59678	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/4-48"-White-Hdr-12 Pcs	051128-59677	White	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/4-48"-Yellow-Hdr-12 Pcs	051128-59679	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	12 pcs
FP301-3/4-25'-Black-Reel	054007-40065	Black	25' (7,62 m) reel	Yes	1 reel
FP301-3/4-50'-Black-Spool	051135-35592	Black	50' (15,24 m) spool	Yes	3 spools
FP301-3/4-Blue-50'	051135-35595	Blue	50' (15,24 m) spool	Yes	3 spools
FP301-3/4-50'-Clear-Spool	051135-35597	Clear	50' (15,24 m) spool	No	3 spools
FP301-3/4-Green-50'	051135-37348	Green	50' (15,24 m) spool	Yes	3 spools
FP301-3/4-Red-50'	051135-35594	Red	50' (15,24 m) spool	Yes	3 spools
FP301-3/4-White-50'	051135-35593	White	50' (15,24 m) spool	Yes	3 spools
FP301-3/4-Yellow-50'	051135-35596	Yellow	50' (15,24 m) spool	Yes	3 spools
FP301-3/4-200'-Black-Spool	054007-08502	Black	200' (60,96 m) spool	Yes	3 spools
FP301-3/4-200'-Clear-Spool	054007-08531	Clear	200' (60,96 m) spool	No	3 spools

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



### 3M™ Heat Shrink Thin-Wall Tubing FP-301 (1 Inch)

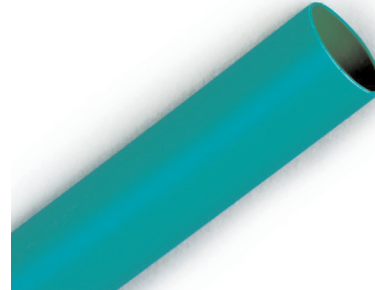
**Ordering Size:** 1" (25,4 mm)

**Expanded I.D. (Min.):** 1.00" (25,40 mm)

**Recovered I.D. (Max.):** 0.500" (12,70 mm)

**Recovered Wall Thickness (Nominal):** 0.035" (0,89 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-1-6"-Clear-10-10 Pc Pks	051128-60119	Clear	6" (152,4 mm) pieces	No	10 pcs/pk, 10 pks
FP301-1-6"-Black-10-10 Pc Pks	051128-60118	Black	6" (152,4 mm) pieces	Yes	10 pcs/pk, 10 pks
FP301-1-48"-Black-5 Pcs	051128-59604	Black	48" (1,22 m) sticks	Yes	5 pcs
FP301-1-48"-Black-24 Pcs	051128-59841	Black	48" (1,22 m) sticks	Yes	24 pcs
FP301-1-48"-Blue-5 Pcs	051128-59609	Blue	48" (1,22 m) sticks	Yes	5 pcs
FP301-1-48"-Clear-5 Pcs	051128-59605	Clear	48" (1,22 m) sticks	No	5 pcs
FP301-1-48"-Clear-24 Pcs	051128-59856	Clear	48" (1,22 m) sticks	No	24 pcs
FP301-1-48"-Green-5 Pcs	051128-59785	Green	48" (1,22 m) sticks	Yes	5 pcs
FP301-1-48"-Red-5 Pcs	051128-59607	Red	48" (1,22 m) sticks	Yes	5 pcs
FP301-1-48"-White-5 Pcs	051128-59606	White	48" (1,22 m) sticks	Yes	5 pcs
FP301-1-48"-Yellow-5 Pcs	051128-59608	Yellow	48" (1,22 m) sticks	Yes	5 pcs
FP301-1-48"-Black-Hdr-5 Pcs	051128-59681	Black	48" (1,22 m) sticks w/ Hdr Label	Yes	5 pcs
FP301-1-48"-Blue-Hdr-5 Pcs	051128-59686	Blue	48" (1,22 m) sticks w/ Hdr Label	Yes	5 pcs
FP301-1-48"-Clear-Hdr-5 Pcs	051128-59682	Clear	48" (1,22 m) sticks w/ Hdr Label	No	5 pcs
FP301-1-48"-Green-Hdr-5 Pcs	051128-59784	Green	48" (1,22 m) sticks w/ Hdr Label	Yes	5 pcs
FP301-1-48"-Red-Hdr-5 Pcs	051128-59684	Red	48" (1,22 m) sticks w/ Hdr Label	Yes	5 pcs
FP301-1-48"-White-Hdr-5 Pcs	051128-59683	White	48" (1,22 m) sticks w/ Hdr Label	Yes	5 pcs
FP301-1-48"-Yellow-Hdr-5 Pcs	051128-59685	Yellow	48" (1,22 m) sticks w/ Hdr Label	Yes	5 pcs
FP301-1-25'-Black-Reel	054007-40066	Black	25' (7,62 m) reel	Yes	1 reel
FP301-1-50'-Black-Spool	051135-35598	Black	50' (15,24 m) spool	Yes	3 spools
FP301-1-Blue-50'	051135-35601	Blue	50' (15,24 m) spool	Yes	3 spools
FP301-1-50'-Clear-Spool	051135-35603	Clear	50' (15,24 m) spool	No	3 spools
FP301-1-Green-50'	051135-37768	Green	50' (15,24 m) spool	Yes	3 spools
FP301-1-Red-50'	051135-35600	Red	50' (15,24 m) spool	Yes	3 spools
FP301-1-White-50'	051135-35599	White	50' (15,24 m) spool	Yes	3 spools
FP301-1-Yellow-50'	051135-35602	Yellow	50' (15,24 m) spool	Yes	3 spools
FP301-1-100'-Black-Spool	054007-08508	Black	100' (30,48 m) spool	Yes	3 spools
FP301-1-100'-Clear-Spool	054007-08532	Clear	100' (30,48 m) spool	No	3 spools

Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (1-1/2 Inch)

**Ordering Size:** 1-1/2" (38,1 mm)

**Expanded I.D. (Min.):** 1.500" (38,10 mm)

**Recovered I.D. (Max.):** 0.750" (19,05 mm)

**Recovered Wall Thickness (Nominal):** 0.040" (1,02 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-1 1/2-6"-Black-10-3 Pc Pks	051128-60132	Black	6" (152,4 mm) pieces	Yes	3/pk, 10 pks
FP301-1 1/2-6"-Clear-10-3 Pc Pks	051128-60133	Clear	6" (152,4 mm) pieces	No	3/pk, 10 pks
FP301-1 1/2-48"-Black-5 Pcs	051128-59610	Black	48" (1,22 m) sticks	Yes	5 pcs
FP301-1 1/2-48"-Black-24 Pcs	051128-59845	Black	48" (1,22 m) sticks	Yes	24 pcs
FP301-1 1/2-48"-Blue-5 Pcs	051128-59615	Blue	48" (1,22 m) sticks	Yes	5 pcs
FP301-1 1/2-48"-Clear-5 Pcs	051128-59611	Clear	48" (1,22 m) sticks	No	5 pcs
FP301-1 1/2-48"-Red-5 Pcs	051128-59613	Red	48" (1,22 m) sticks	Yes	5 pcs
FP301-1 1/2-48"-White-5 Pcs	051128-59612	White	48" (1,22 m) sticks	Yes	5 pcs
FP301-1 1/2-48"-Yellow-5 Pcs	051128-59614	Yellow	48" (1,22 m) sticks	Yes	5 pcs
FP301-1.5-50'-Black-Spool	051138-36026	Black	50' (15,24 m) spool	Yes	1 spool
FP301-1.5-50'-Clear-Spool	051138-36025	Clear	50' (15,24 m) spool	No	1 spool
FP301-1.5-100'-Black-Spool	054007-08514	Black	100' (30,48 m) spool	Yes	2 spools
FP301-1.5-100'-Clear-Spool	054007-08533	Clear	100' (30,48 m) spool	No	2 spools
FP301-1.5-100'-Blue-Spool	054007-38857	Blue	100' (30,48 m) Spool	Yes	2 spools
FP301-1.5-100'-Red-Spool	054007-38860	Red	100' (30,48 m) Spool	Yes	2 spools
FP301-1.5-100'-White-Spool	054007-08515	White	100' (30,48 m) Spool	Yes	2 spools
FP301-1.5-100'-Yellow-Spool	054007-08516	Yellow	100' (30,48 m) Spool	Yes	2 spools

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



### 3M™ Heat Shrink Thin-Wall Tubing FP-301 (2 Inch)

**Ordering Size:** 2" (50,8 mm)

**Expanded I.D. (Min.):** 2.00" (50,80 mm)

**Recovered I.D. (Max.):** 1.00" (25,40 mm)

**Recovered Wall Thickness (Nominal):** 0.045" (1,14 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-2-48"-Black-5 Pcs	051128-59616	Black	48" (1,22 m) sticks	Yes	5 pcs
FP301-2-48"-Black-24 Pcs	051128-59847	Black	48" (1,22 m) sticks	Yes	24 pcs
FP301-2-48"-Blue-5 Pcs	051128-59621	Blue	48" (1,22 m) sticks	Yes	5 pcs
FP301-2-48"-Clear-5 Pcs	051128-59617	Clear	48" (1,22 m) sticks	No	5 pcs
FP301-2-48"-Clear-24 Pcs	051128-59858	Clear	48" (1,22 m) sticks	No	24 pcs
FP301-2-48"-Red-5 Pcs	051128-59619	Red	48" (1,22 m) sticks	Yes	5 pcs
FP301-2-48"-White-5 Pcs	051128-59618	White	48" (1,22 m) sticks	Yes	5 pcs
FP301-2-48"-Yellow-5 Pcs	051128-59620	Yellow	48" (1,22 m) sticks	Yes	5 pcs
FP301-2-50'-Black-Spool	051138-36024	Black	50' (15,24 m) Spool	Yes	1 Spool
FP301-2-50'-Clear-Spool	051138-36023	Clear	50' (15,24 m) Spool	No	1 Spool
FP301-2-100'-Black-Spool	054007-08517	Black	100' (30,48 m) Spool	Yes	2 Spools
FP301-2-100'-Clear-Spool	054007-08534	Clear	100' (30,48 m) Spool	No	2 Spools

Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (3 Inch)

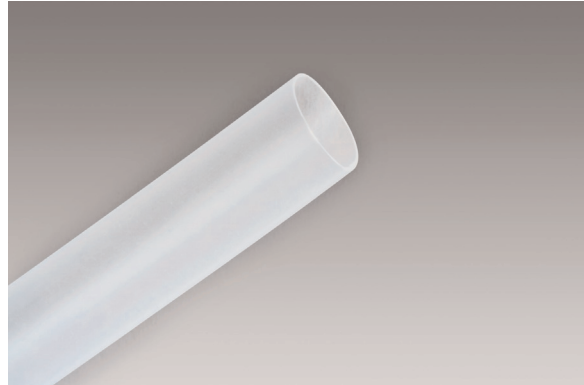
**Ordering Size:** 3" (76,2 mm)

**Expanded I.D. (Min.):** 3.00" (76,20 mm)

**Recovered I.D. (Max.):** 1.50" (38,10 mm)

**Recovered Wall Thickness (Nominal):** 0.050" (1,27 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-3-48"-Black-2 Pcs	051128-59622	Black	48" (1,22 m) sticks	Yes	2 pcs
FP301-3-48"-Black-12 Pcs	051128-59848	Black	48" (1,22 m) sticks	Yes	12 pcs
FP301-3-48"-Blue-12 Pcs	051128-59907	Blue	48" (1,22 m) sticks	Yes	12 pcs
FP301-3-48"-Clear-2 Pcs	051128-59623	Clear	48" (1,22 m) sticks	No	2 pcs
FP301-3-48"-Clear-12 Pcs	051128-59910	Clear	48" (1,22 m) sticks	No	12 pcs
FP301-3-48"-Red-12 Pcs	051128-59908	Red	48" (1,22 m) sticks	Yes	12 pcs
FP301-3-48"-White-12 Pcs	051128-59849	White	48" (1,22 m) sticks	Yes	12 pcs
FP301-3-48"-Yellow-12 Pcs	051128-59942	Yellow	48" (1,22 m) sticks	Yes	12 pcs
FP301-3-50'-Black-Spool	054007-08521	Black	50' (15,24 m) spool	Yes	1 spool
FP301-3-50'-Blue-Spool	054007-38880	Blue	50' (15,24 m) spool	Yes	1 spool
FP301-3-50'-Clear-Spool	054007-38982	Clear	50' (15,24 m) spool	No	1 spool
FP301-3-50'-Red-Spool	054007-38881	Red	50' (15,24 m) spool	Yes	1 spool
FP301-3-50'-White-Spool	054007-08522	White	50' (15,24 m) spool	Yes	1 spool
FP301-3-50'-Yellow-Spool	054007-38883	Yellow	50' (15,24 m) spool	Yes	1 spool

Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing



## 3M™ Heat Shrink Thin-Wall Tubing FP-301 (4 Inch)

**Ordering Size:** 4" (101,6 mm)

**Expanded I.D. (Min.):** 4.00" (101,60 mm)

**Recovered I.D. (Max.):** 2.00" (50,80 mm)

**Recovered Wall Thickness (Nominal):** 0.055" (1,40 mm)

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	





Order No.	UPC	Color	Format	Flame Retardant	Case Qty.
FP301-4-48"-Black-2 Pcs	051128-59624	Black	48" (1,22 m) sticks	Yes	2 pcs
FP301-4-48"-Black-12 Pcs	051128-59909	Black	48" (1,22 m) sticks	Yes	12 pcs
FP301-4-48"-Clear-2 Pcs	051128-59625	Clear	48" (1,22 m) sticks	No	2 pcs
FP301-4-50'-Black-Spool	054007-38884	Black	50' (15,24 m) spool	Yes	1 spool
FP301-4-50'-Clear-Spool	054007-38986	Clear	50' (15,24 m) spool	No	1 spool
FP301-4-Blue-50'	054007-58973	Blue	50' (15,24 m) spool	Yes	1 spool
FP301-4-Red-50'	054007-38893	Red	50' (15,24 m) spool	Yes	1 spool
FP301-4-Yellow-50'	054007-38895	Yellow	50' (15,24 m) spool	Yes	1 spool



Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing

## 3M™ Heat Shrink Thin-Wall Tubing FP-301 Assorted Sizes Kits

The 3M™ Heat Shrink Thin-Wall Tubing FP-301 Kits are a versatile assortment of flexible polyolefin heat shrink tubing. The kits are available in two different types: Assorted Colors or Black only. Each box is constructed of rugged translucent plastic with product and installation information on the cover. Heat shrink kits allow an engineer, designer or technician to have a complete selection of popular sizes and colors for small projects and product development programs.

<b>Material</b>	Flexible Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	





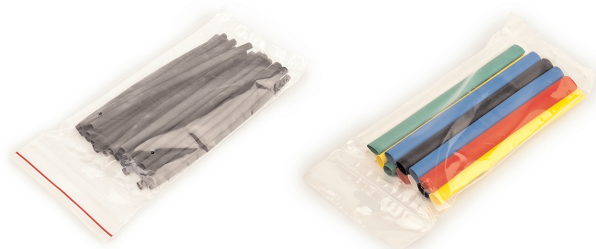
Order No.	UPC	Description	Color	Size	Format	Case Qty.
FP301-3/32 to 1/2-Assrted-5-133 Pc Kits	051135-37677	Each kit has 133 pieces and contains 7 colors: black, red, white, yellow, blue, green, and clear tubing in sizes of 3/32", 1/8", 3/16", 1/4", 3/8", and 1/2".	black, red, white, yellow, blue, green, and clear	3/32" (2,38 mm) 1/8" (3,18 mm) 3/16" (4,75 mm) 1/4" (6,35 mm) 3/8" (9,52 mm) 1/2" (12,7 mm)	6" (15,24 cm) pieces	133 pcs/kit, 5 kits
FP301-3/16 to 1-Black-5-102 Pc Kits	051135-38139	Each kit has 102 pieces and contains 6 sizes: 3/16", 1/4", 3/8", 1/2", 3/4", and 1".	Black	3/16" – 1" (4,75 – 25,4 mm)	6" (15,24 cm) pieces	102 pcs/pk, 5 pks

## Single (Thin) Wall Tubing: 3M™ FP-301 Thin-Wall Tubing

### 3M™ Heat Shrink Thin-Wall Tubing FP-301 Assorted Color Packs

The 3M™ Heat Shrink Thin-Wall Tubing FP-301 Kits are a versatile assortment of flexible polyolefin heat shrink tubing. The kits are available in two different types: Assorted Colors or Black only. Each box is constructed of rugged translucent plastic with product and installation information on the cover. Heat shrink kits allow an engineer, designer or technician to have a complete selection of popular sizes and colors for small projects and product development programs.

<b>Material</b>	Flexible Polyolefin
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	SAE-AMS-DTL-23053/5, Class 1, 2; AMS-3636, AMS-3637
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	




Order No.	UPC	Description	Color	Size	Format	Case Qty.
FP301-1/8-6"-Assorted-10-28 Pc Pks	051135-36619	Assorted 6" Pcs, 4 Each of 7 Color	Assorted	1/8" (3,18 mm)	6" (152,4 mm) pieces	28 pcs/pks, 10 pks
FP301-3/32-6"-Assorted-10-35 Pc Pks	051135-36618	Assorted 6" Pcs, 5 Each of 7 Color	Assorted	3/32" (2,38 mm)	6" (152,4 mm) pieces	35 pcs/pk, 10 pks
FP301-3/16-6"-Assorted-10-21 Pc Pks	051135-36620	Assorted 6" Pcs, 3 Each of 7 Color	Assorted	3/16" (4,75 mm)	6" (152,4 mm) pieces	21 pcs/pk, 10 pks
FP301-1/4-6"-Assorted-10-21 Pc Pks	051135-36621	Assorted 6" Pcs, 3 Each of 7 Color	Assorted	1/4" (6,35 mm)	6" (152,4 mm) pieces	21 pcs/pks, 10 pks
FP301-3/8-6"-Assorted-10-14 Pc Pks	051135-36622	Assorted 6" Pcs, 2 Each of 7 Color	Assorted	3/8" (9,52 mm)	6" (152,4 mm) pieces	14 pcs/pk, 10 pks

## Single (Thin) Wall Tubing: 3M™ Heat Shrink Thin-Wall Tubing MFP (Modified Polyvinylidene Fluoride)

### 3M™ Heat Shrink Thin-Wall Tubing MFP

3M™ Heat Shrink Thin-Wall Tubing MFP is a cross-linked, thin-walled, heat-shrinkable tubing offering a high degree of mechanical strength and high-temperature resistance. Fabricated from polyvinylidene fluoride, the tubing has outstanding abrasion resistance and cut-through properties in combination with high dielectric strength. It is inherently flame retardant, semi-rigid and highly resistant to most industrial fuels, chemicals and solvents. When heated in excess of 347°F (175°C), MFP tubing rapidly shrinks to a skintight fit. MFP tubing is rated for continuous operation from -67°F (-55°C) to 347°F (175°C). MFP tubing is recommended for shrink-fit protection and strain relief of wires, solder joints, terminals and connections.

<b>Material</b>	Polyvinylidene Fluoride
<b>Color</b>	Clear
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 347°F (-55 to 175°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Specification</b>	Meets performance claims of SAE-AMS-DTL-23053/18, Class 1; SAE-AMSDTL-23053/8
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Size	Format	Expanded/Recovered I.D.	Case Qty.
MFP-3/64-48"-Clear-25 Pcs	051128-59739	3/64" (1,19 mm)	48" (1.22 m) sticks	0.046"/0.023" (1,2/0,6 mm)	25
MFP-3/64-48"-Clear-250 Pcs	051128-59925	3/64" (1,19 mm)	48" (1.22 m) sticks	0.046"/0.023" (1,2/0,6 mm)	250
MFP-1/16-48"-Clear-25 Pcs	051128-59740	1/16" (1,59 mm)	48" (1.22 m) sticks	0.063"/0.031" (1,6/0,8 mm)	25
MFP-1/16-48"-Clear-250 Pcs	051128-59926	1/16" (1,59 mm)	48" (1.22 m) sticks	0.063"/0.031" (1,6/0,8 mm)	250
MFP-3/32-48"-Clear-25 Pcs	051128-59741	3/32" (2,38 mm)	48" (1.22 m) sticks	0.093"/0.046" (2,4/1,2 mm)	25
MFP-3/32-48"-Clear-250 Pcs	051128-59927	3/32" (2,38 mm)	48" (1.22 m) sticks	0.093"/0.046" (2,4/1,2 mm)	250
MFP-1/8-48"-Clear-25 Pcs	051128-59742	1/8" (3,18 mm)	48" (1.22 m) sticks	0.125"/0.062" (3,2/1,6 mm)	25
MFP-1/8-48"-Clear-250 Pcs	051128-59928	1/8" (3,18 mm)	48" (1.22 m) sticks	0.125"/0.062" (3,2/1,6 mm)	250
MFP-3/16-48"-Clear-12 Pcs	051128-59743	3/16" (4,75 mm)	48" (1.22 m) sticks	0.187"/0.093" (4,8/2,4 mm)	12
MFP-3/16-48"-Clear-250 Pcs	051128-59929	3/16" (4,75 mm)	48" (1.22 m) sticks	0.187"/0.093" (4,8/2,4 mm)	250
MFP-1/4-48"-Clear-12 Pcs	051128-59744	1/4" (6,35 mm)	48" (1.22 m) sticks	0.250"/0.125" (6,4/3,2 mm)	12
MFP-1/4-48"-Clear-125 Pcs	051128-59930	1/4" (6,35 mm)	48" (1.22 m) sticks	0.250"/0.125" (6,4/3,2 mm)	125
MFP-3/8-48"-Clear-12 Pcs	051128-59745	3/8" (9,52 mm)	48" (1.22 m) sticks	0.375"/0.187" (9,5/4,8 mm)	12
MFP-3/8-48"-Clear-125 Pcs	051128-59931	3/8" (9,52 mm)	48" (1.22 m) sticks	0.375"/0.187" (9,5/4,8 mm)	125
MFP-1/2-48"-Clear-5 Pcs	051128-59746	1/2" (12,7 mm)	48" (1.22 m) sticks	0.500"/0.250" (12,7/6,4 mm)	5
MFP-1/2-48"-Clear-100 Pcs	051128-59934	1/2" (12,7 mm)	48" (1.22 m) sticks	0.500"/0.250" (12,7/6,4 mm)	100
MFP-5/8-48"-Clear-50 Pcs	051128-59953	5/8" (15,88 mm)	48" (1.22 m) sticks	0.625"/0.313" (15,9/7,9 mm)	50
MFP-3/4-48"-Clear-5 Pcs	051128-59747	3/4" (19,0 mm)	48" (1.22 m) sticks	0.750"/0.375" (19,1/9,5 mm)	5
MFP-3/4-48"-Clear-50 Pcs	051128-59932	3/4" (19,0 mm)	48" (1.22 m) sticks	0.750"/0.375" (19,1/9,5 mm)	50
MFP-1-48"-Clear-30 Pcs	051128-59933	1" (25,4 mm)	48" (1.22 m) sticks	1.00"/0.500" (25,4/12,7 mm)	30
MFP-1/16-48"-Clear-Hdr-25 Pcs	051128-59799	1/16" (1,59 mm)	48" (1.22 m) sticks w/ header label	0.063"/0.031" (1,6/0,8 mm)	25
MFP-3/32-48"-Clear-Hdr-25 Pcs	051128-59800	3/32" (2,38 mm)	48" (1.22 m) sticks w/ header label	0.093"/0.046" (2,4/1,2 mm)	25
MFP-1/8-48"-Clear-Hdr-25 Pcs	051128-59801	1/8" (3,18 mm)	48" (1.22 m) sticks w/ header label	0.125"/0.062" (3,2/1,6 mm)	25
MFP-3/16-48"-Clear-Hdr-12 Pcs	051128-59798	3/16" (4,75 mm)	48" (1.22 m) sticks w/ header label	0.187"/0.093" (4,8/2,4 mm)	12
MFP-1/4-48"-Clear-Hdr-12 Pcs	051128-59802	1/4" (6,35 mm)	48" (1.22 m) sticks w/ header label	0.250"/0.125" (6,4/3,2 mm)	12
MFP-3/8-48"-Clear-Hdr-12 Pcs	051128-59803	3/8" (9,52 mm)	48" (1.22 m) sticks w/ header label	0.375"/0.187" (9,5/4,8 mm)	12
MFP-1/2-48"-Clear-Hdr-5 Pcs	051128-59804	1/2" (12,7 mm)	48" (1.22 m) sticks w/ header label	0.500"/0.250" (12,7/6,4 mm)	5
MFP-1-48"-Clear-Hdr-5 Pcs	051128-59805	1" (25,4 mm)	48" (1.22 m) sticks w/ header label	1.00"/0.500" (25,4/12,7 mm)	5

## Single (Thin) Wall Tubing: 3M™ Very Flexible Polyolefin Tubing VFP-876

### 3M™ Heat Shrink Very Flexible Polyolefin Tubing VFP-876

3M™ Heat Shrink Very Flexible Polyolefin Tubing VFP-876 is the most flexible of the heat shrinkable, polyolefin tubings. The extra flexibility and low shrink temperature of VFP-876 tubing make it ideal for shrink-fit jacketing and insulation of flexible wire bundles and sensitive components. VFP-876 tubing has a 2:1 shrink ratio. When freely recovered, the tubing will shrink to 50% of its as-supplied internal diameter. The recovered wall thickness of the tubing is proportional to the degree of recovery. High expansion-ratio VFP-876 tubing is available subject to factory quotation.

<b>Material</b>	Polyolefin
<b>Color</b>	Black
<b>Shrink Ratio</b>	2:1
<b>Operating Temperature</b>	-67 to 275°F (-55 to 135°C)
<b>Voltage</b>	600 Volts Max.
<b>RoHS 2011/65/EU</b>	Yes
<b>Specification</b>	MIL-R-46846, Type V; AMS-3587

**Agency Approvals**



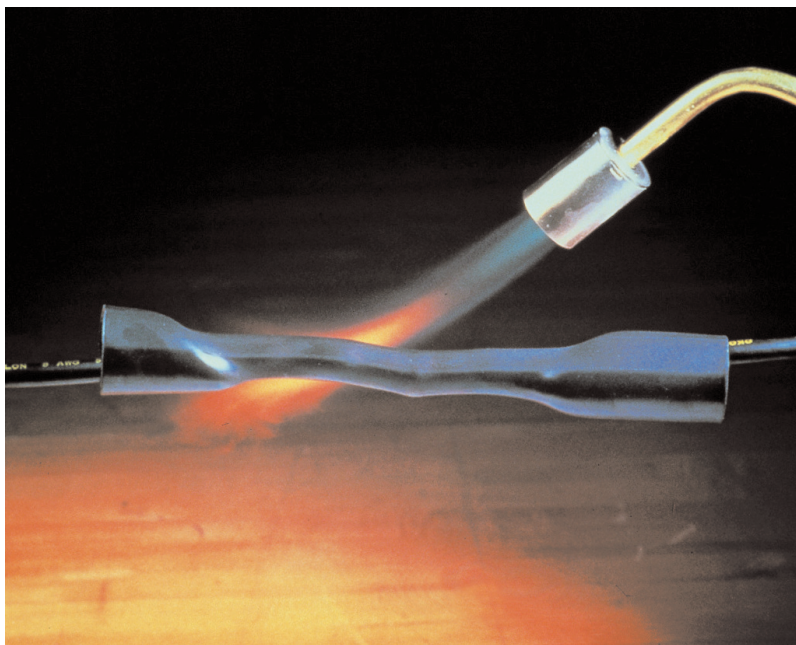
**Manufacturing Origin**



Order No.	UPC	Size	Format	Case Qty.
VFP-3/64-6"-Black-10-10 Pc Pks	051128-60108	3/64" (1,17 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-1/16-6"-Black-10-10 Pc Pks	051128-60100	1/16" (1,60 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-3/32-6"-Black-10-10 Pc Pks	051128-60106	3/32" (2,36 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-1/8-6"-Black-10-10 Pc Pks	051128-60103	1/8" (3,18 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-3/16-6"-Black-10-10 Pc Pks	051128-60105	3/16" (4,75 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-1/4-6"-Black-10-10 Pc Pks	051128-60102	1/4" (6,35 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-3/8-6"-Black-10-10 Pc Pks	051128-60109	3/8" (9,53 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-1/2-6"-Black-10-10 Pc Pks	051128-60101	1/2" (12,70 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-3/4-6"-Black-10-10 Pc Pks	051128-60107	3/4" (19,05 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-1-6"-Black-10-10 Pc Pks	051128-60104	1" (25,40 mm)	6" (152,4 mm) pieces	10/pk, 10 pks
VFP-1 1/2-6"-Black-10-3 Pc Pks	051128-60099	1 1/2" (38,1 mm)	6" (15,24 cm) pieces	3/pk, 10 pks
VFP-3/64-48"-Black-25 Pcs	051128-59701	3/64" (1,17 mm)	48" (1,22 m) sticks	25 pcs
VFP-1/16-48"-Black-25 Pcs	051128-59702	1/16" (1,60 mm)	48" (1,22 m) sticks	25 pcs
VFP-3/32-48"-Black-25 Pcs	051128-59703	3/32" (2,36 mm)	48" (1,22 m) sticks	25 pcs
VFP-1/8-48"-Black-25 Pcs	051128-59704	1/8" (3,18 mm)	48" (1,22 m) sticks	25 pcs
VFP-3/16-48"-Black-25 Pcs	051128-59705	3/16" (4,75 mm)	48" (1,22 m) sticks	25 pcs
VFP-1/4-48"-Black-12 Pcs	051128-59706	1/4" (6,35 mm)	48" (1,22 m) sticks	12 pcs
VFP-3/8-48"-Black-12 Pcs	051128-59707	3/8" (9,53 mm)	48" (1,22 m) sticks	12 pcs
VFP-1/2-48"-Black-12 Pcs	051128-59708	1/2" (12,70 mm)	48" (1,22 m) sticks	12 pcs
VFP-3/4-48"-Black-12 Pcs	051128-59709	3/4" (19,05 mm)	48" (1,22 m) sticks	12 pcs
VFP-1-48"-Black-5 Pcs	051128-59710	1" (25,40 mm)	48" (1,22 m) sticks	5 pcs
VFP-1 1/2-48"-Black-5 Pcs	051128-59711	1 1/2" (38,10 mm)	48" (1,22 m) sticks	5 pcs

# Medium/Heavy Wall

Demanding conditions call for heavy-duty abrasion protection. With 3M™ Heavy Wall Tubing, you can get the level of protection you want from a broad range of products. Choose the tubing you need based on the degree of temperature protection, flexibility, chemical resistance, or moisture protection.




Section	Page
Medium/Heavy Wall .....	385-393
3M™ Heat Shrink Thick-Wall Cable Sleeves ITCSF .....	386
3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN .....	387-389
3M™ Heat Shrink Heavy-Wall Flame-Retardant Cable Sleeves HDT for 1 kV.....	390
3M™ Heat Shrink Medium-Wall Flame-Retardant Cable Sleeves MDT for 1 kV.....	391
3M™ Heat Shrink Medium-Wall Cable Sleeves IMCSN for 1 kV.....	392
3M™ Splice Kit UF .....	393

## Medium/Heavy Wall

### 3M™ Heat Shrink Thick-Wall Cable Sleeves ITCSF

3M™ Heat Shrink Thick-Wall Cable Sleeves ITCSF are cross-linked polyolefin. They are flame retardant, highly split resistant and fast shrinking to provide rapid installation. The 48" (1,22 m) sleeves come standard with a factory applied adhesive/sealant. Order any of several packaging choices or look for the counter merchandiser assortment at a 3M authorized distributor.

<b>Voltage Rating</b>	UL Rated 600 V 3M Internal Test Rated to 1 kV
<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-67°F to 230°F (-55°C to 110°C)
<b>Voltage</b>	600 Volts Max.
<b>Flame Retardant</b>	Yes
<b>RoHS 2011/65/EU</b>	Yes
<b>Specification</b>	MSHA; ABS
<b>Manufacturing Origin</b>	





Order No.	UPC	Typical Cable Range	Length	Expanded/Recovered I.D.	UL Specification	Adhesive Included	Direct Bury	Case Qty.
ITCSF-0400-48"-Black-100 Pcs	051135-38230	12-6 AWG	48" (1,22 m) Sleeve	0.40"/0.15" (10,2/3,8 mm)	UL486D	Yes	Yes	100
ITCSF-0800-48"-Black-20 Pcs	051135-38231	8-1/0 AWG	48" (1,22 m) Sleeve	0.80"/0.20" (20,3/5,1 mm)	UL486D	Yes	Yes	20
ITCSF-1100-48"-Black-20 Pcs	051135-38232	2-4/0 AWG	48" (1,22 m) Sleeve	1.10"/0.37" (27,9/9,4 mm)	UL486D	Yes	Yes	20
ITCSF-2000-48"-Black-10 Pcs	051135-38234	250-750 kcmil	48" (1,22 m) Sleeve	2.00"/0.65" (50,8/16,5 mm)	UL486D	Yes	Yes	10
ITCSF-4500-48"-Black-5 Pcs	051135-38236	1500-2500 kcmil	48" (1,22 m) Sleeve	4.50"/1.50" (114,3/38,1 mm)	N/A	Yes	No	5

## Medium/Heavy Wall

# 3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN

The 3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN are designed to provide reliable performance for electrical splices, connections and terminations, as well as mechanical and environmental protection. ITCSN heavy-wall cable sleeves are cross-linked polyolefin. They are highly split resistant and fast shrinking to provide rapid installation. The cut-to-length sleeves come standard with a factory-applied adhesive/sealant. Order any of several packaging choices or look for the counter merchandiser assortment at a 3M authorized distributor.

<b>Voltage Rating</b>	UL Rated to 600 V 3M Internal Test Rated to 1 kV
<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-67°F to 230°F (-55°C to 110°C)
<b>Flame Retardant</b>	No
<b>RoHS 2011/65/EU</b>	Yes
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Cable Size	Length	Expanded/Recovered I.D.	UL Spec.	Adhesive Included	Direct Bury	Case Qty.
ITCSN-0400-6"-Black-25 Pcs	054007-08887	12-6 AWG	6" (152,4 mm)	0.40"/0.15" (10,2/3,8 mm)	UL 486D	Yes	Yes	25
ITCSN-0400-6"-Black-100 Pcs	054007-08963	12-6 AWG	6" (152,4 mm)	0.40"/0.15" (10,2/3,8 mm)	UL 486D	Yes	Yes	100
ITCSN-0400-6"-Black-12-3 Pc Pks	051128-60075	12-6 AWG	6" (152,4 mm)	0.40"/0.15" (10,2/3,8 mm)	UL 486D	Yes	Yes	3/pk, 12 pks
ITCSN-0400-6"-Red-12-3 Pc Pks	051128-60076	12-6 AWG	6" (152,4 mm)	0.40"/0.15" (10,2/3,8 mm)	N/A	Yes	No	3/pk, 12 pks
ITCSN-0400-48"-Black-5 Pcs	054007-08902	12-6 AWG	48" (1,22 m)	0.40"/0.15" (10,2/3,8 mm)	UL 486D	Yes	Yes	5
ITCSN-0400-48"-Black-20 Pcs	054007-08964	12-6 AWG	48" (1,22 m)	0.40"/0.15" (10,2/3,8 mm)	UL 486D	Yes	Yes	20
ITCSN-0400-25'-Black-Reel	054007-08886	12-6 AWG	25' (7,62 m)	0.40"/0.15" (10,2/3,8 mm)	N/A	No	No	1
ITCSN-0800-6"-Black-25 Pcs	054007-40067	8-1/0 AWG	6" (152,4 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	25
ITCSN-0800-6"-Black-100 Pcs	054007-08965	8-1/0 AWG	6" (152,4 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	100
ITCSN-0800-6"-Black-12-3 Pc Pks	051128-60077	8-1/0 AWG	6" (152,4 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	3/pk, 12 pks
ITCSN-0800-6"-Red-12-3 Pc Pks	051128-60078	8-1/0 AWG	6" (152,4 mm)	0.80"/0.20" (20,3/5,1 mm)	N/A	Yes	No	3/pk, 12 pks
ITCSN-0800-9"-Black-25 Pcs	054007-08890	8-1/0 AWG	9" (228,6 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	25
ITCSN-0800-9"-Black-100 Pcs	054007-08966	8-1/0 AWG	9" (228,6 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	100 pcs/cs
ITCSN-0800-12"-Black-25 Pcs	054007-08889	8-1/0 AWG	12" (304,8 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	25 pcs/cs
ITCSN-0800-12"-Black-100 Pcs	054007-08967	8-1/0 AWG	12" (304,8 mm)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	100
ITCSN-0800-48"-Black-5 Pcs	054007-08903	8-1/0 AWG	48" (1,22 m)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	5
ITCSN-0800-48"-Black-20 Pcs	054007-08968	8-1/0 AWG	48" (1,22 m)	0.80"/0.20" (20,3/5,1 mm)	UL 486D	Yes	Yes	20

### 3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN (continued)

Order No.	UPC	Cable Size	Length	Expanded/Recovered I.D.	UL Spec.	Adhesive Included	Direct Bury	Case Qty.
ITCSN-0800-48"-Red-20 Pcs	051128-55500	8-1/0 AWG	48" (1,22 m)	0.80"/0.20" (20,3/5,1 mm)	N/A	Yes	No	20
ITCSN-0800-25'-Black-Reel	054007-08888	8-1/0 AWG	25' (7,62 m)	0.80"/0.20" (20,3/5,1 mm)	N/A	No	No	1
ITCSN-1100-6"-Black-25 Pcs	054007-08894	2-4/0 AWG	6" (152,4 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	25
ITCSN-1100-6"-Black-100 Pcs	054007-08969	2-4/0 AWG	6" (152,4 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	100
ITCSN-1100-9"-Black-25 Pcs	054007-08893	2-4/0 AWG	9" (228,6 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	25
ITCSN-1100-9"-Black-100 Pcs	054007-08970	2-4/0 AWG	9" (228,6 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	100
ITCSN-1100-9"-Black-12-3 Pc Pks	051128-60079	2-4/0 AWG	9" (228,6 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	3/pk, 12 pks
ITCSN-1100-9"-Red-12-3 Pc Pks	051128-60080	2-4/0 AWG	9" (228,6 mm)	1.10"/0.37" (27,9/9,4 mm)	N/A	Yes	No	3/pk, 12 pks
ITCSN-1100-12"-Black-10 Pcs	054007-08892	2-4/0 AWG	12" (304,8 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	10
ITCSN-1100-12"-Black-100 Pcs	054007-08971	2-4/0 AWG	12" (304,8 mm)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	100
ITCSN-1100-48"-Black-5 Pcs	054007-08904	2-4/0 AWG	48" (1,22 m)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	5
ITCSN-1100-48"-Black-20 Pcs	054007-08972	2-4/0 AWG	48" (1,22 m)	1.10"/0.37" (27,9/9,4 mm)	UL 486D	Yes	Yes	20
ITCSN-1100-25'-Black-Reel	054007-08891	2-4/0 AWG	25' (7,62 m)	1.10"/0.37" (27,9/9,4 mm)	N/A	No	No	1
ITCSN-1500-9"-Black-10 Pcs	054007-08897	3/0 AWG- 400 kcmil	9" (228,6 mm)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	10
ITCSN-1500-9"-Black-50 Pcs	054007-08973	3/0 AWG- 400 kcmil	9" (228,6 mm)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	50
ITCSN-1500-9"-Black-12-3 Pc Pks	051128-60081	3/0 AWG- 450 kcmil	9" (228,6 mm)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	3/pk, 12 pks
ITCSN-1500-12"-Black-10 Pcs	054007-08896	3/0 AWG- 400 kcmil	12" (304,8 mm)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	10
ITCSN-1500-12"-Black-50 Pcs	054007-08974	3/0 AWG- 400 kcmil	12" (304,8 mm)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	50
ITCSN-1500-48"-Black-5 Pcs	054007-08905	3/0 AWG- 400 kcmil	48" (1,22 m)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	5
ITCSN-1500-48"-Black-20 Pcs	054007-08975	3/0 AWG- 400 kcmil	48" (1,22 m)	1.50"/0.50" (38,1/12,7 mm)	UL 486D	Yes	Yes	20
ITCSN-1500-25'-Black-Reel	054007-08895	3/0 AWG- 450 kcmil	25' (7,62 m)	1.50"/0.50" (38,1/12,7 mm)	N/A	No	No	1
ITCSN-2000-9"-Black-10 Pcs	054007-08900	250-750 kcmil	9" (228,6 mm)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	10
ITCSN-2000-9"-Black-50 Pcs	054007-08976	250-750 kcmil	9" (228,6 mm)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	50
ITCSN-2000-12"-Black-10 Pcs	054007-08899	250-750 kcmil	12" (304,8 mm)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	10
ITCSN-2000-12"-Black-50 Pcs	054007-08977	250-750 kcmil	12" (304,8 mm)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	50
ITCSN-2000-12"-Black-12-3 Pc Pks	051128-60082	250-750 kcmil	12" (304,8 mm)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	3/pk, 12 pks
ITCSN-2000-48"-Black-5 Pcs	054007-08906	250-750 kcmil	48" (1,22 m)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	5
ITCSN-2000-48"-Black-20 Pcs	054007-08978	250-750 kcmil	48" (1,22 m)	2.00"/0.65" (50,8/16,5 mm)	UL 486D	Yes	Yes	20



Medium/Heavy Wall


**3M™ Heat Shrink Heavy-Wall Cable Sleeves ITCSN (continued)**

Order No.	UPC	Cable Size	Length	Expanded/Recovered I.D.	UL Spec.	Adhesive Included	Direct Bury	Case Qty.
ITCSN-2000-25'-Black-Reel	054007-08898	250-750 kcmil	25' (7,62 m)	2.00"/0.65" (50,8/16,5 mm)	N/A	No	No	1
ITCSN-3000-12"-Black-10 Pcs	054007-08901	600-1250 kcmil	12" (304,8 mm)	3.00"/1.00" (76,2/25,4 mm)	N/A	Yes	No	10
ITCSN-3000-12"-Black-50 Pcs	054007-08979	600-1250 kcmil	12" (304,8 mm)	3.00"/1.00" (76,2/25,4 mm)	N/A	Yes	No	50
ITCSN-3000-48"-Black-5 Pcs	054007-08907	600-1250 kcmil	48" (1,22 m)	3.00"/1.00" (76,2/25,4 mm)	N/A	Yes	No	5
ITCSN-3000-48"-Black-20 Pcs	054007-08980	600-1250 kcmil	48" (1,22 m)	3.00"/1.00" (76,2/25,4 mm)	N/A	Yes	No	20
ITCSN-4500-48"-Black-5 Pcs	051135-37979	1500-2500 kcmil	48" (1,22 m)	4.50"/1.50" (114,3/38,1 mm)	N/A	Yes	No	5
ITCSN-4500-48"-Black-20 Pcs	054007-08981	1500-2500 kcmil	48" (1,22 m)	4.50"/1.50" (114,3/38,1 mm)	N/A	Yes	No	20
ITCSN-6000-48"-Black-5 Pcs	051135-37980	2.1"-4.8"	48" (1,22 m)	6.00"/1.80" (152,4/45,7 mm)	N/A	Yes	No	5
ITCSN-6000-48"-Black-20 Pcs	054007-08982	2.1"-4.8"	48" (1,22 m)	6.00"/1.80" (152,4/45,7 mm)	N/A	Yes	No	20

## Medium/Heavy Wall

# 3M™ Heat Shrink Heavy-Wall Flame-Retardant Cable Sleeves HDT for 1 kV

The 3M™ Heat Shrink Heavy-Wall Flame-Retardant Cable Sleeves HDT are designed to provide reliable performance for electrical splices, connections and terminations, as well as mechanical and environmental protection. HDT heavy-wall cable sleeves are cross-linked polyolefin. They are flame-retardant, highly split resistant and fast shrinking to provide rapid installation. The 48" (1,22 m) sleeves come standard with a factory-applied adhesive/sealant. Order any of several packaging choices or look for the counter merchandiser assortment at a 3M authorized distributor. Order in the size equivalent to expanded inside diameter required.

<b>Voltage Rating</b>	600 Volts
<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-67°F to 230°F (-55°C to 110°C)
<b>Minimum Shrink Temperature</b>	250°F (121°C)
<b>Flame Retardant</b>	Yes
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	ABS; SAE-AMS-DTL-23053/15, Class 1
<b>Manufacturing Origin</b>	




Order No.	UPC	Cable Size Range	Color	Length	Expanded/Recovered I.D.	Adhesive Included	Direct Bury	Case Qty.
HDT-0400-48"-Black-20 Pcs	054007-40649	12-6 AWG	Black	48" (1,22 m) Sleeves	0.40"/0.15" (10,2/3,8 mm)	Yes	No	20
HDT-0800-48"-Black-20 Pcs	054007-40650	8-1/0 AWG	Black	48" (1,22 m) Sleeves	0.80"/0.20" (20,3/5,1 mm)	Yes	No	20
HDT-1100-48"-Black-20 Pcs	054007-40651	2-4/0 AWG	Black	48" (1,22 m) Sleeves	1.10"/0.37" (27,9/9,4 mm)	Yes	No	20
HDT-1500-48"-Black-20 Pcs	054007-40652	3/0 AWG-400 kcmil	Black	48" (1,22 m) Sleeves	1.50"/0.50" (38,1/12,7 mm)	Yes	No	20
HDT-2000-48"-Black-10 Pcs	054007-40654	250-750 kcmil	Black	48" (1,22 m) Sleeves	2.00"/0.65" (50,8/16,5 mm)	Yes	No	10
HDT-3000-48"-Black-10 Pcs	054007-40655	600-1250 kcmil	Black	48" (1,22 m) Sleeves	3.00"/1.00" (76,2/25,4 mm)	Yes	No	10
HDT-4500-48"-Black-5 Pcs	054007-40656	1500-2500 kcmil	Black	48" (1,22 m) Sleeves	4.50"/1.50" (114,3/38,1 mm)	Yes	No	5
HDT-6000-48"-Black-5 Pcs	054007-59022	2.1"-4.8" O.D.	Black	48" (1,22 m) Sleeves	6.00"/1.80" (152,4/45,7 mm)	Yes	No	5
HDT-7000-48"-Black-5 Pcs	051135-37774	2.5"-5.6" O.D.	Black	48" (1,22 m) Sleeves	7.00"/2.00" (177,8/50,8 mm)	Yes	No	5

## Medium/Heavy Wall

# 3M™ Heat Shrink Medium-Wall Flame-Retardant Cable Sleeves MDT for 1 kV

3M™ Heat Shrink Medium-Wall Flame-Retardant Cable Sleeves MDT are flame-retardant and protect against mechanical and environmental dangers, providing excellent abrasion, corrosion and chemical resistance. MDT sleeves have greater flexibility than the HDT sleeves, our heavy-wall version. Installation of these fast-shrinking sleeves is easy with little training necessary. The 48 in (121,9 cm) lengths are unprinted and come standard with a factory-applied adhesive/sealant, a thermoplastic material that remains flexible over long periods under adverse environmental conditions. During heating, the sealant softens, bonds to underlying surfaces and fills small voids that might be present. Order in the size equivalent to expanded inside diameter required.

<b>Voltage Rating</b>	Meets Mil Spec 600 V Rating UL Rated to 600 Volts
<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-67°F to 230°F (-55°C to 110°C)
<b>Minimum Shrink Temperature</b>	250°F (121°C)
<b>Flame Retardant</b>	Yes
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	ABS; SAE-AMS-DTL- 23053/15, Class 2
<b>Manufacturing Origin</b>	



Order No.	UPC	Typical Cable Range	Color	Format	Expanded/Recovered I.D.	Adhesive Included	Direct Bury	Case Qty.
MDT-0400-48"-Black-20 Pcs	054007-40672	12-6 AWG	Black	48" (1,22 m) Sleeves	0.40"/0.15" (10,2/3,8 mm)	Yes	No	20
MDT-0800-48"-Black-20 Pcs	054007-40673	8-3 AWG	Black	48" (1,22 m) Sleeves	0.80"/0.22" (20,3/5,6 mm)	Yes	No	20
MDT-1100-48"-Black-20 Pcs	054007-40674	2-2/0 AWG	Black	48" (1,22 m) Sleeves	1.10"/0.37" (27,9/9,4 mm)	Yes	No	20
MDT-1300-48"-Black-20 Pcs	054007-40675	1-4/0 AWG	Black	48" (1,22 m) Sleeves	1.30"/0.43" (33,0/10,9 mm)	Yes	No	20
MDT-1500-48"-Black-20 Pcs	054007-40676	1/0 AWG-250 kcmil	Black	48" (1,22 m) Sleeves	1.50"/0.50" (38,1/12,7 mm)	Yes	No	20
MDT-1700-48"-Black-20 Pcs	054007-40677	4/0 AWG-400 kcmil	Black	48" (1,22 m) Sleeves	1.70"/0.60" (43,2/15,2 mm)	Yes	No	20
MDT-2000-48"-Black-15 Pcs	054007-40678	300-500 kcmil	Black	48" (1,22 m) Sleeves	2.00"/0.75" (50,8/19,1 mm)	Yes	No	15
MDT-3000-48"-Black-15 Pcs	054007-40679	600-1250 kcmil	Black	48" (1,22 m) Sleeves	3.00"/1.00" (76,2/25,4 mm)	Yes	No	15
MDT-4300-48"-Black-10 Pcs	054007-40680	1000-2500 kcmil	Black	48" (1,22 m) Sleeves	4.30"/1.50" (109,2/38,1 mm)	Yes	No	10

## Medium/Heavy Wall

### 3M™ Heat Shrink Medium-Wall Cable Sleeves IMCSN for 1 kV

3M™ Heat Shrink Medium-Wall Cable Sleeves IMCSN are designed to provide reliable performance for electrical splices, connections, and terminations, as well as mechanical and environmental protection. IMCSN sleeves are fabricated from cross-linked polyolefin. The tubing is highly split resistant, and fast-shrinking to provide rapid installation. The tubing comes standard with a factory-applied adhesive/sealant.



<b>Voltage Rating</b>	1 kV
<b>Material</b>	Cross-Linked Polyolefin
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-67°F to 230°F (-55°C to 110°C)
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specifications</b>	ABS; MIL-I-23053/15A Class 2

Order No.	UPC	Cable Size Range	Length	Expanded/Recovered I.D.	Adhesive Included	Direct Bury	Case Qty.
IMCSN-0400-48"-Black-20 Pcs	054007-58810	12-6 AWG (4-10 mm <sup>2</sup> )	48" (1,22 m) Sleeves	0.40"/0.15" (10,2/3,8 mm)	Yes	Yes	20
IMCSN-0400-25'-Black-Reel	051135-03481	12-6 AWG (4-10 mm <sup>2</sup> )	25' (7,62 m) Reels	0.40"/0.15" (10,2/3,8 mm)	No	No	1
IMCSN-0800-48"-Black-20 Pcs	054007-58811	8-3 AWG (10-25 mm <sup>2</sup> )	48" (1,22 m) Sleeves	0.80"/0.22" (20,3/5,6 mm)	Yes	Yes	20
IMCSN-0800-25'-Black-Reel	051135-03482	8-3 AWG (10-25 mm <sup>2</sup> )	25' (7,62 m) Reels	0.80"/0.22" (20,3/5,6 mm)	No	No	1
IMCSN-1100-48"-Black-20 Pcs	054007-58812	2-2/0 AWG (35-60 mm <sup>2</sup> )	48" (1,22 m) Sleeves	1.10"/0.37" (27,9/9,4 mm)	Yes	Yes	20
IMCSN-1100-25'-Black-Reel	051135-03483	2-2/0 AWG (35-60 mm <sup>2</sup> )	25' (7,62 m) Reels	1.10"/0.37" (27,9/9,4 mm)	No	No	1
IMCSN-1300-48"-Black-20 Pcs	051135-03448	1-4/0 AWG (50-100 mm <sup>2</sup> )	48" (1,22 m) Sleeves	1.30"/0.43" (33/10,9 mm)	Yes	Yes	20
IMCSN-1300-25'-Black-Reel	051135-03484	1-4/0 AWG (50-100 mm <sup>2</sup> )	25' (7,62 m) Reels	1.30"/0.43" (33/10,9 mm)	No	No	1
IMCSN-1500-48"-Black-20 Pcs	054007-58813	1/0 AWG-250 kcmil (60-120 mm <sup>2</sup> )	48" (1,22 m) Sleeves	1.50"/0.50" (38,1/12,7 mm)	Yes	Yes	20
IMCSN-1500-25'-Black-Reel	051135-03485	1/0 AWG-250 kcmil (60-120 mm <sup>2</sup> )	25' (7,62 m) Reels	1.50"/0.50" (38,1/12,7 mm)	No	No	1
IMCSN-1700-48"-Black-20 Pcs	051135-03317	4/0 AWG-400 kcmil (120-200 mm <sup>2</sup> )	48" (1,22 m) Sleeves	1.70"/0.60" (43,2/15,2 mm)	Yes	Yes	20
IMCSN-1700-25'-Black-Reel	051135-03486	4/0 AWG-400 kcmil (120-200 mm <sup>2</sup> )	25' (7,62 m) Reels	1.70"/0.60" (43,2/15,2 mm)	No	No	1
IMCSN-2000-48"-Black-15 Pcs	054007-58814	300-500 kcmil (185-250 mm <sup>2</sup> )	48" (1,22 m) Sleeves	2.00"/0.75" (50,8/19,1 mm)	Yes	Yes	15
IMCSN-2000-25'-Black-Reel	051135-03487	300-500 kcmil (185-250 mm <sup>2</sup> )	25' (7,62 m) Reels	2.00"/0.75" (50,8/19,1 mm)	No	No	1
IMCSN-3000-48"-Black-15 Pcs	054007-58815	600-1250 kcmil (325-625 mm <sup>2</sup> )	48" (1,22 m) Sleeves	3.00"/1.00" (76,2/25,4 mm)	Yes	Yes	15
IMCSN-3000-25'-Black-Reel	051135-03530	600-1250 kcmil (325-625 mm <sup>2</sup> )	25' (7,62 m) Reels	3.00"/1.00" (76,2/25,4 mm)	No	No	1
IMCSN-4300-48"-Black-10 Pcs	054007-58809	1000-2500 kcmil (625-1000 mm <sup>2</sup> )	48" (1,22 m) Sleeves	4.30"/1.50" (109,2/38,1 mm)	Yes	Yes	10
IMCSN-4300-25'-Black-Reel	051135-03531	1000-2500 kcmil (625-1000 mm <sup>2</sup> )	25' (7,62 m) Reels	4.30"/1.50" (109,2/38,1 mm)	No	No	1

## Medium/Heavy Wall

## 3M™ Splice Kit UF

3M™ Splice Kit UF is designed to provide a reliable, moisture proof electrical connection for type UF-B underground feeder cable rated for 600 V (copper wire only) ranging from #14/3 without ground wire up to #8/3 with ground wire.

The UF splice kit consists of a connector-insulation assembly and a heat shrink tube. The connector assembly contains four cylindrical set screw connectors separated by a piece of vinyl insulation. The heat shrink tube is a heavy-wall, adhesive-lined tube. Underground Feeder (UF)-B cables are flat, and typically have three solid conductors without a ground or two solid conductors with a ground. They range in size from 14–8 AWG. The most common UF cable size is 14–10 AWG.

<b>Voltage Rating</b>	600 V (copper wire only)
<b>Number of Conductors</b>	Single Conductor
<b>Cable/Shielding Type</b>	Non-Shielded
<b>Splice Type</b>	Heat Shrink
<b>Operating Temperature Range</b>	-67°F to 230°F (-55°C to 110°C)
<b>RoHS 2011/65/EU</b>	Yes

**Agency Approvals**  UL 486D listed E102356

**Manufacturing Origin**



Order No.	UPC	Description	Conductor Size	Min. Order Qty.	Case Qty.
UF1-Splice Kit-6 Kits	054007-42920	UF Splice Kit-Standard includes 1.8" (45,7 mm) length connector/ 8.0" (203,2 mm) length of heavy wall, adhesive lined heat shrink tube.	14–8 AWG	6 kits	6 kits
UF2-Splice Kit-6 Kits	054007-42921	UF Splice Kit-Stretcher offers an 11.5" (292,1 mm) length connector/ 20.0" (508,0 mm) length of heavy wall, adhesive lined heat shrink tube. The Stretcher Kit is used in situations where a 7–10" (17,8–25,4 cm) section of the cable has been damaged or destroyed.	14–8 AWG	6 kits	6 kits

# 3M™ Bus Bar Tubing BBI-A

Get durable and reliable protection that helps prevent failures and downtime in applications from 5-35 kV. 3M™ Heat Shrinkable Bus Bar Tubing BBI-A covers and insulates rectangular, square or round bus bars, resists splitting and solvents, and provides excellent tracking resistance.



Section	Page
3M™ Bus Bar Tubing BBI-A.....	394-397
3M™ Bus Bar Tubing BBI-A Series for 5-15 kV Bus Bar Size Ranges.....	395
3M™ Bus Bar Tubing BBI-A Series for 25 kV Bus Bar Size Ranges.....	396
3M™ Bus Bar Tubing BBI-A Series for 35 kV Bus Bar Size Ranges.....	397

## 3M™ Bus Bar Tubing BBI-A

# 3M™ Bus Bar Tubing BBI-A Series for 5-15 kV Bus Bar Size Ranges

**Material:** Cross-Linked Polyolefin

**Max. Operating Temperature:** 230°F (110°C)

**Voltage Rating:** 5-15 kV

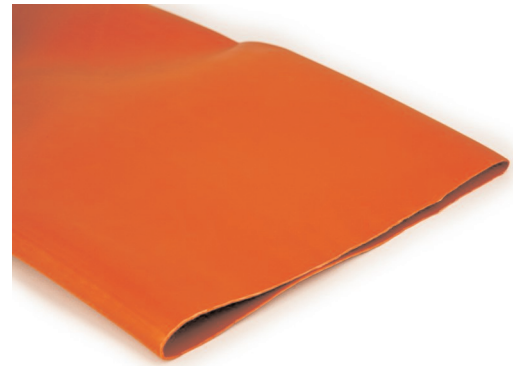
**BIL:** 110 V

**Flame Retardant:** Yes

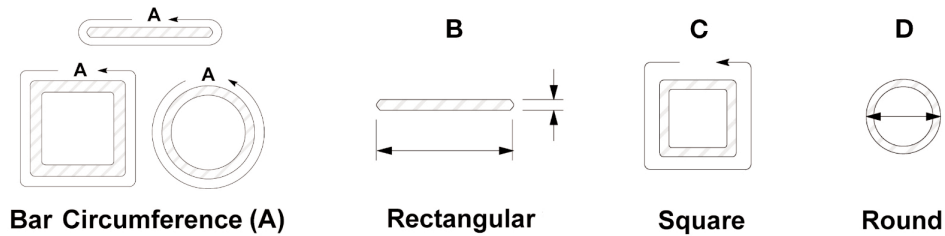
**RoHS 2011/65/EU:** Yes

**Specification:** ASTM-D-257, 149, 150, 2303; IEC 216; ANSI/IEEE Std C37.20

**Manufacturing Origin:**  MADE IN USA



Heat Shrink



Order No.	UPC	Bar Circum. (A)	Rectangular Dimension (B)	Square Dimension (C)	Round Diameter (D)	Linear Ft/Cs
BBI-3A-Red-20' Roll	051135-35726	3.28"-5.57" (83-141 mm)	1-1/2" x 1/4" to 2-1/2" x 1/2" (38 x 6 to 64 x 13 mm)	1" x 1" to 1-1/2" x 1-1/2" (25 x 25 to 38 x 38 mm)	1-1/8" to 1-3/4" (29 to 44 mm)	20'
BBI-3A-Red-50' Roll	051135-35727	3.28"-5.57" (83-141 mm)	1-1/2" x 1/4" to 2-1/2" x 1/2" (38 x 6 to 64 x 13 mm)	1" x 1" to 1-1/2" x 1-1/2" (25 x 25 to 38 x 38 mm)	1-1/8" to 1-3/4" (29 to 44 mm)	50'
BBI-4A-Red-20' Roll	051135-35728	5.43"-8.86" (138-225 mm)	2-1/2" x 3/8" to 4" x 3/4" (64 x 10 to 102 x 19 mm)	2" x 2" (51 x 51 mm)	1-3/4" to 2-3/4" (44 to 70 mm)	20'
BBI-4A-Red-50' Roll	051135-35729	5.43"-8.86" (138-225 mm)	2-1/2" x 3/8" to 4" x 3/4" (64 x 10 to 102 x 19 mm)	2" x 2" (51 x 51 mm)	1-3/4" to 2-3/4" (44 to 70 mm)	50'
BBI-5A-Red-20' Roll	051135-35730	6.67"-10.86" (169-276 mm)	3" x 5/8" to 5" x 3/4" (76 x 16 to 127 x 19 mm)	2" x 2" to 2-1/2" x 2-1/2" (51 x 51 to 64 x 64 mm)	2-1/8" to 3-3/8" (54 to 86 mm)	20'
BBI-5A-Red-50' Roll	051135-35731	6.67"-10.86" (169-276 mm)	3" x 5/8" to 5" x 3/4" (76 x 16 to 127 x 19 mm)	2" x 2" to 2-1/2" x 2-1/2" (51 x 51 to 64 x 64 mm)	2-1/8" to 3-3/8" (54 to 86 mm)	50'
BBI-6A-Red-20' Roll	051135-35732	7.57"-12.86" (192-327 mm)	3-1/2" x 1/2" to 6" x 3/4" (89 x 13 to 152 x 19 mm)	2-1/2" x 2-1/2" to 3" x 3" (64 x 64 to 76 x 76 mm)	2-1/2" to 4" (64 to 102 mm)	20'
BBI-6A-Red-50' Roll	051135-35733	7.57"-12.86" (192-327 mm)	3-1/2" x 1/2" to 6" x 3/4" (89 x 13 to 152 x 19 mm)	2-1/2" x 2-1/2" to 3" x 3" (64 x 64 to 76 x 76 mm)	2-1/2" to 4" (64 to 102 mm)	50'
BBI-7A-Red-20' Roll	051135-35734	8.28"-13.00" (210-330 mm)	4" x 1/4" to 6" x 3/4" (102 x 6 to 152 x 19 mm)	2-1/2" x 2-1/2" to 3" x 3" (64 x 64 to 76 x 76 mm)	2-3/4" to 4-1/8" (70 to 105 mm)	20'
BBI-7A-Red-50' Roll	051135-35735	8.28"-13.00" (210-330 mm)	4" x 1/4" to 6" x 3/4" (102 x 6 to 152 x 19 mm)	2-1/2" x 2-1/2" to 3" x 3" (64 x 64 to 76 x 76 mm)	2-3/4" to 4-1/8" (70 to 105 mm)	50'
BBI-8A-Red-20' Roll	051135-35736	10.29"-16.43" (261-417 mm)	5" x 1/4" to 8" x 3/8" (127 x 6 to 203 x 10 mm)	3" x 3" to 4" x 4" (76 x 76 to 102 x 102 mm)	3-3/8" to 5-1/8" (86 to 130 mm)	20'
BBI-8A-Red-50' Roll	051135-35737	10.29"-16.43" (261-417 mm)	5" x 1/4" to 8" x 3/8" (127 x 6 to 203 x 10 mm)	3" x 3" to 4" x 4" (76 x 76 to 102 x 102 mm)	3-3/8" to 5-1/8" (86 to 130 mm)	50'
BBI-9A-Red-20' Roll	051135-35876	12.29"-19.23" (312-488 mm)	6" x 1/4" to 9" x 3/4" (152 x 6 to 229 x 19 mm)	3-1/2" x 3-1/2" to 5" x 5" (89 x 89 to 127 x 127 mm)	4" to 6-1/8" (102 to 156 mm)	20'
BBI-9A-Red-50' Roll	051135-35877	12.29"-19.23" (312-488 mm)	6" x 1/4" to 9" x 3/4" (152 x 6 to 229 x 19 mm)	3-1/2" x 3-1/2" to 5" x 5" (89 x 89 to 127 x 127 mm)	4" to 6-1/8" (102 to 156 mm)	50'
BBI-10A-Red-20' Roll	051135-35878	15.43"-24.14" (392-612 mm)	8" x 1/4" to 10" x 3/4" (203 x 6 to 254 x 19 mm)	5" x 5" to 6" x 6" (127 x 127 to 152 x 152 mm)	5" to 7-5/8" (127 to 194 mm)	20'
BBI-10A-Red-50' Roll	051135-35879	15.43"-24.14" (392-612 mm)	8" x 1/4" to 10" x 3/4" (203 x 6 to 254 x 19 mm)	5" x 5" to 6" x 6" (127 x 127 to 152 x 152 mm)	5" to 7-5/8" (127 to 194 mm)	50'

## 3M™ Bus Bar Tubing BBI-A

# 3M™ Bus Bar Tubing BBI-A Series for 25 kV Bus Bar Size Ranges

**Material:** Cross-Linked Polyolefin

**Max. Operating Temperature:** 230°F (110°C)

**Voltage Rating:** 25 kV

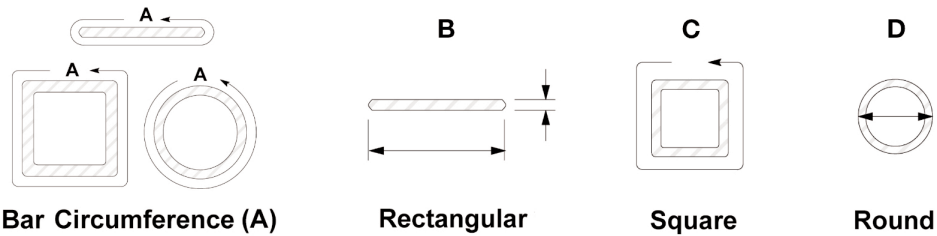
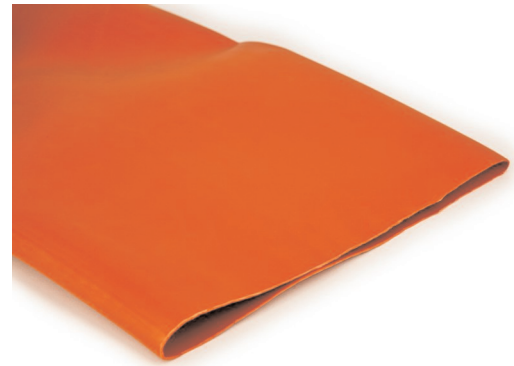
**BIL:** 125 V

**Flame Retardant:** Yes

**RoHS 2011/65/EU:** Yes

**Specification:** ASTM-D-257, 149, 150, 2303; IEC 216; ANSI/IEEE Std C37.20

**Manufacturing Origin:**  MADE IN USA



Order No.	UPC	Bar Circum. (A)	Rectangular Dimension (B)	Square Dimension (C)	Round Diameter (D)	Linear Ft/Cs
BBI-3A-Red-20' Roll	051135-35726	3.28"-3.56" (83-90 mm)	1-1/2" x 1/4" to 1-1/2" x 3/8" (38 x 6 to 38 x 10 mm)	Measure circumference	1-1/8" (29 mm)	20'
BBI-3A-Red-50' Roll	051135-35727	3.28"-3.56" (83-90 mm)	1-1/2" x 1/4" to 1-1/2" x 3/8" (38 x 6 to 38 x 10 mm)	Measure circumference	1-1/8" (29 mm)	50'
BBI-4A-Red-20' Roll	051135-35728	5.43"-5.80" (138-147 mm)	2-1/2" x 3/8" to 2-1/2" x 5/8" (64 x 10 to 64 x 16 mm)	Measure circumference	1-3/4" (44 mm)	20'
BBI-4A-Red-50' Roll	051135-35729	5.43"-5.80" (138-147 mm)	2-1/2" x 3/8" to 2-1/2" x 5/8" (64 x 10 to 64 x 16 mm)	Measure circumference	1-3/4" (44 mm)	50'
BBI-5A-Red-20' Roll	051135-35730	6.67"-7.18" (169-182 mm)	3" x 5/8" to 3" x 3/4" (76 x 16 to 76 x 19 mm)	Measure circumference	2-1/8" to 2-1/4" (54 to 57 mm)	20'
BBI-5A-Red-50' Roll	051135-35731	6.67"-7.18" (169-182 mm)	3" x 5/8" to 3" x 3/4" (76 x 16 to 76 x 19 mm)	Measure circumference	2-1/8" to 2-1/4" (54 to 57 mm)	50'
BBI-6A-Red-20' Roll	051135-35732	7.57"-8.43" (192-214 mm)	3-1/2" x 1/2" to 4" x 1/4" (89 x 13 to 102 x 6 mm)	Measure circumference	2-1/2" to 2-5/8" (64 to 67 mm)	20'
BBI-6A-Red-50' Roll	051135-35733	7.57"-8.43" (192-214 mm)	3-1/2" x 1/2" to 4" x 1/4" (89 x 13 to 102 x 6 mm)	Measure circumference	2-1/2" to 2-5/8" (64 to 67 mm)	50'
BBI-7A-Red-20' Roll	051135-35734	8.28"-10.44" (210-265 mm)	4" x 1/4" to 5" x 3/8" (102 x 6 to 127 x 10 mm)	2-1/2" x 2-1/2" (64 x 64 mm)	2-3/4" to 3-1/4" (70 to 83 mm)	20'
BBI-7A-Red-50' Roll	051135-35735	8.28"-10.44" (210-265 mm)	4" x 1/4" to 5" x 3/8" (102 x 6 to 127 x 10 mm)	2-1/2" x 2-1/2" (64 x 64 mm)	2-3/4" to 3-1/4" (70 to 83 mm)	50'
BBI-8A-Red-20' Roll	051135-35736	10.29"-12.88" (261-327 mm)	5" x 1/4" to 6" x 3/4" (127 x 6 to 152 x 19 mm)	3" x 3" (76 x 76 mm)	3-3/8" to 4" (86 to 102 mm)	20'
BBI-8A-Red-50' Roll	051135-35737	10.29"-12.88" (261-327 mm)	5" x 1/4" to 6" x 3/4" (127 x 6 to 152 x 19 mm)	3" x 3" (76 x 76 mm)	3-3/8" to 4" (86 to 102 mm)	50'
BBI-9A-Red-20' Roll	051135-35876	12.29"-15.31" (312-389 mm)	6" x 1/4" to 7" x 3/4" (152 x 6 to 178 x 19 mm)	3-1/2" x 3-1/2" to 4" x 4" (89 x 89 to 102 x 102 mm)	4" to 4-7/8" (102 to 124 mm)	20'
BBI-9A-Red-50' Roll	051135-35877	12.29"-15.31" (312-389 mm)	6" x 1/4" to 7" x 3/4" (152 x 6 to 178 x 19 mm)	3-1/2" x 3-1/2" to 4" x 4" (89 x 89 to 102 x 102 mm)	4" to 4-7/8" (102 to 124 mm)	50'
BBI-10A-Red-20' Roll	051135-35878	15.43"-19.79" (392-503 mm)	8" x 1/4" to 9" x 3/4" (203 x 6 to 229 x 19 mm)	5" x 5" (127x127 mm)	5" to 6-1/4" (127 to 159 mm)	20'
BBI-10A-Red-50' Roll	051135-35879	15.43"-19.79" (392-503 mm)	8" x 1/4" to 9" x 3/4" (203 x 6 to 229 x 19 mm)	5" x 5" (127x127 mm)	5" to 6-1/4" (127 to 159 mm)	50'



## 3M™ Bus Bar Tubing BBI-A

# 3M™ Bus Bar Tubing BBI-A Series for 35 kV Bus Bar Size Ranges

**Material:** Cross-Linked Polyolefin

**Max. Operating Temperature:** 230°F (110°C)

**Voltage Rating:** 35 kV

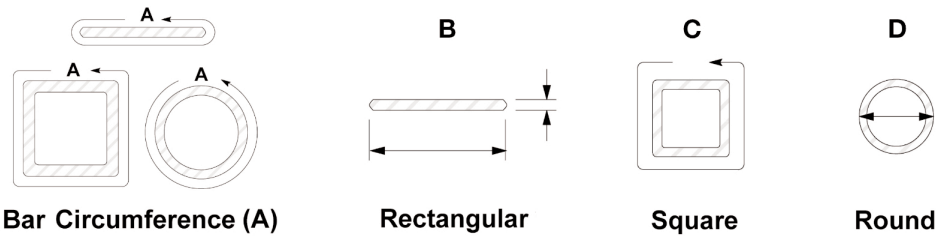
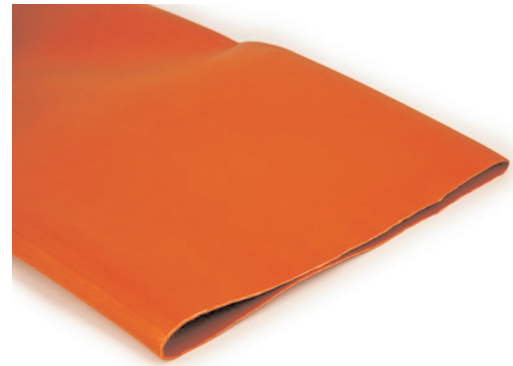
**BIL:** 150 V

**Flame Retardant:** Yes

**RoHS 2011/65/EU:** Yes

**Specification:** ASTM-D-257, 149, 150, 2303; IEC 216; ANSI/IEEE Std C37.20

**Manufacturing Origin:**  MADE IN USA



Bar Circumference (A)

Rectangular

Square

Round

Order No.	UPC	Bar Circum. (A)	Rectangular Dimension (B)	Square Dimension (C)	Round Diameter (D)	Linear Ft/Cs
BBI-7A-Red-20' Roll	051135-35734	8.28"-8.86" (210-225 mm)	4" x 1/4" to 4" x 3/4" (102 x 6 to 102 x 19 mm)	Measure circumference	2-3/4" (70 mm)	20'
BBI-7A-Red-50' Roll	051135-35735	8.28"-8.86" (210-225 mm)	4" x 1/4" to 4" x 3/4" (102 x 6 to 102 x 19 mm)	Measure circumference	2-3/4" (70 mm)	50'
BBI-8A-Red-20' Roll	051135-35736	10.29"-10.94" (261-278 mm)	5" x 1/4" to 5" x 3/4" (127 x 6 to 127 x 19 mm)	Measure circumference	3-3/8" (86 mm)	20'
BBI-8A-Red-50' Roll	051135-35737	10.29"-10.94" (261-278 mm)	5" x 1/4" to 5" x 3/4" (127 x 6 to 127 x 19 mm)	Measure circumference	3-3/8" (86 mm)	50'
BBI-9A-Red-20' Roll	051135-35876	12.29"-13.00" (312-330 mm)	6" x 1/4" to 6" x 3/4" (152 x 6 to 152 x 19 mm)	Measure circumference	4" to 4-1/8" (102 to 105 mm)	20'
BBI-9A-Red-50' Roll	051135-35877	12.29"-13.00" (312-330 mm)	6"x1/4" to 6"x3/4" (152x6 to 152x19 mm)	Measure circumference	4" to 4-1/8" (102 to 105 mm)	50'
BBI-10A-Red-20' Roll	051135-35878	15.43"-16.86" (392-428 mm)	8"x1/4" to 8"x3/4" (203x6 to 203x19 mm)	Measure circumference	5" to 5-1/4" (127 to 133 mm)	20'
BBI-10A-Red-50' Roll	051135-35879	15.43"-16.86" (392-428 mm)	8"x1/4" to 8"x3/4" (203x6 to 203x19 mm)	Measure circumference	5" to 5-1/4" (127 to 133 mm)	50'

# Molded Shapes

Need a waterproof seal on your electrical connections? Put 3M™ Heat Shrink Molded Shapes to the task. Available in breakout boots and end caps, each shape is easy to install and provides exceptional protection from chemicals, water, moisture, air and dirt.



## Section

## Page

Molded Shapes .....	398-401
3M™ Heat Shrink Heavy Duty Breakout Boots and End Caps .....	399-400
3M™ Heat Shrink Heavy Duty Breakout Boots HDBB.....	399
3M™ Heat Shrink Heavy Duty End Caps SKE .....	400
3M™ HDCW Wraparound Heat Shrink Cable Repair .....	401
3M™ Heat Shrink Wraparound Cable Repair Wrap Sleeve HDCW .....	401

## Molded Shapes: 3M™ Heat Shrink Heavy Duty Breakout Boots and End Caps

### 3M™ Heat Shrink Heavy Duty Breakout Boots HDBB

3M™ Heat Shrink Heavy Duty Breakout Boots HDBB provide strain relief and environmental/mechanical protection for breakouts in multiconductor armored or sheathed cables. This style is designed for two to six conductors.



Heat Shrink

<b>Material</b>	Semi-Rigid Flame Retardant Polyolefin
<b>RoHS 2011/65/EU</b>	Yes
<b>Application Specification</b>	MIL-I-81765-1

Order No.	UPC	Outlet	Cable End, Expanded/Recovered	Conductor Legs, Expanded/Recovered	Case Qty.
HDBB-205-1-250	054007-58793	2-way	0.80"/0.37" (20,3/9,4 mm)	0.33"/0.11" (8,4/2,8 mm)	1
HDBB-210-1-250	051135-35992	2-way	1.20"/0.60" (30,5/15,2 mm)	0.50"/0.17" (12,7/4,3 mm)	1
HDBB-220-1-250	051138-46654	2-way	1.90"/0.90" (48,3/22,9 mm)	0.75"/0.30" (19,1/7,6 mm)	1
HDBB-230-1-250	051135-35993	2-way	3.00"/1.50" (76,2/38,1 mm)	1.45"/0.50" (36,8/12,7 mm)	1
HDBB-310-1-250	051135-35994	3-way	0.90"/0.36" (22,9/9,1 mm)	0.33"/0.12" (8,4/3,1 mm)	1
HDBB-320-1-250	051135-35995	3-way	1.20"/0.50" (30,5/12,7 mm)	0.50"/0.16" (12,7/4,1 mm)	1
HDBB-321-1-250	051135-35996	3-way	1.50"/0.69" (38,1/17,5 mm)	0.65"/0.18" (16,5/4,6 mm)	1
HDBB-325-1-250	051135-35997	3-way	1.70"/0.90" (43,2/22,9 mm)	0.82"/0.30" (20,8/7,6 mm)	1
HDBB-335-1-250	051135-03409	3-way	2.40"/1.40" (61,0/35,6 mm)	1.25"/0.50" (31,8/12,7 mm)	1
HDBB-340-1-250	051135-35998	3-way	3.20"/2.00" (81,3/50,8 mm)	1.40"/0.75" (35,6/19,1 mm)	1
HDBB-345-1-250	054007-58794	3-way	4.90"/2.32" (124,5/58,9 mm)	2.00"/1.00" (50,8/25,4 mm)	1
HDBB-405-1-250	054007-58795	4-way	0.90"/0.43" (22,9/10,9 mm)	0.28"/0.11" (7,1/2,8 mm)	1
HDBB-410-1-250	051135-35999	4-way	1.25"/0.80" (31,8/20,3 mm)	0.50"/0.19" (12,7/4,8 mm)	1
HDBB-415-1-250	054007-58855	4-way	1.75"/0.98" (44,5/24,9 mm)	0.79"/0.28" (20,1/7,1 mm)	1
HDBB-420-1-250	051135-36000	4-way	2.35"/1.00" (59,7/25,4 mm)	1.00"/0.35" (25,4/8,9 mm)	1
HDBB-425-1-250	054007-58797	4-way	2.65"/1.40" (67,3/35,6 mm)	1.20"/0.53" (30,5/13,5 mm)	1
HDBB-430-1-250	054007-58798	4-way	5.25"/3.00" (133,4/76,2 mm)	1.35"/0.55" (34,3/14,0 mm)	1
HDBB-505-1-250	051138-46648	5-way	2.36"/0.96" (59,9/24,4 mm)	1.18"/0.29" (30,0/7,4 mm)	1
HDBB-605-1-250	051135-36001	6-way	2.39"/1.45" (60,7/36,8 mm)	0.80"/0.35" (20,3/8,9 mm)	1

## Molded Shapes: 3M™ Heat Shrink Heavy Duty Breakout Boots and End Caps

### 3M™ Heat Shrink Heavy Duty End Caps SKE

3M™ Heat Shrink Heavy Duty End Caps SKE are typically used to seal cable ends and provide mechanical and environmental protection. With the exception of SKE 4/10, these end caps can be fitted with air valves suitable for pressurized cable applications. Consult factory.

**Material** Semi-Rigid Flame Retardant Polyolefin  
**RoHS 2011/65/EU** Yes



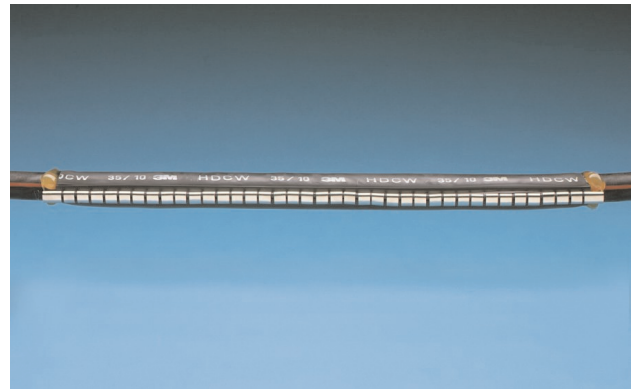
Order No.	UPC	For Cable Diameter Range	"H Diameter" Expanded/Recovered	"J Diameter" Recovered	Case Qty.
SKE-4/10	051138-48153	0.16"-0.31" (4,1-7,9 mm)	0.39"/0.16" (9,9/4,1 mm)	0.12" (3,1 mm)	1000
SKE-8/20	051138-48154	0.31"-0.43" (7,9-10,9 mm)	0.79"/0.30" (20,1/7,6 mm)	0.26" (6,6 mm)	250
SKE-15/40	051138-48155	0.59"-1.26" (15,0-32,0 mm)	1.57"/0.59" (39,9/15,0 mm)	0.41" (10,4 mm)	60
SKE-25/63	051138-48156	1.00"-1.97" (25,4-50,0 mm)	2.48"/0.98" (63,0/24,9 mm)	0.63" (16,0 mm)	60
SKE-30/76	051138-48157	1.18"-2.36" (30,0-59,9 mm)	2.99"/1.18" (76,0/30,0 mm)	0.67" (17,0 mm)	40
SKE-45/100	051138-48158	1.77"-3.15" (45,0-80,0 mm)	3.94"/1.77" (100,1/45,0 mm)	1.02" (25,9 mm)	30

## 3M™ Heat Shrink Wraparound Cable Repair Wrap Sleeve HDCW

3M™ Heat Shrink Wraparound Cable Repair Wrap Sleeves HDCW are designed to quickly repair damaged cable jacketing. They may also be used to re-jacket in-line splices. HDCW wrap sleeves can be used as insulation material on cable and splices up to 1000 volts and as jacket repair material on cable up to 35 kV. The design of the wrap sleeve allows it to be installed in tight spaces with ordinary heating equipment such as a torch.

HDCW wrap sleeves are made from modified cross-linked polyolefin, with a hot-melt adhesive liner on the inner side of the sleeve. Upon heating, the sleeve shrinks and the adhesive melts, creating a water-tight bond between the sleeve and the cable.

3M Heat Shrink Wraparound Cable Repair Wrap Sleeves HDCW meet ANSI C119.1 requirements. A corrosion proof metal channel is used to close the sleeve during installation.



**Voltage** 1000 Volts Max.

**Material** Adhesive-lined, Cross-Linked Polyolefin

**RoHS 2011/65/EU** Yes

Order No.	UPC	Cable Size	Sleeve Length	Jacket Repair Use Range	Expanded/Recovered Diameter	Case Qty.
HDCW-35/10-250	051138-48416	8-2/0 AWG	9.8" (250 mm)	1.38"-0.39" (35-10 mm)	1.97"/0.32" (50/8 mm)	5
HDCW-35/10-500	051138-48417	8-2/0 AWG	19.7" (500 mm)	1.38"-0.39" (35-10 mm)	1.97"/0.32" (50/8 mm)	5
HDCW-35/10-750	051138-48418	8-2/0 AWG	29.5" (750 mm)	1.38"-0.39" (35-10 mm)	1.97"/0.32" (50/8 mm)	5
HDCW-35/10-1000	051138-48419	8-2/0 AWG	39.4" (1000 mm)	1.38"-0.39" (35-10 mm)	1.97"/0.32" (50/8 mm)	5
HDCW-35/10-1200	051138-48436	8-2/0 AWG	47.2" (1200 mm)	1.38"-0.39" (35-10 mm)	1.97"/0.32" (50/8 mm)	5
HDCW-55/15-250	051138-48420	3/0 AWG-400 kcmil	9.8" (250 mm)	2.17"-0.59" (55-15 mm)	2.95"/.51" (75/13 mm)	5
HDCW-55/15-500	051138-48421	3/0 AWG-400 kcmil	19.7" (500 mm)	2.17"-0.59" (55-15 mm)	2.95"/.51" (75/13 mm)	5
HDCW-55/15-750	051138-48422	3/0 AWG-400 kcmil	29.5" (750 mm)	2.17"-0.59" (55-15 mm)	2.95"/.51" (75/13 mm)	5
HDCW-55/15-1000	051138-48423	3/0 AWG-400 kcmil	39.4" (1000 mm)	2.17"-0.59" (55-15 mm)	2.95"/.51" (75/13 mm)	5
HDCW-55/15-1200	051138-48437	3/0 AWG-400 kcmil	47.2" (1200 mm)	2.17"-0.59" (55-15 mm)	2.95"/.51" (75/13 mm)	5
HDCW-80/25-250	051138-48424	500-1000 kcmil	9.8" (250 mm)	3.15"-0.98" (80-25 mm)	3.94"/0.91" (100/23 mm)	5
HDCW-80/25-500	051138-48425	500-1000 kcmil	19.7" (500 mm)	3.15"-0.98" (80-25 mm)	3.94"/0.91" (100/23 mm)	5
HDCW-80/25-750	051138-48426	500-1000 kcmil	29.5" (750 mm)	3.15"-0.98" (80-25 mm)	3.94"/0.91" (100/23 mm)	5
HDCW-80/25-1000	051138-48427	500-1000 kcmil	39.4" (1000 mm)	3.15"-0.98" (80-25 mm)	3.94"/0.91" (100/23 mm)	5
HDCW-80/25-1200	051138-48438	500-1000 kcmil	47.2" (1200 mm)	3.15"-0.98" (80-25 mm)	3.94"/0.91" (100/23 mm)	5
HDCW-110/30-500	051138-48429	1000-2000 kcmil	19.7" (500 mm)	4.33"-1.18" (110-30 mm)	5.20"/0.98" (132/25 mm)	5
HDCW-110/30-750	051138-48430	1000-2000 kcmil	29.5" (750 mm)	4.33"-1.18" (110-30 mm)	5.20"/0.98" (132/25 mm)	5
HDCW-110/30-1000	051138-48431	1000-2000 kcmil	39.4" (1000 mm)	4.33"-1.18" (110-30 mm)	5.20"/0.98" (132/25 mm)	5
HDCW-110/30-1200	051138-48439	1000-2000 kcmil	47.2" (1200 mm)	4.33"-1.18" (110-30 mm)	5.20"/0.98" (132/25 mm)	5
HDCW-140/40-1000	051138-48435	N/A	39.4" (1000 mm)	5.51"-1.57" (140-40 mm)	5.71"/1.26" (145/32 mm)	5
HDCW-140/40-1200	051138-48440	N/A	47.2" (1200 mm)	5.51"-1.57" (140-40 mm)	5.71"/1.26" (145/32 mm)	5

# Dual Wall (Adhesive-Lined)

The outer wall resists abrasion. The meltable inner wall keeps out moisture. These are just two of the many reasons why 3M™ Dual Wall Tubing and Adhesive (Dual Wall) is a smart pick when you need to protect components and equipment in high-moisture environments such as automotive and marine applications.



Section	Page
Dual Wall (Adhesive-Lined).....	402-408
3M™ Heat Shrink Tubing EPS-200.....	403-404
3M™ Heat Shrink Tubing EPS-300.....	404-405
3M™ Heat Shrink Tubing EPS-300 Tubing Kit.....	406
3M™ Heat Shrink Tubing EPS-400.....	407
3M™ Heat Shrink Tubing MW, Multiple Wall, Semi-Rigid Polyolefin.....	408

## Dual Wall (Adhesive-Lined)

## 3M™ Heat Shrink Tubing EPS-200

3M™ Heat Shrink Tubing EPS-200 is a 2:1 thin-wall tubing offering the advantages of integral adhesive-lined construction.

## Standard Sizes and Dimensions

Ordering Size in.	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Total Recovered Wall Thickness (Nominal)	Meltable Recovered Wall Thickness (Nominal)
	in.	(mm)	in.	(mm)	in.	(mm)
1/8	.125	(3,18)	.063	(1,60)	.027 (0,68)	.004 (0,10)
3/16	.187	(4,75)	.093	(2,36)	.027 (0,68)	.004 (0,10)
1/4	.250	(6,35)	.125	(3,18)	.030 (0,76)	.005 (0,13)
3/8	.375	(9,53)	.187	(4,75)	.031 (0,79)	.005 (0,13)
1/2	.500	(12,70)	.250	(6,35)	.032 (0,81)	.006 (0,15)
3/4	.750	(19,05)	.375	(9,53)	.037 (0,94)	.006 (0,15)
1	1.000	(25,40)	.500	(12,70)	.046 (1,17)	.008 (0,20)
1-1/2	1.500	(38,10)	.750	(19,05)	.049 (1,24)	.008 (0,20)
2	2.000	(50,80)	1.000	(25,40)	.060 (1,52)	.015 (0,38)

Note: Dimensions in inches are approximate.

Material	Polyolefin
Color	Black
Shrink Ratio	2:1
Operating Temperature	-67 to 230°F (-55 to 110°C)
Voltage	600 Volts Max.
Flame Retardant	No
RoHS 2011/65/EU	Yes
Specification	SAE-AMS-DTL-23053/4, Class 2

Agency Approvals



E-157227

Manufacturing Origin



Order No.	UPC	Size	Format	Expanded/Recovered I.D.	Case Qty.
EPS200-1/8-6"-Black-10-10 Pc Pks	051128-60057	1/8" (3,18 mm)	6" (152,4 mm) pieces	0.125"/0.063" (3,18/1,60 mm)	10/pk, 10 pks
EPS200-1/8-48"-Black-25 Pcs	051128-59719	1/8" (3,18 mm)	48" (1,22 m) sticks	0.125"/0.063" (3,18/1,60 mm)	25 pcs
EPS200-3/16-6"-Black-10-10 Pc Pks	051128-60059	3/16" (4,75 mm)	6" (152,4 mm) pieces	0.187"/0.093" (4,75/2,36 mm)	10/pk, 10 pks
EPS200-3/16-48"-Black-12 Pcs	051128-59720	3/16" (4,75 mm)	48" (1,22 m) sticks	0.187"/0.093" (4,75/2,36 mm)	12 pcs
EPS200-1/4-6"-Black-10-10 Pc Pks	051128-60056	1/4" (6,35 mm)	6" (152,4 mm) pieces	0.25"/0.125" (6,35/3,18 mm)	10/pk, 10 pks
EPS200-1/4-48"-Black-12 Pcs	051128-59721	1/4" (6,35 mm)	48" (1,22 m) sticks	0.25"/0.125" (6,35/3,18 mm)	12 pcs
EPS200-3/8-6"-Black-10-10 Pc Pks	051128-60061	3/8" (9,53 mm)	6" (152,4 mm) pieces	0.375"/0.187" (9,53/4,75 mm)	10/pk, 10 pks
EPS200-3/8-48"-Black-12 Pcs	051128-59722	3/8" (9,53 mm)	48" (1,22 m) sticks	0.375"/0.187" (9,53/4,75 mm)	12 pcs
EPS200-1/2-6"-Black-10-10 Pc Pks	051128-60055	1/2" (12,7 mm)	6" (152,4 mm) pieces	0.50"/0.25" (12,70/6,35 mm)	10/pk, 10 pks
EPS200-1/2-48"-Black-12 Pcs	051128-59723	1/2" (12,7 mm)	48" (1,22 m) sticks	0.50"/0.25" (12,70/6,35 mm)	12 pcs
EPS200-3/4-6"-Black-10-10 Pc Pks	051128-60060	3/4" (19,0 mm)	6" (152,4 mm) pieces	0.75"/0.375" (19,05/9,53 mm)	10/pk, 10 pks
EPS200-3/4-48"-Black-5 Pcs	051128-59724	3/4" (19,0 mm)	48" (1,22 m) sticks	0.75"/0.375" (19,05/9,53 mm)	5 pcs
EPS200-1-6"-Black-10-10 Pc Pks	051128-60058	1" (25,4 mm)	6" (152,4 mm) pieces	1.00"/0.50" (25,40/12,70 mm)	10/pk, 10 pks
EPS200-1-48"-Black-5 Pcs	051128-59725	1" (25,4 mm)	48" (1,22 m) sticks	1.00"/0.50" (25,40/12,70 mm)	5 pcs
EPS200-1 1/2-6"-Black-10-3 Pc Pks	051128-60130	1-1/2" (38,1 mm)	6" (152,4 mm) pieces	1.50"/0.75" (38,10/19,05 mm)	3/pk, 10 pks
EPS200-1 1/2-48"-Black-5 Pcs	051128-59726	1-1/2" (38,1 mm)	48" (1,22 m) sticks	1.50"/0.75" (38,10/19,05 mm)	5 pcs
EPS200-2-48"-Black-2 Pcs	051128-59727	2" (50,8 mm)	48" (1,22 m) sticks	2.00"/1.00" (50,80/25,40 mm)	2 pcs

## 3M™ Heat Shrink Tubing EPS-200 (continued)

## 3M™ Heat Shrink Tubing EPS-300

3M™ Heat Shrink Tubing EPS-300 is a thin-wall tubing offering the advantages of integral, dual wall construction. The tubing is made from flame-retardant, flexible polyolefin with an internal layer of special thermoplastic adhesive. The heat shrinkable outer wall is selectively irradiation cross-linked, while the adhesive maintains high flow and excellent adhesion characteristics. Standard color is black and standard length is six-inch (15,24 cm) cut pieces or four-foot (1,22 m) sticks. Additional sizes, colors and put-ups are available - please contact your 3M Electrical Products Sales Representative.

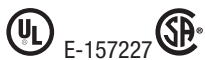
### Standard Sizes and Dimensions

Ordering Size in.	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Total Recovered Wall Thickness (Nominal)		Meltable Recovered Wall Thickness (Nominal)	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
1/8	.125	(3,18)	.040	(1,02)	.040	(1,02)	.020	(0,51)
3/16	.187	(4,75)	.062	(1,57)	.040	(1,02)	.020	(0,51)
1/4	.250	(6,35)	.080	(2,03)	.040	(1,02)	.020	(0,51)
3/8	.375	(9,53)	.120	(3,05)	.055	(1,40)	.025	(0,62)
1/2	.500	(12,70)	.160	(4,06)	.070	(1,78)	.030	(0,76)
3/4	.750	(19,05)	.250	(6,35)	.085	(2,16)	.035	(0,89)
1	1.000	(25,40)	.320	(8,13)	.100	(2,54)	.040	(1,02)
1-1/2	1.500	(38,10)	.510	(12,95)	.100	(2,54)	.040	(1,02)

Note: Dimensions in inches are approximate.

Material	Polyolefin
Shrink Ratio	3:1
Operating Temperature	-67 to 230°F (-55 to 110°C)
Voltage	600 Volts Max.
Flame Retardant	No
RoHS 2011/65/EU	Yes
Specification	ABS

Agency Approvals



Manufacturing Origin



Order No.	UPC	Size	Color	Format	Expanded/Recovered I.D.	Case Qty.
EPS300-1/8-6"-Black-10-10 Pc Pks	051128-60131	1/8" (3,18 mm)	Black	6" (152,4 mm) pieces	0.125"/0.040" (3,18/1,02 mm)	10/pk, 10 pks
EPS300-1/8-48"-Black-25 Pcs	051128-59770	1/8" (3,18 mm)	Black	48" (1,22 m) sticks	0.125"/0.040" (3,18/1,02 mm)	25
EPS300-1/8-48"-Black-250 Pcs	051128-59768	1/8" (3,18 mm)	Black	48" (1,22 m) sticks	0.125"/0.040" (3,18/1,02 mm)	250
EPS300-1/8-48"-Clear-250 Pcs	051128-59769	1/8" (3,18 mm)	Clear	48" (1,22 m) sticks	0.125"/0.040" (3,18/1,02 mm)	250
EPS300-1/8-48"-Black-Hdr-25 Pcs	051128-59789	1/8" (3,18 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	0.125"/0.040" (3,18/1,02 mm)	25
EPS300-3/16-6"-Black-10-10 Pc Pks	051128-60067	3/16" (4,75 mm)	Black	6" (152,4 mm) pieces	0.187"/0.062" (4,75/1,57 mm)	10/pk, 10 pks
EPS300-3/16-48"-Black-12 Pcs	051128-59728	3/16" (4,75 mm)	Black	48" (1,22 m) sticks	0.187"/0.062" (4,75/1,57 mm)	12
EPS300-3/16-48"-Black-250 Pcs	051128-59917	3/16" (4,75 mm)	Black	48" (1,22 m) sticks	0.187"/0.062" (4,75/1,57 mm)	250
EPS300-3/16-48"-Clear-250 Pcs	051128-59755	3/16" (4,75 mm)	Clear	48" (1,22 m) sticks	0.187"/0.062" (4,75/1,57 mm)	250
EPS300-3/16-48"-Black-Hdr-12 Pcs	051128-59790	3/16" (4,75 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	0.187"/0.062" (4,75/1,57 mm)	12
EPS300-1/4-6"-Black-10-10 Pc Pks	051128-60064	1/4" (6,35 mm)	Black	6" (152,4 mm) pieces	0.250"/0.080" (6,35/2,03 mm)	10/pk, 10 pks
EPS300-1/4-48"-Red-200 Pcs	051128-59766	1/4" (6,35 mm)	Red	48" (1,22 m) sticks	0.250"/0.080" (6,35/2,03 mm)	200





## 3M™ Heat Shrink Tubing EPS-300 (continued)

Order No.	UPC	Size	Color	Format	Expanded/Recovered I.D.	Case Qty.
EPS300-1/4-48"-Clear-200 Pcs	051128-59756	1/4" (6,35 mm)	Clear	48" (1,22 m) sticks	0.250"/0.080" (6,35/2,03 mm)	200
EPS300-1/4-48"-Black-200 Pcs	051128-59918	1/4" (6,35 mm)	Black	48" (1,22 m) sticks	0.250"/0.080" (6,35/2,03 mm)	200
EPS300-1/4-48"-Black-12 Pcs	051128-59729	1/4" (6,35 mm)	Black	48" (1,22 m) sticks	0.250"/0.080" (6,35/2,03 mm)	12
EPS300-1/4-48"-Black-Hdr-12 Pcs	051128-59791	1/4" (6,35 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	0.250"/0.080" (6,35/2,03 mm)	12
EPS300-3/8-6"-Black-10-10 Pc Pks	051128-60070	3/8" (9,53 mm)	Black	6" (152,4 mm) pieces	0.375"/0.120" (9,53/3,05 mm)	10/pk, 10 pks
EPS300-3/8-48"-Red-125 Pcs	051128-59767	3/8" (9,52 mm)	Red	48" (1,22 m) sticks	0.375"/0.120" (9,53/3,05 mm)	125
EPS300-3/8-48"-Clear-125 Pcs	051128-59757	3/8" (9,52 mm)	Clear	48" (1,22 m) sticks	0.375"/0.120" (9,53/3,05 mm)	125
EPS300-3/8-48"-Black-125 Pcs	051128-59919	3/8" (9,52 mm)	Black	48" (1,22 m) sticks	0.375"/0.120" (9,53/3,05 mm)	125
EPS300-3/8-48"-Black-12 Pcs	051128-59730	3/8" (9,52 mm)	Black	48" (1,22 m) sticks	0.375"/0.120" (9,53/3,05 mm)	12
EPS300-3/8-48"-Black-Hdr-12 Pcs	051128-59792	3/8" (9,52 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	0.375"/0.120" (9,53/3,05 mm)	12
EPS300-1/2-6"-Black-10-10 Pc Pks	051128-60062	1/2" (12,7 mm)	Black	6" (152,4 mm) pieces	0.50"/0.160" (12,70/4,06 mm)	10/pk, 10 pks
EPS300-1/2-6"-Red-10-10 Pc Pks	051128-60063	1/2" (12,7 mm)	Red	6" (152,4 mm) pieces	0.50"/0.160" (12,70/4,06 mm)	10/pk, 10 pks
EPS300-1/2-48"-Black-12 Pcs	051128-59731	1/2" (12,7 mm)	Black	48" (1,22 m) sticks	0.50"/0.160" (12,70/4,06 mm)	12
EPS300-1/2-48"-Black-75 Pcs	051128-59920	1/2" (12,7 mm)	Black	48" (1,22 m) sticks	0.50"/0.160" (12,70/4,06 mm)	75
EPS300-1/2-48"-Clear-75 Pcs	051128-59758	1/2" (12,7 mm)	Clear	48" (1,22 m) sticks	0.50"/0.160" (12,70/4,06 mm)	75
EPS300-1/2-48"-Red-75 Pcs	051128-59762	1/2" (12,7 mm)	Red	48" (1,22 m) sticks	0.50"/0.160" (12,70/4,06 mm)	75
EPS300-1/2-48"-Black-Hdr-12 Pcs	051128-59793	1/2" (12,7 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	0.50"/0.160" (12,70/4,06 mm)	12
EPS300-1/2-48"-Red-Hdr-12 Pcs	051128-59794	1/2" (12,7 mm)	Red	48" (1,22 m) sticks w/ Hdr Label	0.50"/0.160" (12,70/4,06 mm)	12
EPS300-3/4-6"-Black-10-10 Pc Pks	051128-60068	3/4" (19,0 mm)	Black	6" (152,4 mm) pieces	0.750"/0.250" (19,05/6,35 mm)	10/pk, 10 pks
EPS300-3/4-6"-Red-10-10 Pc Pks	051128-60069	3/4" (19,0 mm)	Red	6" (152,4 mm) pieces	0.750"/0.250" (19,05/6,35 mm)	10/pk, 10 pks
EPS300-3/4-48"-Black-5 Pcs	051128-59732	3/4" (19,0 mm)	Black	48" (1,22 m) sticks	0.750"/0.250" (19,05/6,35 mm)	5
EPS300-3/4-48"-Black-45 Pcs	051128-59921	3/4" (19,0 mm)	Black	48" (1,22 m) sticks	0.750"/0.250" (19,05/6,35 mm)	45
EPS300-3/4-48"-Clear-45 Pcs	051128-59759	3/4" (19,0 mm)	Clear	48" (1,22 m) sticks	0.750"/0.250" (19,05/6,35 mm)	45
EPS300-3/4-48"-Red-45 Pcs	051128-59763	3/4" (19,0 mm)	Red	48" (1,22 m) sticks	0.750"/0.250" (19,05/6,35 mm)	45
EPS300-3/4-48"-Black-Hdr-5 Pcs	051128-59795	3/4" (19,0 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	0.750"/0.250" (19,05/6,35 mm)	5
EPS300-3/4-48"-Red-Hdr-5 Pcs	051128-59796	3/4" (19,0 mm)	Red	48" (1,22 m) sticks w/ Hdr Label	0.750"/0.250" (19,05/6,35 mm)	5
EPS300-1-6"-Black-10-10 Pc Pks	051128-60065	1" (25,4 mm)	Black	6" (152,4 mm) pieces	1.00"/0.320" (25,40/8,13 mm)	10/pk, 10 pks
EPS300-1-6"-Red-10-10 Pc Pks	051128-60066	1" (25,4 mm)	Red	6" (152,4 mm) pieces	1.00"/0.320" (25,40/8,13 mm)	10/pk, 10 pks
EPS300-1-48"-Black-5 Pcs	051128-59733	1" (25,4 mm)	Black	48" (1,22 m) sticks	1.00"/0.320" (25,40/8,13 mm)	5
EPS300-1-48"-Black-24 Pcs	051128-59922	1" (25,4 mm)	Black	48" (1,22 m) sticks	1.00"/0.320" (25,40/8,13 mm)	24
EPS300-1-48"-Clear-24 Pcs	051128-59760	1" (25,4 mm)	Clear	48" (1,22 m) sticks	1.00"/0.320" (25,40/8,13 mm)	24
EPS300-1-48"-Red-24 Pcs	051128-59764	1" (25,4 mm)	Red	48" (1,22 m) sticks	1.00"/0.320" (25,40/8,13 mm)	24
EPS300-1-48"-Black-Hdr-5 Pcs	051128-59797	1" (25,4 mm)	Black	48" (1,22 m) sticks w/ Hdr Label	1.00"/0.320" (25,40/8,13 mm)	5
EPS300-1 1/2-48"-Black-5 Pcs	051128-59734	1-1/2" (38,1 mm)	Black	48" (1,22 m) sticks	1.50"/0.51" (38,10/12,95 mm)	5
EPS300-1 1/2-48"-Black-24 Pcs	051128-59923	1-1/2" (38,1 mm)	Black	48" (1,22 m) sticks	1.50"/0.51" (38,10/12,95 mm)	24
EPS300-1 1/2-48"-Clear-24 Pcs	051128-59761	1-1/2" (38,1 mm)	Clear	48" (1,22 m) sticks	1.50"/0.51" (38,10/12,95 mm)	24
EPS300-1 1/2-6"-Black-10-3 Pc Pks	051128-60129	1-1/2" (38,1 mm)	Black	6" (152,4 mm) pieces	1.50"/0.51" (38,10/12,95 mm)	3/pk, 10 pks

## Dual Wall (Adhesive-Lined)

### 3M™ Heat Shrink Tubing EPS-300 Tubing Kit

3M™ Heat Shrink Tubing EPS-300 is a thin-wall tubing offering the advantages of integral, dual wall construction. The tubing is made from flame-retardant, flexible polyolefin-lined with an internal layer of special thermoplastic adhesive. The heat shrinkable outer wall is selectively irradiation cross-linked, while the adhesive maintains high flow and excellent adhesion characteristics. Standard color is black and standard lengths are four-foot (1,22 m) sticks and six-inch (15,24 cm) cut pieces. Additional sizes, colors and put-ups are available - please contact your 3M Electrical Markets Sales Representative.

<b>Size</b>	1/2", 3/4", 1" (12,7, 19,05, 25,4 mm)
<b>Colors</b>	Black & Red
<b>Format</b>	6" (15,24 cm) pieces
<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	3:1
<b>Operating Temperature</b>	-67 to 230°F (-55 to 110°C)
<b>Voltage</b>	600 Volts Max.
<b>Flame Retardant</b>	No
<b>RoHS 2011/65/EU</b>	Yes
<b>Specification</b>	ABS
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	
<b>Packaging</b>	42 pieces/kit, 5 kits



Order No.	UPC	Contents	Expanded/Recovered I.D.	Size
EPS300-1/2 to 1-Black&Red-5-42 Pc Kits	051135- 38444	12-pcs EPS300-1/2-6"-Black	0.50"/0.16" (12,7/4,06 mm)	1/2" (12,7 mm)
		12-pcs EPS300-1/2-6"-Red	0.50"/0.16" (12,7/4,06 mm)	1/2" (12,7 mm)
		6-pcs EPS300-3/4-6"-Black	0.75"/0.25" (19,05/6,35 mm)	3/4" (19,05 mm)
		6-pcs EPS300-3/4-6"-Red	0.75"/0.25" (19,05/6,35 mm)	3/4" (19,05 mm)
		3-pcs EPS300-1-6"-Black	1.00"/0.32" (25,4/8,13 mm)	1" (25,4 mm)
		3-pcs EPS300-1-6"-Red	1.00"/0.32" (25,4/8,13 mm)	1" (25,4 mm)

## Dual Wall (Adhesive-Lined)

**3M™ Heat Shrink Tubing EPS-400**


3M™ Heat Shrink Tubing EPS-400 offers excellent environmental protection for electronic components, wire splices, wire bundles and harness breakouts. This tubing comes in a quantity of 48 feet per full carton.

3M Heat Shrink Tubing EPS-400 is a semi-rigid tubing offering the advantages of integral, adhesive-lined construction. The tubing is made from flame-retardant, flexible polyolefin with an internal layer of special thermoplastic adhesive. The heat shrinkable outer wall is selectively cross-linked, while the adhesive maintains high flow and excellent adhesion characteristics.

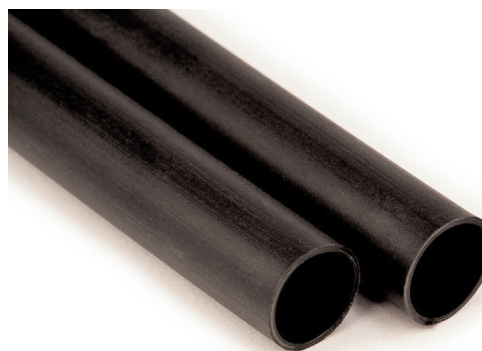
**Standard Sizes and Dimensions**

Ordering Size in.	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Recovered Melt Wall (Nominal)		Recovered Outer Wall (Minimum)	
	in.	(mm)	in.	(mm)	in.	(mm)	in.	(mm)
.300	.300	(7,62)	.060	(1,52)	.033	(0,84)	.028	(0,71)
.350	.350	(8,89)	.080	(2,03)	.038	(0,97)	.033	(0,84)
.450	.450	(11,43)	.105	(2,67)	.043	(1,09)	.053	(1,35)
.700	.700	(17,78)	.175	(4,45)	.060	(1,52)	.055	(1,40)

Note: Dimensions in inches are approximate.

<b>Material</b>	Polyolefin
<b>Color</b>	Black
<b>Shrink Ratio</b>	4:1
<b>Operating Temperature</b>	-67 to 230°F (-55 to 110°C)
<b>Voltage</b>	600 Volts Max.
<b>Flame Retardant</b>	No
<b>RoHS 2011/65/EU</b>	Yes
<b>Agency Approvals</b>	

Manufacturing Origin





Order No.	UPC	Size	Format	Case Qty.
EPS400-.300-6"-Black-10-10 Pc Pks	051128-60071	0.300"	6" (152,4 mm) pieces	10/pk, 10 pks
EPS400-.300-48"-Black-12 Pcs	051128-59735	0.300"	48" (1,22 m) sticks	12 pcs
EPS400-.350-6"-Black-10-10 Pc Pks	051128-60072	0.350"	6" (152,4 mm) pieces	10/pk, 10 pks
EPS400-.350-48"-Black-12 Pcs	051128-59736	0.350"	48" (1,22 m) sticks	12 pcs
EPS400-.450-6"-Black-10-10 Pc Pks	051128-60073	0.450"	6" (152,4 mm) pieces	10/pk, 10 pks
EPS400-.450-48"-Black-12 Pcs	051128-59737	0.450"	48" (1,22 m) sticks	12 pcs
EPS400-.700-6"-Black-10-10 Pc Pks	051128-60074	0.700"	6" (152,4 mm) pieces	10/pk, 10 pks
EPS400-.700-48"-Black-5 Pcs	051128-59738	0.700"	48" (1,22 m) sticks	5 pcs

## Dual Wall (Adhesive-Lined)

### 3M™ Heat Shrink Tubing MW, Multiple Wall, Semi-Rigid Polyolefin

3M™ Heat Shrink Tubing MW is a semi-rigid, heat shrinkable polyolefin tubing that is co-extruded and selectively cross-linked to provide an integral, meltable inner wall. When heated in excess of 275°F (135°C), the inner meltable wall of the tubing is simultaneously softened and forced by the shrink action into intimate contact with all underlying surfaces, interstices and small voids. Upon cooling, the MW tubing provides a tough protective and insulating barrier, highly resistant to penetration by moisture and the attack of chemicals and solvents. Uses include strain relief for delicate wire terminations, connections, solder joints and harness breakouts — where semi-rigid environmental protective sleeving and insulation is needed.

Standard color is black, and standard lengths are 4' (1,22 m) lengths and 6" (15,24 cm) cut pieces. Additional sizes, colors and put-ups are available — please contact your 3M Electrical Markets Sales Representative.

<b>Material</b>	Polyolefin
<b>Shrink Ratio</b>	2.5:1
<b>Operating Temperature</b>	-67 to 230°F (-55 to 110°C)
<b>Voltage</b>	600 Volts Max.
<b>Flame Retardant</b>	No
<b>RoHS 2011/65/EU</b>	Yes
<b>Specification</b>	SAE-AMS-DTL-23053/4, Class 1; AMS-3634
<b>Agency Approvals</b>	
<b>Manufacturing Origin</b>	



Order No.	UPC	Size	Color	Format	Expanded/Recovered I.D.	Case Qty.
MW-1/8-48"-Black-25 Pcs	051128-59712	1/8" (3,18 mm)	Black	48" (1,22 m) sticks	0.125"/0.023" (3,18/0,58 mm)	25
MW-3/16-48"-Black-12 Pcs	051128-59713	3/16" (4,75 mm)	Black	48" (1,22 m) sticks	0.187"/0.060" (4,75/1,52 mm)	12
MW-1/4-48"-Black-12 Pcs	051128-59714	1/4" (6,35 mm)	Black	48" (1,22 m) sticks	0.250"/0.080" (6,35/2,03 mm)	12
MW-3/8-48"-Black-12 Pcs	051128-59715	3/8" (9,53 mm)	Black	48" (1,22 m) sticks	0.375"/0.135" (9,53/3,43 mm)	12
MW-1/2-48"-Black-12 Pcs	051128-59716	1/2" (12,70 mm)	Black	48" (1,22 m) sticks	0.500"/0.195" (12,70/4,95 mm)	12
MW-3/4-48"-Black-5 Pcs	051128-59717	3/4" (19,05 mm)	Black	48" (1,22 m) sticks	0.750"/0.313" (19,05/7,95 mm)	5
MW-1-48"-Black-5 Pcs	051128-59718	1" (25,4 mm)	Black	48" (1,22 m) sticks	1.000"/0.400" (25,40/10,16 mm)	5

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели,  
кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



Телефон: 8 (812) 309-75-97 (многоканальный)

Факс: 8 (812) 320-03-32

Электронная почта: [ocean@oceanchips.ru](mailto:ocean@oceanchips.ru)

Web: <http://oceanchips.ru/>

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А