Thermo-Shrink® Thin-Wall Heat Shrinkable Tubing

- Polyolefin material electrically insulates and protects in-line components, disconnect terminals and splices with its high strength and excellent resilience
- Use to bundle wires for very flexible light-duty harnesses
- Highly flame-retardant and flexible; resistant to common fluids and solvents
- Meets UL 224, CSA 22.2 125˚C VW-1 600V; Material: No PBB's, PBBE's
- 2:1 shrink ratio; Minimum shrink temperature: 70˚C; Operating temperature: -55˚C to +125˚C
- RoHS compliant
- UV resistant

E236137 242540

Normal Size (in.)	Expanded I.D. (Min.)	Nominal Recovered I.D. (Max.)	Recovered Wall Thickness +/- 10%	Cable Range AWG*	Length (Pkg.)	Part No.
3/64	.047/1.2	0.024"/0.6mm	0.013"/0.33mm	22-18	4 ft. (Disk)	**46-600**
1/16	.063/1.6	0.031"/0.8mm	0.014"/0.36mm	16		**46-601**
3/32	.094/2.4	0.047"/1.2mm	0.017"/0.44mm	14-12		**46-602**
1/8	.126/3.2	0.063"/1.6mm	0.017"/0.44mm	24-20	6 in. (Bag)	**46-310**
					4 ft. (Disk)	**46-603**
3/16	.189/4.8	0.094"/2.4mm	0.020"/0.56mm	20-14	6 in. (Bag)	**46-313**
					4 ft. (Disk)	**46-604**
1/4	.251/6.4	0.126"/3.2mm	0.022"/0.56mm	14-8	6 in. (Bag)	**46-316**
					4 ft. (Disk)	**46-605**
					500 ft. (Spool)	**46-318**
5/16	.315/8.0	0.157"/4.0mm	0.022"/0.56mm	10-6	4 ft. (Disk)	**46-606**
3/8	.374/9.5	0.185"/4.7mm	0.022"/0.56mm	8-4	6 in. (Bag)	**46-319**
					4 ft. (Disk)	**46-607**
					200 ft. (Spool)	**46-321**
1/2	.5/12.7	0.252"/6.4mm	0.026"/0.65mm	4-1	6 in. (Bag)	**46-322**
					4 ft. (Disk)	**46-608**
					200 ft. (Spool)	**46-324**
3/4	.751/19.1	0.374"/9.5mm	0.027"/0.80mm	2-250 MCM	6 in. (Bag)	**46-325**
					4 ft. (Disk)	**46-609**
					200 ft. (Spool)	**46-327**
1	1/25.4	0.500"/12.7mm	0.031"/0.90mm	2/0-500 MCM	6 in. (Bag)	**46-328**
					4 ft. (Disk)	**46-610**
					100 ft. (Spool)	**46-330**

*Reference only - Consult the wire manufacturer's catalog for specific O.D. of wire and insulation.

Specifications

Property	Test Method	Typical Data
Tensile strength	ASTM D 638	14MPa
Elongation at break	ASTM D 638	600%
Elongation after aging at 175˚C for 168 hours	UL 224	350%
Flammability	UL 224 VW-1	Pass
Heat shock (250˚C/4 hours)	UL 224	No cracking
Cold bend test (-55˚C/4 hours)		No cracking
Dielectric strength	ASTM D 150	20KV/mm
Volume resistance	ASTM D 876	1014Ωcm
Copper corrosion	UL 224	Pass
Chemical resistance		Pass
Longitudinal shrinkage		0±5%
Eccentricity		30%

Thermo-Shrink® Heavy-Wall Heat Shrinkable Tubing

- TS-46 irradiated cross-linked polyolefin with 3:1 standard shrink ratio
- Adhesive liner provides complete insulation and protection to electrical splices in above-grade, underground or underwater applications
- Maximum flame retardant
- Meets UL 486D, CSA C22.2 No. 198.2, ANSI C119.1, Western Underground Guides Nos. 2.4, 2.5, MIL-DTL-23053/15, IEEE 383 Vertical Flame Test, ANSI C37.20.2, ICEA S-19-8 and NEMA insulation thickness requirements
- Rated for 600V, 90˚C continuous use

Model	Expanded I.D. (Min.) (In.)	Recovered I.D. (Max.) (In.)	Nominal Recovered Wall Thickness (In.)	Cable Range*	Length (In.)	Cat. No.
TS-46-400	.400	.130	.070	12-8 AWG	6	**46-343**
					9	**46-344**
					48	**46-346**
TS-46-750	.750	.220	.090	6-2/0 AWG	6	**46-347**
					9	**46-348**
					48	**46-350**
TS-46-1100	1.100	.350	.120	1/0-3/0 AWG	6	**46-351**
					9	**46-352**
					48	**46-354**
TS-46-1500	1.500	.470	.160	2/0 AWG-350 KCMIL	9	**46-356**
					12	**46-357**
					48	**46-358**
TS-46-2000	2.000	.630	.160	250-500 KCMIL	9	**46-369**
					18	**46-371**
					48	**46-372**

*Reference only. Consult the wire manufacturer's catalog for specific O.D. of wire and insulation.

LISTED

Specifications

Properties	Heavy Wall
Shrink Temperatures	120˚C to 250˚C (200˚C recommended)
Continuous Operating Temperature	-55˚C to 110˚C
Tensile Strength (PSI)	2,100 PSI min.
Ultimate Elongation	600% min.
Secant Modulus @ 2% Strain	25,000 PSI max.
Specific Gravity	1.20 max.
Heat Aging, 168 hrs. @ 175˚C Tensile Strength Elongation	500%
Heat Shock, 4 hrs. @ 225˚C	No cracks, flowing or dripping
Flammability	Flame retardant
Low Temperature Brittle Point	-55˚C
Volume Resistivity	1013ohm-cm min.
Dielectric Strength	500V/mil (20kV/min.)
Corrosive Effect	Non-corrosive
Solvent Resistance 24 hrs. Immersion per MIL-DTL-23053	Good to excellent
Water Absorption	0.2%
Fungus Resistance	No growth
Longitudinal Change, 3 min.	+1%/-10%

All values are typical performance data and are not to be used as design data.

Thermo-Shrink® Medium-Wall Heat Shrinkable Tubing End Caps

- Creates a watertight seal to protect ends of power and control cords
- Protects against oxidation, ozone, UV radiation, etc.
- Coated with hot melt adhesive to ensure environment seal
- Fits easily over end of cable
- Protect power cables up to 1000V and telecommunication cable
- Recommended for both open air and underground power distribution cables with PVC, lead or XLPE sheaths
- Thermally stabilized cross-linked polylefin, coated with specially designed hot melt adhesive
- UV resistant

Expanded I.D. (Min.)	Recovered I.D. (Max.)	Recovered Wall Thickness +/-10%	Cable Dia. Range*	Length	Part No.
0.55"/14mm	0.18"/4.5mm	0.079"/2.0mm	0.20"/5mm - 0.47"/12mm	1.77"/ 45mm	**46-381**
0.98"/25mm	0.31"/8mm	0.091"/2.3mm	0.39"/10mm - 0.71"/18mm	2.76"/ 70mm	**46-382**
1.38"/35mm	0.59"/15mm	0.118"/3.0mm	0.67"/17mm - 1.18"/30mm	3.35"/ 85mm	**46-383**
2.95"/75mm	1.38"/35mm	0.138"/3.5mm	1.77"/45mm - 2.76"/70mm	5.12"/ 130mm	**46-384**

*Consult the wire manufacturer's catalog for specific O.D. of wire and insulation.

Specifications

Property	Test Method	Typical Data
Operating Temperature	IEC 216	-55˚C to +110˚C
Tensile Strength	ASTM D 638	>14 MPa
Elongation at break	ASTM D 638	>400%
Density	ASTM D 792	1.05g/cm3
Elongation of break after again	150˚C, 168 hrs.	>300%
Dielectric strength	IEC 243	>15KV/mm
Volume resistance	IEC 93	1014Ωcm