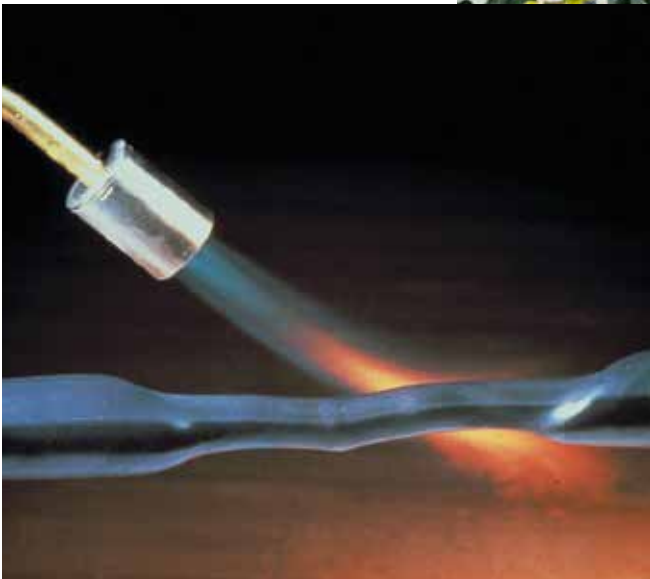


# 3M™ Heavy-Duty Tubing

- Abrasion and tear resistant
- Adhesive lined for environmental sealing
- Chemical and solvent resistant
- Flame retardant
- UV resistant



# 3M™ Heat Shrink Tubing MDT

## Medium-Duty, Polyolefin

### Product description

3M Heat Shrink Tubing MDT can offer increased flexibility in combination with excellent abrasion, corrosion and environmental resistance properties and data meets AMS-DTL-23053/15\*, Class 2.

Uncoated product (without sealant) is available on special order. 3M MDT medium-duty tubing is designed to provide reliable performance as well as excellent mechanical and environmental protection. These flame-retardant products combine the important advantages of easy handling and installation with maximum operating reliability and system protection. 3M MDT tubing comes with a factory-applied sealant. This sealant is a heat-activated

thermoplastic material that remains soft and 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. When cool, the sealant forms a barrier against water, moisture, dirt and other environmental contaminants.

### Typical applications

3M MDT tubing installs easily and has shrink ratios to accommodate effective insulating and sealing over large transitions, splices and battery cables.

### Standard color

All sizes available in black. 3M MDT-0400, -0800 and -1100 tubing are also available in red.

### Standard packaging

Four-foot lengths. Other lengths are available subject to special quotation.

### Ordering information

Order 3M MDT tubing by product name, size equivalent to the expanded inside diameter, package type and color. Always order the largest size that will shrink snugly over the component to be covered. *Example: MDT-1100-48A tubing, 4 ft., black.*

## Typical Properties

### Applicable Specification – SAE-AMS-DTL-23053/15,\*\* Class 2

#### Physical

Tensile Strength	2400 PSI
Ultimate Elongation	475%
Longitudinal Change	+1, -10%
Secant Modulus (2%)	14,000 PSI
Specific Gravity	1.28
*Heat Aging	7 days @ 175°C Elongation 225%
*Heat Shock (4 hrs. @ 225°C)	No dripping, cracking, flowing
*Low Temperature Flexibility (4 hrs. @ -55°C)	No cracking

#### Electrical

Dielectric Strength	500 V/mil (60 mils)
Volume Resistivity	10 <sup>14</sup> ohm-cm

#### Chemical

Corrosive Effect	Non-corrosive
Solvent Resistance	
Tensile Strength	1500 PSI
Dielectric Strength	400 V/mil
Water Absorption	0.2%
Fungus Resistance	Non-nutrient

Technical information provided consists of typical product data and should not be used for specification purposes. Unless otherwise noted, all tests are performed at room temperature.

\* Outer wall only.

\* Formerly MIL+23053/15 and MIL-DTL-23053/15

## Standard Sizes and Dimensions (without adhesive)

Part Number	Cable Range	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Recovered Outer Wall Thickness (Nominal)		Length in.	Std. Pkg. Pieces/ Carton	Color
		in.	(mm)	in.	(mm)	in.	(mm)			
MDT-0400-48A	#12 - #6 AWG	.40	(10,2)	.15	(3,8)	.09	(2,3)	48	20	Red and Black
MDT-0800-48A	#8 - #3 AWG	.80	(20,3)	.22	(5,6)	.10	(2,5)	48	20	Red and Black
MDT-1100-48A	#2 - 2/0 AWG	1.10	(27,9)	.37	(9,4)	.10	(2,5)	48	20	Red and Black
MDT-1300-48A	#1 - 4/0 AWG	1.30	(33,0)	.43	(10,9)	.10	(2,5)	48	15	Black Only
MDT-1500-48A	1/0 - 250 MCM	1.50	(38,1)	.50	(12,7)	.10	(2,5)	48	20	Black Only
MDT-1700-48A	4/0 - 400 MCM	1.70	(43,2)	.60	(15,2)	.10	(2,5)	48	20	Black Only
MDT-2000-48A	300 - 500 MCM	2.00	(50,8)	.75	(19,1)	.10	(2,5)	48	15	Black Only
MDT-3000-48A	600 - 1250 MCM	3.00	(76,2)	1.00	(25,4)	.12	(3,0)	48	15	Black Only
MDT-4300-48A	1000 - 2500 MCM	4.30	(109,2)	1.50	(38,1)	.15	(3,8)	48	10	Black Only

Note: Dimensions in inches are approximate.

# 3M™ Heat Shrink Tubing HDT

## Heavy-Duty, Polyolefin

### Product description

3M Heat Shrink Tubing HDT is designed to provide reliable performance as well as excellent mechanical and environmental protection. This flame-retardant product combines the important advantage of easy handling and installation with maximum operating reliability and system protection. 3M HDT tubing comes with a factory-applied sealant. This sealant is a heat-activated thermoplastic material that remains soft and 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. When cool, the sealant forms a barrier against water, moisture, dirt and other environmental contaminants.

Heavy-duty tubing is fabricated from specially formulated cross-linked polyolefin, providing long-term environmental protection. The tubing is also highly chemical, abrasion and split resistant. Meets AMS-DTL-23053/15\*\*, Class 1.

Uncoated product (without sealant) is available on special order.

### Standard color

All sizes available in black. 3M HDT-0300, -0400, -0800 and -1100 tubing are also available in red.

### Standard packaging

Four-foot lengths. Other lengths are available subject to special quotation.

### Ordering information

Order 3M HDT tubing by product name, size equivalent to the expanded inside diameter, package type and color. Always order the largest size that will shrink snugly over the component to be covered. *Example: HDT-1100-48A tubing, 4 ft., black.*

## Typical Properties

### Applicable Specification – SAE-AMS-DTL-23053/15\*\*, Class 1

#### Physical

Tensile Strength	2400 PSI
Ultimate Elongation	475%
Longitudinal Change	+1, -10%
Secant Modulus (2%)	14,000 PSI
Specific Gravity	1.28
*Heat Aging	7 days @ 175°C Elongation 225%
*Heat Shock (4 hrs. @ 225°C)	No dripping, cracking, flowing
*Low Temperature Flexibility (4 hrs. @ -55°C)	No cracking
Flammability	Self-extinguish

#### Electrical

Dielectric Strength	500 V/mil (60 mils)
Volume Resistivity	10 <sup>14</sup> ohm-cm

#### Chemical

Corrosive Effect	Non-corrosive
Solvent Resistance	
Tensile Strength	1500 PSI
Dielectric Strength	200 V/mil
Water Absorption	0.02%
Fungus Resistance	Non-nutrient

Technical information provided consists of typical product data and should not be used for specification purposes. Unless otherwise noted, all tests are performed at room temperature.

- \* Outer wall only.
- \* Formerly MIL+23053/15 and MIL-DTL-23053/15

## Standard Sizes and Dimensions (without adhesive)

Part Number	Cable Range	Expanded I.D. (Minimum)		Recovered I.D. (Maximum)		Recovered Outer Wall Thickness (Nominal)		Length in.	Std. Pkg. Pieces/ Carton	Color
		in.	(mm)	in.	(mm)	in.	(mm)			
HDT-0300-48A	#14-#8 AWG	.30	(7,62)	.10	(2,5)	.08	(2,0)	48	20	Red and Black
HDT-0400-48A	#12 - #6 AWG	.40	(10,2)	.15	(3,8)	.09	(2,3)	48	20	Red and Black
HDT-0800-48A	#8 - 1/0 AWG	.80	(20,3)	.20	(5,1)	.11	(2,8)	48	20	Red and Black
HDT-1100-48A	#2 - 4/0 AWG	1.10	(27,9)	.37	(9,4)	.12	(3,0)	48	20	Red and Black
HDT-1500-48A	3/0 - 400 MCM	1.50	(38,1)	.50	(12,7)	.17	(4,3)	48	20	Black Only
HDT-2000-48A	250 - 750 MCM	2.00	(50,8)	.65	(16,5)	.17	(4,3)	48	10	Black Only
HDT-3000-48A	600 - 1250 MCM	3.00	(76,2)	1.00	(25,4)	.17	(4,3)	48	10	Black Only
HDT-4500-48A	1500 - 2500 MCM	4.50	(114,3)	1.50	(38,1)	.17	(4,3)	48	5	Black Only
HDT-6000-48A	2.1" - 4.8" O. D.	6.00	(152,4)	1.80	(45,7)	.17	(4,3)	48	5	Black Only
HDT-7000-48A	2.5" - 5.6" O. D.	7.00	(177,8)	2.00	(50,8)	.17	(4,3)	48	5	Black Only

Note: Dimensions in inches are approximate.