

## M22759 wire

**M22759 (SAE AS22759)** wires are high-performance, medium and high-temperature hookup wires with extruded PTFE or ETFE, or PTFE/polyimide tape insulators, and stranded conductors.

These wires are designed for severe-environment aerospace applications, such as engine controls and SWAMP areas. Some types are available with highly abrasion-resistant insulation and / or high-strength conductors for maximum performance under mechanical stresses.

Wire types with PTFE tape insulation are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details and part numbers).

### Construction characteristics—M22759 wires

M22759 Slant Sheet	Insulation Material	Conductor Plating	Temperature Rating	Voltage Rating	Page
MIL-W-22759/5	Extruded mineral-filled PTFE*	Silver	200	600	37
MIL-W-22759/6	Extruded mineral-filled PTFE*	Nickel	260	600	37
MIL-W-22759/7	Extruded mineral-filled PTFE (light weight)*	Silver	200	600	38
MIL-W-22759/8	Extruded mineral-filled PTFE (light weight)*	Nickel	260	600	38
MIL-W-22759/9	Extruded PTFE	Silver	200	1000	39
MIL-W-22759/10	Extruded PTFE	Nickel	260	1000	39
MIL-W-22759/11	Extruded PTFE (medium weight)	Silver	200	600	40
MIL-W-22759/12	Extruded PTFE (medium weight)	Nickel	260	600	40
MIL-W-22759/16	Extruded ETFE	Tin	150	600	41
MIL-W-22759/17	Extruded ETFE	Silver	150	600	41
MIL-W-22759/18	Extruded ETFE (light weight)	Tin	150	600	42
MIL-W-22759/19	Extruded ETFE (light weight)	Silver	150	600	42
MIL-W-22759/20	Extruded PTFE	Silver***	200	1000	43
MIL-W-22759/21	Extruded PTFE	Nickel***	260	1000	43
MIL-W-22759/22	Extruded PTFE (light weight)	Silver***	200	600	44
MIL-W-22759/23	Extruded PTFE (light weight)	Nickel***	260	600	44
MIL-W-22759/28	Extruded PTFE with polyimide hardcoat*	Silver	200	600	45
MIL-W-22759/29	Extruded PTFE with polyimide hardcoat*	Nickel	260	600	45
MIL-W-22759/30	Extruded PTFE with polyimide hardcoat*	Silver***	200	600	46
MIL-W-22759/31	Extruded PTFE with polyimide hardcoat*	Nickel***	260	600	46
MIL-DTL-22759/80	PTFE/polyimide/PTFE tape and PTFE tape (light weight)**	Tin	150	600	47
MIL-DTL-22759/81	PTFE/polyimide/PTFE tape and PTFE tape (light weight)**	Silver***	200	600	47
MIL-DTL-22759/82	PTFE/polyimide/PTFE tape and PTFE tape (light weight)**	Nickel***	260	600	47
MIL-DTL-22759/83	PTFE/polyimide/PTFE tape and PTFE tape**	Silver	200	600	48
MIL-DTL-22759/84	PTFE/polyimide/PTFE tape and PTFE tape**	Nickel	260	600	48
MIL-DTL-22759/85	PTFE/polyimide/PTFE tape and PTFE tape**	Tin	150	600	48
MIL-DTL-22759/86	PTFE/polyimide/PTFE tape and PTFE tape**	Silver	200	600	49
MIL-DTL-22759/87	PTFE/polyimide/PTFE tape and PTFE tape**	Nickel	260	600	50
MIL-DTL-22759/88	PTFE/polyimide/PTFE tape and PTFE tape**	Tin	150	600	51
MIL-DTL-22759/89	PTFE/polyimide/PTFE tape and PTFE tape**	Silver***	200	600	52
MIL-DTL-22759/90	PTFE/polyimide/PTFE tape and PTFE tape**	Nickel***	260	600	52
MIL-DTL-22759/91	PTFE/polyimide/PTFE tape and PTFE tape (light weight)**	Silver	200	600	53
MIL-DTL-22759/92	PTFE/polyimide/PTFE tape and PTFE tape (light weight)**	Nickel	260	600	53

Temperature in °C. • \*High abrasion resistance. • \*\* Available with **Seamless Wrap** PTFE tape outer insulation.

\*\*\* High-strength and ultra-high-strength copper alloy conductors.

### M22759 color coding

Color coding for M22759 wires consists of up to four numbers added to designate wire color and up to three spiral stripe colors.

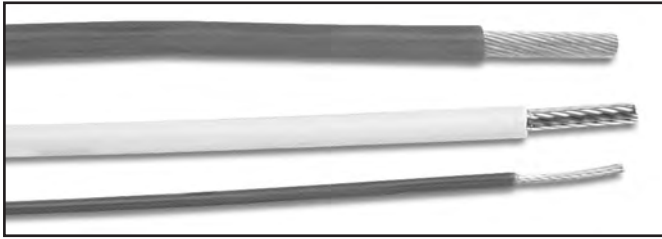
Example: M22759/8-**9045** is a white wire with black, yellow, and green stripes.

Number	0	1	2	3	4	5	6	7	8	9
Color	Black	Brown	Red	Orange	Yellow	Green	Blue	Violet	Gray	White

### MIL-DTL-22759 identification

M22759 wires are surface printed with the MIL part number and manufacturer's CAGE code (FSCM number).

## MIL-W-22759/5, /6 wire—mineral-filled PTFE insula



### Construction Details

**Insulation:** Extruded PTFE with abrasion-resistant mineral fillers.

**Conductor:** /5: Silver-plated copper;  
/6: Nickel-plated copper.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

**MIL-W-22759/5 and /6** wires have mineral-filled PTFE insulation for high-temperature application such as aircraft engines, SWAMP zones, and other where increased abrasion resistance is required.

For reduced-weight versions of these wires, see M22759/7 and /8 (following page).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /5: -55 to 200° C  
/6: -55 to 260° C

### Dimensions, Resistance, and Weights—M22759/5 (silver-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/5-8-*	8	133/29	.162 (4.11)	.241 (6.12)	.255 (6.48)	77.0 (115)	.658 (2.16)	8-AF3XT-13
M22759/5-10-*	10	37/26	.108 (2.74)	.172 (4.37)	.186 (4.73)	42.5 (63.3)	1.19 (3.90)	10-AF3XT-37
M22759/5-12-*	12	19/25	.086 (2.18)	.153 (3.89)	.167 (4.24)	30.9 (46.0)	1.81 (5.94)	12-AF3XT-19
M22759/5-14-*	14	19/27	.067 (1.70)	.136 (3.45)	.150 (3.81)	22.5 (33.5)	2.88 (9.45)	14-AF3XT-19
M22759/5-16-*	16	19/29	.053 (1.35)	.120 (3.05)	.130 (3.30)	16.6 (24.7)	4.52 (14.8)	16-AF3XT-19
M22759/5-18-*	18	19/30	.047 (1.19)	.105 (2.67)	.115 (2.92)	12.9 (19.2)	5.79 (19.0)	18-AF3XT-19
M22759/5-20-*	20	19/32	.038 (.97)	.090 (2.29)	.100 (2.54)	9.07 (13.6)	9.19 (30.1)	20-AF3XT-19
M22759/5-22-*	22	19/34	.030 (.76)	.080 (2.03)	.090 (2.29)	6.83 (10.1)	15.1 (49.5)	22-AF3XT-19
M22759/5-24-*	24	19/36	.024 (.61)	.070 (1.78)	.080 (2.03)	5.08 (7.60)	24.3 (79.7)	24-AF3XT-19

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/6 (nickel-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/6-8-*	8	133/29	.163 (4.14)	.241 (6.12)	.255 (6.48)	79.0 (118)	.694 (2.28)	8-AF3XTN-1
M22759/6-10-*	10	37/26	.109 (2.77)	.172 (4.37)	.186 (4.73)	43.5 (64.8)	1.24 (4.07)	10-AF3XTN-3
M22759/6-12-*	12	19/25	.086 (2.18)	.153 (3.89)	.167 (4.24)	31.9 (47.5)	1.89 (6.20)	12-AF3XTN-1
M22759/6-14-*	14	19/27	.067 (1.70)	.136 (3.45)	.150 (3.81)	23.3 (34.7)	3.00 (9.84)	14-AF3XTN-1
M22759/6-16-*	16	19/29	.053 (1.35)	.120 (3.05)	.130 (3.30)	16.9 (25.2)	4.76 (15.6)	16-AF3XTN-1
M22759/6-18-*	18	19/30	.047 (1.19)	.105 (2.67)	.115 (2.92)	13.1 (19.5)	6.10 (20.0)	18-AF3XTN-1
M22759/6-20-*	20	19/32	.038 (.97)	.090 (2.29)	.100 (2.54)	9.27 (13.9)	9.77 (32.1)	20-AF3XTN-1
M22759/6-22-*	22	19/34	.030 (.76)	.080 (2.03)	.090 (2.29)	6.98 (10.4)	16.0 (52.5)	22-AF3XTN-1
M22759/6-24-*	24	19/36	.024 (.61)	.070 (1.78)	.080 (2.03)	5.18 (7.70)	25.9 (85.0)	24-AF3XTN-1

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

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## MIL-W-22759/7, /8 wire—mineral-filled PTFE insulation—medium wall

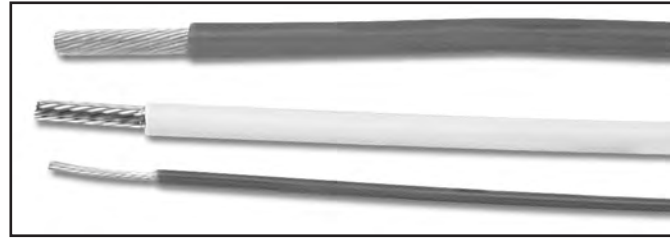
**MIL-W-22759/7 and /8** wires have reduced weight, mineral-filled PTFE insulation for high-temperature applications such as aircraft engines, SWAMP zones, and others where increased abrasion resistance is required. These wires are reduced-weight versions of MIL-W-22759/5 and /6.

See page 68 for a selection of M27500 shielded and jacketed cables incorporating these wires.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /7: -55 to 200° C  
/8: -55 to 260° C



### Construction Details

**Insulation:** Extruded PTFE with abrasion-resistant mineral fillers.

**Conductor:** /7: Silver-plated copper;  
/8: Nickel-plated copper.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

### Dimensions, Resistance, and Weights—M22759/7 (silver-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/7-8-*	8	133/29	.162 (4.11)	.215 (5.46)	.225 (5.72)	67.6 (101)	.658 (2.16)	8-AF2XT-13329
M22759/7-10-*	10	37/26	.108 (2.74)	.154 (3.91)	.162 (4.11)	37.4 (55.7)	1.19 (3.90)	10-AF2XT-3726
M22759/7-12-*	12	19/25	.086 (2.18)	.131 (3.33)	.137 (3.48)	25.7 (38.3)	1.81 (5.94)	12-AF2XT-1925
M22759/7-14-*	14	19/27	.067 (1.70)	.112 (2.84)	.118 (3.00)	17.3 (25.8)	2.88 (9.45)	14-AF2XT-1927
M22759/7-16-*	16	19/29	.053 (1.35)	.099 (2.51)	.105 (2.67)	12.7 (18.9)	4.52 (14.8)	16-AF2XT-1929
M22759/7-18-*	18	19/30	.047 (1.19)	.090 (2.29)	.094 (2.39)	10.2 (15.2)	5.79 (19.0)	18-AF2XT-1930
M22759/7-20-*	20	19/32	.038 (.97)	.080 (2.03)	.084 (2.13)	7.30 (10.9)	9.19 (30.1)	20-AF2XT-1932
M22759/7-22-*	22	19/34	.030 (.76)	.071 (1.80)	.075 (1.91)	5.00 (7.44)	15.1 (49.5)	22-AF2XT-1934
M22759/7-24-*	24	19/36	.024 (.61)	.060 (1.52)	.064 (1.63)	3.70 (5.51)	24.3 (79.7)	24-AF2XT-1936

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/8 (nickel-plated conductor)

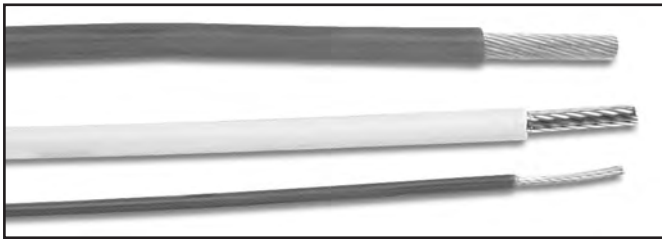
M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/8-8-*	8	133/29	.163 (4.14)	.215 (5.46)	.225 (5.72)	69.6 (104)	.694 (2.28)	8-AF2XTN-13329
M22759/8-10-*	10	37/26	.109 (2.77)	.154 (3.91)	.162 (4.11)	38.4 (57.2)	1.24 (4.07)	10-AF2XTN-3726
M22759/8-12-*	12	19/25	.086 (2.18)	.131 (3.33)	.137 (3.48)	28.7 (42.8)	1.89 (6.20)	12-AF2XTN-1925
M22759/8-14-*	14	19/27	.067 (1.70)	.112 (2.84)	.118 (3.00)	18.1 (27.0)	3.00 (9.84)	14-AF2XTN-1927
M22759/8-16-*	16	19/29	.053 (1.35)	.099 (2.51)	.105 (2.67)	13.0 (19.4)	4.76 (15.6)	16-AF2XTN-1929
M22759/8-18-*	18	19/30	.047 (1.19)	.090 (2.29)	.094 (2.39)	10.4 (15.5)	6.10 (20.0)	18-AF2XTN-1930
M22759/8-20-*	20	19/32	.038 (.97)	.080 (2.03)	.084 (2.13)	7.50 (11.2)	9.77 (32.1)	20-AF2XTN-1932
M22759/8-22-*	22	19/34	.030 (.76)	.071 (1.80)	.075 (1.91)	5.15 (7.66)	16.0 (52.5)	22-AF2XTN-1934
M22759/8-24-*	24	19/36	.024 (.61)	.060 (1.52)	.064 (1.63)	3.80 (5.66)	25.9 (85.0)	24-AF2XTN-1936

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

# MIL-W-22759/9, /10 wire—extruded PTFE insula



## Construction Details

**Insulation:** Extruded PTFE.

**Conductor:** /9: Silver-plated copper;  
/10: Nickel-plated copper.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

**MIL-W-22759/9 and /10** wires have extruded PTFE insulation for high-temperature applications where the additional abrasion resistance of mineral-filled PTFE insulation is not required. These wires are especially well-suited in applications where smoke emission, overload stability, and flammability are major concerns.

For versions of these wires with thinner-wall insulation and 600V voltage rating, see M22759/11 and /12 (following page).

## Performance:

**Voltage rating:** 1,000V.

**Temperature rating:** /9: -55 to 200° C  
/10: -55 to 260° C

## Dimensions, Resistance, and Weights—M22759/9 (silver-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/9-8-*	8	133/29	.162 (4.11)	.202 (5.13)	.212 (5.38)	65.4 (97.3)	.658 (2.16)	8-AXT-133
M22759/9-10-*	10	37/26	.108 (2.74)	.137 (3.48)	.145 (3.68)	35.3 (52.5)	1.19 (3.90)	10-AXT-372
M22759/9-12-*	12	19/25	.086 (2.18)	.116 (2.95)	.124 (3.15)	23.3 (34.7)	1.81 (5.94)	12-AXT-192
M22759/9-14-*	14	19/27	.067 (1.70)	.097 (2.46)	.103 (2.62)	16.1 (24.0)	2.88 (9.45)	14-AXT-192
M22759/9-16-*	16	19/29	.053 (1.35)	.083 (2.11)	.087 (2.21)	10.6 (15.8)	4.52 (14.8)	16-AXT-192
M22759/9-18-*	18	19/30	.047 (1.19)	.076 (1.93)	.080 (2.03)	8.68 (12.9)	5.79 (19.0)	18-AXT-193
M22759/9-20-*	20	19/32	.038 (.97)	.066 (1.68)	.070 (1.78)	6.09 (9.06)	9.19 (30.1)	20-AXT-193
M22759/9-22-*	22	19/34	.030 (.76)	.058 (1.47)	.062 (1.57)	4.30 (6.40)	15.1 (49.5)	22-AXT-193
M22759/9-24-*	24	19/36	.024 (.61)	.051 (1.30)	.055 (1.40)	3.13 (4.66)	24.3 (79.7)	24-AXT-193
M22759/9-26-*	26	19/38	.019 (.48)	.046 (1.17)	.050 (1.27)	2.38 (3.54)	38.4 (126)	26-AXT-193
M22759/9-28-*	28	7/36	.015 (.38)	.041 (1.04)	.045 (1.14)	1.78 (2.65)	63.8 (209)	28-AXT-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

## Dimensions, Resistance, and Weights—M22759/10 (nickel-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/10-8-*	8	133/29	.163 (4.14)	.202 (5.13)	.212 (5.38)	66.4 (98.8)	.694 (2.28)	8-AXTN-133
M22759/10-10-*	10	37/26	.109 (2.77)	.137 (3.48)	.145 (3.68)	35.9 (53.4)	1.24 (4.07)	10-AXTN-372
M22759/10-12-*	12	19/25	.086 (2.18)	.116 (2.95)	.124 (3.15)	23.4 (34.8)	1.89 (6.20)	12-AXTN-192
M22759/10-14-*	14	19/27	.067 (1.70)	.097 (2.46)	.103 (2.62)	16.2 (24.1)	3.00 (9.84)	14-AXTN-192
M22759/10-16-*	16	19/29	.053 (1.35)	.083 (2.11)	.087 (2.21)	10.8 (16.1)	4.76 (15.6)	16-AXTN-192
M22759/10-18-*	18	19/30	.047 (1.19)	.076 (1.93)	.080 (2.03)	8.78 (12.9)	6.10 (20.0)	18-AXTN-192
M22759/10-20-*	20	19/32	.038 (.97)	.066 (1.68)	.070 (1.78)	6.09 (9.06)	9.77 (32.0)	20-AXTN-192
M22759/10-22-*	22	19/34	.030 (.76)	.058 (1.47)	.062 (1.57)	4.30 (6.40)	16.0 (52.5)	22-AXTN-192
M22759/10-24-*	24	19/36	.024 (.61)	.051 (1.30)	.055 (1.40)	3.13 (4.66)	25.9 (85.0)	24-AXTN-192
M22759/10-26-*	26	19/38	.019 (.48)	.046 (1.17)	.050 (1.27)	2.38 (3.54)	42.2 (138)	26-AXTN-192
M22759/10-28-*	28	7/36	.015 (.38)	.041 (1.04)	.045 (1.14)	1.78 (2.65)	67.9 (223)	28-AXTN-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

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## MIL-W-22759/11, /12 wire—extruded PTFE insulation

**MIL-W-22759/11 and /12** wires have extruded PTFE insulation for high-temperature applications where the additional abrasion resistance of mineral-filled PTFE insulation is not required. These wires are especially well-suited in applications where smoke emission, overload stability, and flammability are major concerns.

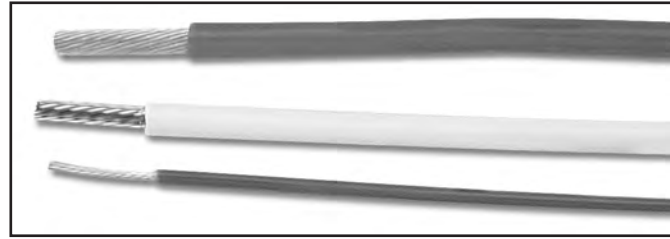
These wires are similar to MIL-W-22759/9 and /10 wires, but have a thinner-wall insulation and 600V voltage rating.

See page 69 for a selection of M27500 shielded and jacketed cables incorporating these wires.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /11: -55 to 200° C  
/12: -55 to 260° C



### Construction Details

**Insulation:** Thin-wall extruded PTFE.

**Conductor:** /11: Silver-plated copper;  
/12: Nickel-plated copper.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

### Dimensions, Resistance, and Weights—M22759/11 (silver-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/11-8-*	8	133/29	.162 (4.11)	.198 (5.03)	.206 (5.23)	57.8 (86.1)	.658 (2.16)	8-ATE-13329
M22759/11-10-*	10	37/26	.108 (2.74)	.135 (3.43)	.143 (3.63)	34.9 (52.0)	1.19 (3.90)	10-ATE-3726
M22759/11-12-*	12	19/25	.086 (2.18)	.108 (2.74)	.114 (2.90)	23.5 (35.0)	1.81 (5.94)	12-ATE-1925
M22759/11-14-*	14	19/27	.067 (1.70)	.088 (2.24)	.092 (2.34)	14.7 (21.9)	2.88 (9.45)	14-ATE-1927
M22759/11-16-*	16	19/29	.053 (1.35)	.073 (1.85)	.077 (1.96)	9.64 (14.3)	4.52 (14.8)	16-ATE-1929
M22759/11-18-*	18	19/30	.047 (1.19)	.066 (1.68)	.070 (1.78)	7.58 (11.3)	5.79 (19.0)	18-ATE-1930
M22759/11-20-*	20	19/32	.038 (.97)	.056 (1.42)	.060 (1.52)	5.15 (7.66)	9.19 (30.1)	20-ATE-1932
M22759/11-22-*	22	19/34	.030 (.76)	.047 (1.19)	.051 (1.30)	3.44 (5.12)	15.1 (49.5)	22-ATE-1934
M22759/11-24-*	24	19/36	.024 (.61)	.041 (1.04)	.045 (1.14)	2.44 (3.59)	24.3 (79.7)	24-ATE-1936
M22759/11-26-*	26	19/38	.019 (.48)	.036 (.91)	.040 (1.02)	1.74 (2.59)	38.4 (126)	26-ATE-1938
M22759/11-28-*	28	7/36	.015 (.38)	.031 (.79)	.035 (.89)	1.22 (1.82)	63.8 (209)	28-ATE-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated. \* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/12 (nickel-plated conductor)

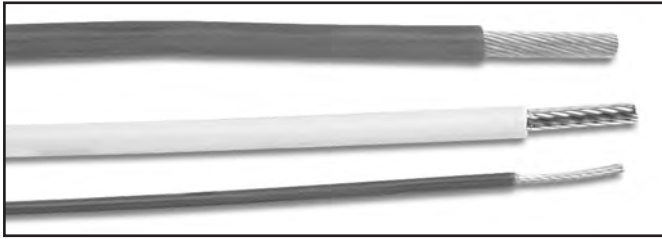
M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/12-8-*	8	133/29	.163 (4.14)	.200 (5.08)	.208 (5.28)	58.8 (87.5)	.694 (2.28)	8-ATEN-13329
M22759/12-10-*	10	37/26	.109 (2.77)	.135 (3.43)	.143 (3.63)	35.5 (52.8)	1.24 (4.07)	10-ATEN-3726
M22759/12-12-*	12	19/25	.086 (2.18)	.108 (2.74)	.114 (2.90)	24.0 (35.7)	1.89 (6.20)	12-ATEN-1925
M22759/12-14-*	14	19/27	.067 (1.70)	.088 (2.24)	.092 (2.34)	14.8 (22.0)	3.00 (9.84)	14-ATEN-1927
M22759/12-16-*	16	19/29	.053 (1.35)	.073 (1.85)	.077 (1.96)	9.74 (14.5)	4.76 (15.6)	16-ATEN-1929
M22759/12-18-*	18	19/30	.047 (1.19)	.066 (1.68)	.070 (1.78)	7.64 (11.4)	6.10 (20.0)	18-ATEN-1930
M22759/12-20-*	20	19/32	.038 (.97)	.056 (1.42)	.060 (1.52)	5.19 (7.72)	9.77 (32.0)	20-ATEN-1932
M22759/12-22-*	22	19/34	.030 (.76)	.047 (1.19)	.051 (1.30)	3.46 (5.15)	16.0 (52.5)	22-ATEN-1934
M22759/12-24-*	24	19/36	.024 (.61)	.041 (1.04)	.045 (1.14)	2.42 (3.60)	25.9 (85.0)	24-ATEN-1936
M22759/12-26-*	26	19/38	.019 (.48)	.036 (.914)	.040 (1.02)	1.75 (2.60)	42.2 (138)	26-ATEN-1938
M22759/12-28-*	28	7/36	.015 (.38)	.031 (.79)	.035 (.89)	1.23 (1.83)	67.9 (223)	28-ATEN-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated. \* Add color coding per MIL-STD-104 (see page 36).



## MIL-W-22759/16, /17 wire—extruded ETFE insula



### Construction Details

**Insulation:** Extruded ETFE.

**Conductor:** /16: Tin-plated copper;  
/17: Silver-plated, high strength copper alloy.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

MIL-W-22759/16 and /17 wires have extruded ETFE insulation for aerospace and other applications requiring light weight, tight diameter tolerances, enhanced mechanical toughness.

ETFE insulation also provides exceptional resistance to radiation and chemicals.

For versions of these wires with thinner-wall insulation for light weight, see M22759/18 and /19 (following page).

See page 70 for a selection of M27500 shielded and jacketed cables incorporating these wires.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /16, /17: -55 to 150° C

### Dimensions, Resistance, and Weights—M22759/16 (tin-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/16-02-*	2/0	1330/30	.460 (11.7)	.539 (13.7)	.553 (14.0)	485 (722)	.091 (.299)	2/0-ACFZ-1330
M22759/16-01-*	1/0	1045/30	.412 (10.5)	.473 (12.0)	.485 (12.3)	380 (566)	.126 (.380)	1/0-ACFZ-1045
M22759/16-1-*	1	817/30	.370 (9.40)	.426 (10.8)	.436 (11.1)	293 (437)	.149 (.489)	1-ACFZ-817
M22759/16-2-*	2	665/30	.330 (8.38)	.384 (9.75)	.392 (9.96)	231 (344)	.183 (.600)	2-ACFZ-665
M22759/16-4-*	4	133/25	.260 (6.60)	.308 (7.82)	.316 (8.03)	152 (227)	.280 (.916)	4-ACFZ-133
M22759/16-6-*	6	133/27	.202 (5.13)	.247 (6.27)	.253 (6.43)	96.9 (144)	.445 (1.46)	6-ACFZ-133
M22759/16-8-*	8	133/29	.162 (4.11)	.196 (4.98)	.202 (5.13)	61.5 (91.5)	.701 (2.30)	8-ACFZ-133
M22759/16-10-*	10	37/26	.110 (2.79)	.136 (3.45)	.142 (3.61)	34.0 (50.6)	1.26 (4.13)	10-ACFZ-372
M22759/16-12-*	12	37/28	.086 (2.18)	.111 (2.82)	.117 (2.97)	21.8 (32.4)	2.02 (6.63)	12-ACFZ-372
M22759/16-14-*	14	19/27	.067 (1.70)	.091 (2.31)	.095 (2.41)	14.5 (21.6)	3.06 (10.0)	14-ACFZ-192
M22759/16-16-*	16	19/29	.053 (1.35)	.077 (1.96)	.081 (2.06)	9.68 (14.4)	4.81 (15.8)	16-ACFZ-192
M22759/16-18-*	18	19/30	.048 (1.22)	.069 (1.75)	.073 (1.85)	7.65 (11.4)	6.23 (20.4)	18-ACFZ-193
M22759/16-20-*	20	19/32	.038 (.97)	.058 (1.47)	.062 (1.57)	5.18 (7.71)	9.88 (32.4)	20-ACFZ-193
M22759/16-22-*	22	19/34	.030 (.76)	.050 (1.27)	.054 (1.37)	3.52 (5.24)	16.2 (53.1)	22-ACFZ-193
M22759/16-24-*	24	19/36	.024 (.61)	.043 (1.09)	.047 (1.19)	2.45 (3.65)	26.2 (85.9)	24-ACFZ-193

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/17 (silver-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/17-20-*	20	19/32	.038 (.97)	.058 (1.47)	.062 (1.57)	4.96 (7.38)	10.7 (35.1)	58.1 (26.4)	20-ACFTF-19
M22759/17-22-*	22	19/34	.030 (.76)	.050 (1.27)	.054 (1.37)	3.40 (5.06)	17.5 (57.4)	35.8 (16.2)	22-ACFTF-19
M22759/17-24-*	24	19/36	.024 (.61)	.043 (1.09)	.047 (1.19)	2.32 (3.45)	28.4 (93.2)	22.4 (10.2)	24-ACFTF-19
M22759/17-26-*	26	19/38	.019 (.48)	.038 (.97)	.042 (1.07)	1.67 (2.49)	44.8 (147)	14.2 (6.44)	26-ACFTF-19

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

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## MIL-W-22759/18, /19 wire—extruded thin-wall ETFE insulation

**MIL-W-22759/18 and /19** wires have thin-wall extruded ETFE insulation for aerospace and other applications requiring light weight, tight diameter tolerances, and enhanced mechanical toughness.

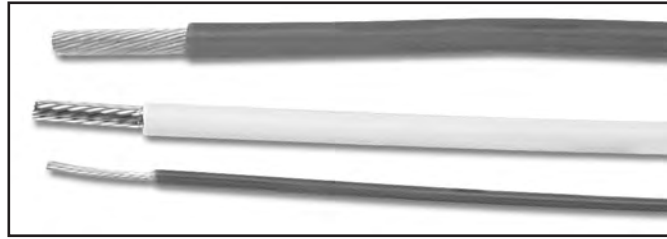
ETFE insulation also provides exceptional resistance to radiation and chemicals.

See page 71 for a selection of M27500 shielded and jacketed cables incorporating these wires.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /18,/19: -55 to 150° C



### Construction Details

**Insulation:** thin-wall extruded ETFE.

**Conductor:** /18: Tin-plated copper;  
/19: Silver-plated, high strength copper alloy.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

### Dimensions, Resistance, and Weights—M22759/18 (tin-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/18-10-*	10	37/26	.110 (2.79)	.131 (3.33)	.137 (3.48)	33.1 (49.3)	1.26 (4.13)	10-AMCFZ-3726
M22759/18-12-*	12	37/28	.086 (2.18)	.104 (2.64)	.110 (2.80)	21.0 (31.3)	2.02 (6.63)	12-AMCFZ-3728
M22759/18-14-*	14	19/27	.067 (1.70)	.083 (2.11)	.087 (2.21)	13.7 (20.4)	3.06 (10.0)	14-AMCFZ-1927
M22759/18-16-*	16	19/29	.053 (1.35)	.068 (1.73)	.072 (1.83)	8.93 (13.3)	4.81 (15.8)	16-AMCFZ-1929
M22759/18-18-*	18	19/30	.047 (1.19)	.059 (1.50)	.063 (1.60)	6.89 (10.3)	6.23 (20.4)	18-AMCFZ-1930
M22759/18-20-*	20	19/32	.038 (.97)	.049 (1.24)	.053 (1.35)	4.60 (6.85)	9.88 (32.4)	20-AMCFZ-1932
M22759/18-22-*	22	19/34	.030 (.76)	.041 (1.04)	.045 (1.14)	3.04 (4.52)	16.2 (53.1)	22-AMCFZ-1934
M22759/18-24-*	24	19/36	.024 (.61)	.034 (.86)	.038 (.97)	2.02 (3.01)	26.2 (85.9)	24-AMCFZ-1936
M22759/18-26-*	26	19/38	.019 (.48)	.030 (.76)	.034 (.86)	1.45 (2.26)	41.3 (135)	26-AMCFZ-1938

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/19 (silver-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/19-20-*	20	19/32	.038 (.97)	.049 (1.24)	.053 (1.35)	4.45 (6.62)	10.7 (35.1)	58.1 (26.4)	20-AMCFTF-1932
M22759/19-22-*	22	19/34	.030 (.76)	.041 (1.04)	.045 (1.14)	2.87 (4.27)	17.5 (57.4)	35.8 (16.2)	22-AMCFTF-1934
M22759/19-24-*	24	19/36	.024 (.61)	.034 (.86)	.038 (.97)	1.92 (2.86)	28.4 (93.2)	22.4 (10.2)	24-AMCFTF-1936
M22759/19-26-*	26	19/38	.019 (.48)	.030 (.76)	.034 (.86)	1.36 (2.02)	44.8 (147)	14.2 (6.44)	26-AMCFTF-1938

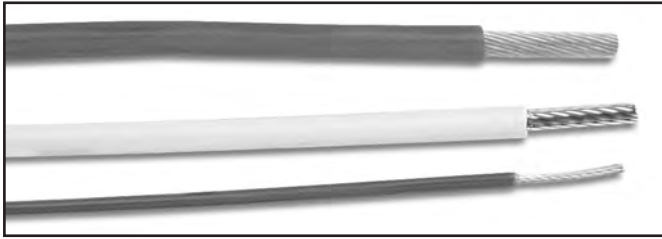
Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

## MIL-W-22759/20, /21 wire—high-strength conductor



### Construction Details

**Insulation:** Extruded PTFE.

**Conductor:** /20: Silver-plated, high strength copper alloy;  
/21: Nickel-plated, high strength copper alloy.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

MIL-W-22759/20 and /21 wires have extruded PTFE insulation and a high-strength copper alloy conductor for greater break strength. They are ideal for aerospace and other applications requiring high reliability and break strength, enhanced flex life, and resistance to high temperatures.

These wires are especially well-suited in applications where smoke emission, overload stability, and flammability are major concerns.

For versions of these wires with thinner-wall insulation and 600V voltage rating, see M22759/22 and /23 (following page).

### Performance:

**Voltage rating:** 1,000V.

**Temperature rating:** /20: -55 to 200° C  
/21: -55 to 260° C

### Dimensions, Resistance, and Weights—M22759/20 (silver-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/20-20-*	20	19/32	.038 (.97)	.066 (1.68)	.070 (1.78)	6.09 (9.06)	10.7 (35.1)	58.1 (26.4)	20-AXTTF-19
M22759/20-22-*	22	19/34	.030 (.76)	.058 (1.47)	.062 (1.57)	4.30 (6.40)	17.5 (57.4)	35.8 (16.2)	22-AXTTF-19
M22759/20-24-*	24	19/36	.024 (.61)	.051 (1.30)	.055 (1.40)	3.13 (4.66)	28.4 (93.2)	22.4 (10.2)	24-AXTTF-19
M22759/20-26-*	26	19/38	.019 (.48)	.046 (1.17)	.050 (1.27)	2.38 (3.54)	44.8 (147)	14.2 (6.44)	26-AXTTF-19
M22759/20-28-*	28	7/36	.015 (.38)	.041 (1.04)	.045 (1.14)	1.78 (2.65)	74.4 (244)	8.16 (3.70)	28-AXTTF-73

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/21 (nickel-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/21-20-*	20	19/32	.038 (.97)	.066 (1.68)	.070 (1.78)	6.09 (9.06)	11.4 (37.4)	58.1 (26.4)	20-AXTTFN-19
M22759/21-22-*	22	19/34	.030 (.76)	.058 (1.47)	.062 (1.57)	4.30 (6.40)	18.6 (61.0)	35.8 (16.2)	22-AXTTFN-19
M22759/21-24-*	24	19/36	.024 (.61)	.051 (1.30)	.055 (1.40)	3.13 (4.66)	30.1 (98.7)	22.4 (10.2)	24-AXTTFN-19
M22759/21-26-*	26	19/38	.019 (.48)	.046 (1.17)	.050 (1.27)	2.38 (3.54)	49.4 (162)	14.2 (6.44)	26-AXTTFN-19
M22759/21-28-*	28	7/36	.015 (.38)	.041 (1.04)	.045 (1.14)	1.78 (2.65)	79.0 (259)	8.16 (3.70)	28-AXTTFN-73

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

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## MIL-W-22759/22, /23 wire—high-strength conductor

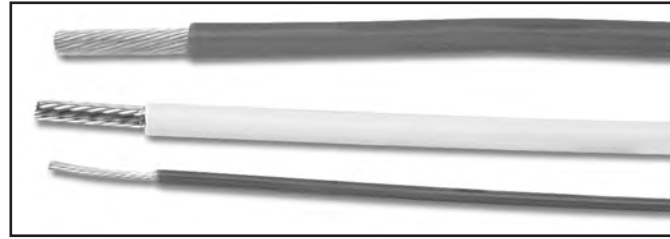
**MIL-W-22759/22 and /23** wires have thin-wall extruded PTFE insulation and a high-strength copper alloy conductor for greater break strength. They are ideal for aerospace and other applications requiring high reliability and break strength, enhanced flex life, and resistance to high temperatures.

These wires are especially well-suited in applications where smoke emission, overload stability, and flammability are major concerns.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /22: -55 to 200° C  
/23: -55 to 260° C



### Construction Details

**Insulation:** Thin-wall extruded PTFE.

**Conductor:** /22: Silver-plated, high strength copper alloy;  
/23: Nickel-plated, high strength copper alloy.

**Colors:** Color coded to MIL-STD-104.

**Identification:** to M22759.

### Dimensions, Resistance, and Weights—M22759/22 (silver-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/22-20-*	20	19/32	.038 (.97)	.056 (1.42)	.060 (1.52)	5.19 (7.72)	10.7 (35.1)	58.1 (26.4)	20-ATETF-1932
M22759/22-22-*	22	19/34	.030 (.76)	.047 (1.19)	.051 (1.30)	3.55 (5.28)	17.5 (57.4)	35.8 (16.2)	22-ATETF-1934
M22759/22-24-*	24	19/36	.024 (.61)	.041 (1.04)	.045 (1.14)	2.51 (3.74)	28.4 (93.2)	22.4 (10.2)	24-ATETF-1936
M22759/22-26-*	26	19/38	.019 (.48)	.036 (.91)	.040 (1.02)	1.84 (2.74)	44.8 (147)	14.2 (6.44)	26-ATETF-1938
M22759/22-28-*	28	7/36	.015 (.38)	.031 (.79)	.035 (.89)	1.27 (1.89)	74.4 (244)	8.16 (3.70)	28-ATETF-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/23 (nickel-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/23-20-*	20	19/32	.038 (.97)	.056 (1.42)	.060 (1.52)	5.27 (7.84)	11.4 (37.4)	58.1 (26.4)	20-ATETFN-1932
M22759/23-22-*	22	19/34	.030 (.76)	.047 (1.19)	.051 (1.30)	3.62 (5.39)	18.6 (61.0)	35.8 (16.2)	22-ATETFN-1934
M22759/23-24-*	24	19/36	.024 (.61)	.041 (1.04)	.045 (1.14)	2.55 (3.79)	30.1 (98.7)	22.4 (10.2)	24-ATETFN-1936
M22759/23-26-*	26	19/38	.019 (.48)	.036 (.91)	.040 (1.02)	1.86 (2.77)	49.4 (162)	14.2 (6.44)	26-ATETFN-1938
M22759/23-28-*	28	7/36	.015 (.38)	.031 (.79)	.035 (.89)	1.29 (1.92)	79.0 (259)	8.16 (3.70)	28-ATETFN-736

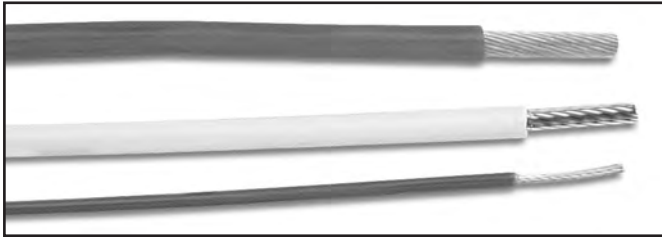
Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-104 (see page 36).

## MIL-W-22759/28, /29 wire—PTFE/polyimide insulation



### Construction Details

**Insulation:** Extruded PTFE with polyimide hard coat.

**Conductor:** /28: Silver-plated copper;  
/29: Nickel-plated copper.

**Colors:** Color coded to MIL-STD-104 (before hard coat).

**Identification:** to M22759.

**MIL-W-22759/28 and /29** wires have extruded PTFE insulation with a polyimide hard coat for increased cut-through and abrasion resistance.

These wires are designed for aerospace and other applications requiring excellent thermal stability, tight dimensional tolerances, and high reliability.

These wires are especially well-suited in applications where smoke emission, overload stability, and flammability are major concerns.

For versions of these wires with high-strength copper alloy conductor, see M22759/30 and /31 (following page).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /28: -55 to 200° C  
/29: -55 to 260° C

### Dimensions, Resistance, and Weights—M22759/28 (silver-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/28-14-*	14	19/27	.067 (1.70)	.088 (2.24)	.094 (2.39)	14.8 (22.0)	2.88 (9.45)	14-ATEH-192
M22759/28-16-*	16	19/29	.053 (1.35)	.073 (1.85)	.079 (2.01)	9.75 (14.5)	4.52 (14.8)	16-ATEH-192
M22759/28-18-*	18	19/30	.047 (1.19)	.067 (1.70)	.071 (1.80)	7.68 (11.4)	5.79 (19.0)	18-ATEH-193
M22759/28-20-*	20	19/32	.038 (.97)	.057 (1.45)	.061 (1.55)	5.24 (7.80)	9.19 (30.1)	20-ATEH-193
M22759/28-22-*	22	19/34	.030 (.76)	.048 (1.22)	.052 (1.32)	3.51 (5.22)	15.1 (49.5)	22-ATEH-193
M22759/28-24-*	24	19/36	.024 (.61)	.042 (1.07)	.046 (1.17)	2.47 (3.68)	24.3 (79.7)	24-ATEH-193
M22759/28-26-*	26	19/38	.019 (.48)	.037 (.94)	.041 (1.04)	1.80 (2.68)	38.4 (126)	26-ATEH-193
M22759/28-28-*	28	7/36	.015 (.38)	.032 (.81)	.036 (.91)	1.27 (1.89)	63.8 (209)	28-ATEH-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding (applicable to inner PTFE insulation only) per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/29 (nickel-plated conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Thermax P/N
				Minimum	Maximum			
M22759/29-14-*	14	19/27	.067 (1.70)	.088 (2.24)	.094 (2.39)	14.8 (22.0)	3.00 (9.84)	14-ATENH-192
M22759/29-16-*	16	19/29	.053 (1.35)	.073 (1.85)	.079 (2.01)	9.75 (14.5)	4.76 (15.6)	16-ATENH-192
M22759/29-18-*	18	19/30	.047 (1.19)	.067 (1.70)	.071 (1.80)	7.68 (11.4)	6.10 (20.0)	18-ATENH-193
M22759/29-20-*	20	19/32	.038 (.97)	.057 (1.45)	.061 (1.55)	5.24 (7.80)	9.77 (32.0)	20-ATENH-193
M22759/29-22-*	22	19/34	.030 (.76)	.048 (1.22)	.052 (1.32)	3.51 (5.22)	16.0 (52.5)	22-ATENH-193
M22759/29-24-*	24	19/36	.024 (.61)	.042 (1.07)	.046 (1.17)	2.47 (3.68)	25.9 (85.0)	24-ATENH-193
M22759/29-26-*	26	19/38	.019 (.48)	.037 (.94)	.041 (1.04)	1.80 (2.68)	42.2 (138)	26-ATENH-193
M22759/29-28-*	28	7/36	.015 (.38)	.032 (.81)	.036 (.91)	1.27 (1.89)	67.9 (223)	28-ATENH-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding (applicable to inner PTFE insulation only) per MIL-STD-104 (see page 36).

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## MIL-W-22759/30, /31 wire—high-strength conductor

**MIL-DTL-22759/30 and /31** wires have extruded PTFE insulation with a polyimide polyimide hard coat for increased cut-through and abrasion resistance, and a high-strength copper alloy conductor for greater break strength.

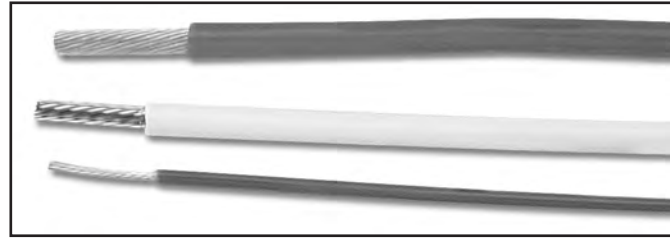
These wires are designed for aerospace and other applications requiring excellent thermal stability, tight dimensional tolerances, and high reliability.

These wires are especially well-suited in applications where smoke emission, overload stability, and flammability are major concerns.

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /30: -55 to 200° C  
/31: -55 to 260° C



### Construction Details

**Insulation:** Extruded PTFE with polyimide hard coat.

**Conductor:** /30: Silver-plated, high strength copper alloy;  
/31: Nickel-plated, high strength copper alloy.

**Colors:** Color coded to MIL-STD-104 (before hard coat).

**Identification:** to M22759.

### Dimensions, Resistance, and Weights—M22759/30 (silver-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/30-20-*	20	19/32	.038 (.97)	.057 (1.45)	.061 (1.55)	5.24 (7.80)	10.7 (35.1)	58.1 (26.4)	20-ATETFH-1932
M22759/30-22-*	22	19/34	.030 (.76)	.048 (1.22)	.052 (1.32)	3.51 (5.22)	17.5 (57.4)	35.8 (16.2)	22-ATETFH-1934
M22759/30-24-*	24	19/36	.024 (.61)	.042 (1.07)	.046 (1.17)	2.47 (3.68)	28.4 (93.2)	22.4 (10.2)	24-ATETFH-1936
M22759/30-26-*	26	19/38	.019 (.48)	.037 (.94)	.041 (1.04)	1.80 (2.68)	44.8 (147)	14.2 (6.44)	26-ATETFH-1938
M22759/30-28-*	28	7/36	.015 (.38)	.032 (.81)	.036 (.91)	1.27 (1.89)	74.4 (244)	8.16 (3.70)	28-ATETFH-736

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding (applicable to inner PTFE insulation only) per MIL-STD-104 (see page 36).

### Dimensions, Resistance, and Weights—M22759/31 (nickel-plated copper alloy conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter	Insulation Diameter		Weight	Maximum Resistance	Break Strength	Thermax P/N
				Minimum	Maximum				
M22759/31-20-*	20	19/32	.038 (.97)	.057 (1.45)	.061 (1.55)	5.28 (7.86)	11.4 (37.4)	58.1 (26.4)	20-ATETFNH-1932
M22759/31-22-*	22	19/34	.030 (.76)	.048 (1.22)	.052 (1.32)	3.52 (5.24)	18.6 (61.0)	35.8 (16.2)	22-ATETFNH-1934
M22759/31-24-*	24	19/36	.024 (.61)	.042 (1.07)	.046 (1.17)	2.48 (3.69)	30.1 (98.7)	22.4 (10.2)	24-ATETFNH-1936
M22759/31-26-*	26	19/38	.019 (.48)	.037 (.94)	.041 (1.04)	1.81 (2.69)	49.4 (162)	14.2 (6.44)	26-ATETFNH-1938
M22759/31-28-*	28	7/36	.015 (.38)	.032 (.81)	.036 (.91)	1.28 (1.90)	79.0 (259)	8.16 (3.70)	28-ATETFNH-736

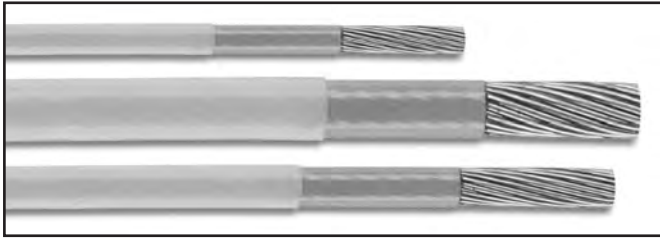
Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

Break strength in pounds (Kg) minimum.

All values are nominal unless otherwise indicated.

\* Add color coding (applicable to inner PTFE insulation only) per MIL-STD-104 (see page 36).

# MIL-DTL-22759/80, /81, /82 wire—light weight, composite insula



## Construction Details

**Insulation:** PTFE/polyimide/PTFE tape (inner layer);  
PTFE tape (outer layer).

**Conductor:** /80: Tin-plated copper;  
/81: Silver-plated high-strength (AWG 20-24)  
or ultra-high-strength copper alloy (AWG 26).  
/82: Nickel-plated high-strength (AWG 20-24)  
or ultra-high-strength copper alloy (AWG 26).

**Colors:** Color coded to MIL-STD-681.

**Identification:** Per MIL-DTL-22759/80, /81, and /82.

**MIL-DTL-22759/80, /81, and /82** wires are light weight, high-performance aerospace hookup wire with a dual-layer insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape.

These wires are designed for aerospace and other applications requiring excellent thermal stability, light weight, and high break strength.

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details and part numbers).

## Performance:

**Voltage rating:** 600V.

**Temperature rating:** /80: -55 to 150° C  
/81: -55 to 200° C  
/82: -55 to 260° C

## Dimensions, Resistance, and Weights—M22759/80 (tin-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/80-10-*	10	37/26	.1060 (2.69)	.1120 (2.84)	.119 (3.02)	.123 (3.12)	30.4 (45.2)	1.26 (4)
M22759/80-12-*	12	37/28	.0835 (2.12)	.0894 (2.27)	.096 (2.44)	.100 (2.54)	19.4 (28.9)	2.02 (6)
M22759/80-14-*	14	19/27	.0645 (1.64)	.0694 (1.76)	.076 (1.93)	.080 (2.03)	12.4 (18.4)	3.06 (11)
M22759/80-16-*	16	19/29	.0515 (1.31)	.0554 (1.41)	.063 (1.60)	.067 (1.70)	7.97 (11.9)	4.81 (17)
M22759/80-18-*	18	19/30	.0455 (1.16)	.0494 (1.25)	.056 (1.42)	.060 (1.52)	6.41 (9.5)	6.23 (23)
M22759/80-20-*	20	19/32	.0365 (.93)	.0394 (1.00)	.048 (1.22)	.051 (1.30)	4.29 (6.4)	9.88 (36)
M22759/80-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.040 (1.02)	.043 (1.09)	2.78 (4.1)	16.2 (60)
M22759/80-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.034 (.86)	.038 (.97)	1.87 (2.8)	26.2 (98)
M22759/80-26-*	26	19/38	.0175 (.44)	.0204 (.52)	.030 (.76)	.034 (.86)	1.30 (1.9)	41.3 (155)

## Dimensions, Weights, and Resistance—M22759/81 (silver-plated high-strength conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/81-20-*	20	19/32	.0365 (.93)	.0395 (1.00)	.048 (1.22)	.051 (1.30)	4.36 (6.5)	10.7 (40)
M22759/81-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.040 (1.02)	.043 (1.09)	2.80 (4.2)	17.5 (65)
M22759/81-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.034 (.86)	.038 (.97)	1.87 (2.8)	28.4 (105)
M22759/81-26-*	†26	19/38	.0175 (.44)	.0204 (.52)	.030 (.76)	.034 (.86)	1.40 (2.1)	56.4 (208)

## Dimensions, Weights, and Resistance—M22759/82 (nickel-plated high-strength conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/82-20-*	20	19/32	.0365 (.93)	.0404 (1.03)	.048 (1.22)	.051 (1.30)	4.32 (6.4)	11.4 (42)
M22759/82-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.040 (1.02)	.043 (1.09)	2.83 (4.2)	18.6 (68)
M22759/82-24-*	24	19/36	.0225 (.57)	.0254 (.65)	.034 (.86)	.038 (.97)	1.87 (2.8)	30.1 (111)
M22759/82-26-*	†26	19/38	.0175 (.44)	.0204 (.52)	.030 (.72)	.034 (.86)	1.38 (2.1)	58.4 (214)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36). †Indicates ultra-high-strength copper alloy conductor.

All values are nominal unless otherwise indicated.

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## MIL-DTL-22759/83, /84, /85 wire—normal weight

**MIL-DTL-22759/83, /84, and /85** wires are large size, high-performance aerospace hookup wires with a four-layer insulation of PTFE tape and PTFE/polyimide/PTFE tape, with an outer layer of polyamide braid for superior abrasion resistance.

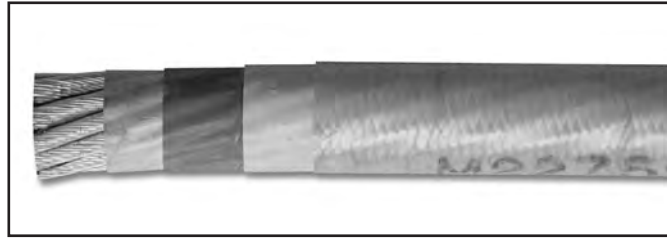
These wires are designed for aerospace and other applications requiring excellent thermal stability and abrasion resistance.

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details and part numbers).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /83: -55 to 200° C  
/84: -55 to 260° C  
/85: -55 to 150° C



### Construction Details

**Insulation:** First layer: PTFE tape;  
Second layer: PTFE/polyimide/PTFE tape;  
Third and fourth layers: PTFE tape;  
Fifth (outer) layer: 200 Denier polyamide braid with clear lacquer to prevent fraying.

**Conductor:** /83: Silver-plated copper;  
/84: Nickel-plated copper.  
/85: Tin-plated copper.

**Colors:** See below.

**Identification:** Per MIL-DTL-22759/83, /84, and /85.

### Dimensions, Weight, and Resistance—M22759/83 (silver-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/83-04-*	4/0	2109/30	.565 (14.35)	.605 (15.37)	.615 (15.62)	.655 (16.64)	661.4 (984.0)	.054 (.177)
M22759/83-03-*	3/0	1665/30	.500 (12.70)	.540 (13.72)	.554 (14.07)	.584 (14.83)	520.3 (774.1)	.068 (.223)
M22759/83-02-*	2/0	1330/30	.440 (11.18)	.475 (12.07)	.498 (12.65)	.528 (13.41)	414.7 (617.0)	.085 (.279)
M22759/83-01-*	0	1045/30	.395 (10.03)	.425 (10.80)	.442 (11.23)	.462 (11.73)	337.0 (501.4)	.108 (.354)
M22759/83-1-*	1	817/30	.366 (9.30)	.380 (9.65)	.400 (10.16)	.420 (10.67)	282.0 (419.6)	.139 (.456)
M22759/83-2-*	2	665/30	.320 (8.13)	.340 (8.64)	.360 (9.14)	.380 (9.65)	217.9 (324.2)	.170 (.558)

### Dimensions, Weight, and Resistance—M22759/84 (nickel-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/84-04-*	4/0	2109/30	.565 (14.35)	.605 (15.37)	.615 (15.62)	.655 (16.64)	661.4 (984.0)	.056 (.184)
M22759/84-03-*	3/0	1665/30	.500 (12.70)	.540 (13.72)	.554 (14.07)	.584 (14.83)	520.3 (774.1)	.071 (.233)
M22759/84-02-*	2/0	1330/30	.440 (11.18)	.475 (12.07)	.498 (12.65)	.528 (13.41)	414.7 (617.0)	.089 (.292)
M22759/84-01-*	0	1045/30	.395 (10.03)	.425 (10.80)	.442 (11.23)	.462 (11.73)	337.0 (501.4)	.113 (.371)
M22759/84-1-*	1	817/30	.366 (9.30)	.380 (9.65)	.400 (10.16)	.420 (10.67)	282.0 (419.6)	.144 (.472)
M22759/84-2-*	2	665/30	.320 (8.13)	.340 (8.64)	.360 (9.14)	.380 (9.65)	217.9 (324.2)	.177 (.581)

### Dimensions, Weight, and Resistance—M22759/85 (tin-plated copper conductor)

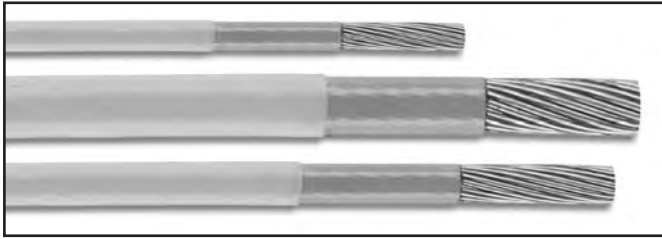
M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/85-04-*	4/0	2109/30	.565 (14.35)	.605 (15.37)	.615 (15.62)	.655 (16.64)	661.4 (984.0)	.056 (.184)
M22759/85-03-*	3/0	1665/30	.500 (12.70)	.540 (13.72)	.554 (14.07)	.584 (14.83)	520.3 (774.1)	.071 (.233)
M22759/85-02-*	2/0	1330/30	.440 (11.18)	.475 (12.07)	.498 (12.65)	.528 (13.41)	414.7 (617.0)	.091 (.298)
M22759/85-01-*	0	1045/30	.395 (10.03)	.425 (10.80)	.442 (11.23)	.462 (11.73)	337.0 (501.4)	.116 (.380)
M22759/85-1-*	1	817/30	.366 (9.30)	.380 (9.65)	.400 (10.16)	.420 (10.67)	282.0 (419.6)	.149 (.489)
M22759/85-2-*	2	665/30	.320 (8.13)	.340 (8.64)	.360 (9.14)	.380 (9.65)	217.9 (324.2)	.183 (.600)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding—dark green (5D) preferred, white (9) acceptable alternate. All values are nominal unless otherwise indicated.



## MIL-DTL-22759/86 wire—silver-plated conductor



### Construction Details

**Insulation:** See chart below.

**Conductor:** Silver-plated copper.

**Colors:** Color coded to MIL-STD-681.

**Identification:** Per MIL-DTL-22759/86.

**MIL-DTL-22759/86** wires are normal-weight, high performance aerospace hookup wires with insulation composed of PTFE/polyimide/PTFE tape and PTFE tape in several configurations.

These wires are designed for aerospace and other applications requiring excellent thermal stability and good abrasion resistance.

For versions of these wires with nickel-plated conductors, see MIL-DTL-22759/87 (following page). For versions with tin-plated conductors, see MIL-DTL-22759/88 (page 51).

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details and part numbers).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 200° C

### Insulation—M22759/86

AWG Size	Inner Layer	Second Layer	Third Layer	Fourth Layer
4/0 through 4	PTFE tape	PTFE/polyimide/PTFE tape	PTFE tape	PTFE tape
8 and 6	PTFE tape	PTFE/polyimide/PTFE tape	PTFE tape	None
10 through 26	PTFE/polyimide/PTFE tape	PTFE tape	None	None

### Dimensions, Resistance, and Weights—M22759/86 (silver-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/86-04-*	4/0	2109/30	.565 (14.35)	.605 (15.37)	.590 (14.99)	.630 (16.0)	680.8 (1012.9)	.054 (1.38)
M22759/86-03-*	3/0	1665/30	.500 (12.70)	.540 (13.72)	.530 (13.46)	.560 (14.2)	541.8 (806.1)	.068 (1.73)
M22759/86-02-*	2/0	1330/30	.440 (11.18)	.475 (12.07)	.475 (12.07)	.505 (12.8)	431.6 (642.1)	.085 (2.16)
M22759/86-01-*	0	1045/30	.395 (10.03)	.425 (10.80)	.420 (10.67)	.450 (11.4)	343.8 (511.5)	.108 (2.75)
M22759/86-1-*	1	817/30	.366 (9.30)	.380 (9.65)	.388 (9.86)	.408 (10.4)	272.5 (405.4)	.139 (3.53)
M22759/86-2-*	2	665/30	.320 (8.13)	.340 (8.64)	.344 (8.74)	.364 (9.25)	222.8 (331.5)	.170 (4.32)
M22759/86-4-*	4	133/25	.250 (6.35)	.263 (6.68)	.276 (7.01)	.288 (7.32)	141.1 (209.9)	.264 (6.71)
M22759/86-6-*	6	133/27	.198 (5.03)	.208 (5.28)	.219 (5.56)	.229 (5.82)	88.1 (131.1)	.418 (10.66)
M22759/86-8-*	8	133/29	.158 (4.01)	.166 (4.22)	.180 (4.57)	.188 (4.78)	57.5 (85.5)	.658 (16.71)
M22759/86-10-*	10	37/26	.106 (2.69)	.110 (2.79)	.122 (3.10)	.127 (3.23)	31.2 (46.4)	1.19 (30.1)
M22759/86-12-*	12	37/28	.0835 (2.12)	.0874 (2.22)	.100 (2.54)	.105 (2.67)	19.6 (29.2)	1.90 (48.5)
M22759/86-14-*	14	19/27	.0645 (1.64)	.0684 (1.74)	.081 (2.06)	.086 (2.18)	12.5 (18.6)	2.88 (73.2)
M22759/86-16-*	16	19/29	.0515 (1.31)	.0544 (1.38)	.068 (1.73)	.073 (1.85)	8.55 (12.7)	4.52 (115.5)
M22759/86-18-*	18	19/30	.0455 (1.16)	.0484 (1.23)	.061 (1.55)	.065 (1.65)	6.65 (9.9)	5.79 (146.8)
M22759/86-20-*	20	19/32	.0365 (.93)	.0384 (.98)	.051 (1.30)	.055 (1.40)	4.50 (6.7)	9.19 (233.8)
M22759/86-22-*	22	19/34	.0285 (.72)	.0304 (.77)	.043 (1.09)	.047 (1.19)	2.97 (4.4)	15.1 (387.5)
M22759/86-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.038 (.97)	.042 (1.07)	2.04 (3.0)	24.3 (618.0)
M22759/86-26-*	26	19/38	.0175 (.44)	.0194 (.49)	.033 (.84)	.037 (.94)	1.44 (2.1)	38.4 (977.8)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36). All values are nominal unless otherwise indicated.

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# MIL-DTL-22759/87 wire—normal weight

**MIL-DTL-22759/87** wires are normal-weight, high-performance aerospace hookup wires with insulation composed of PTFE/polyimide/PTFE tape and PTFE tape in several configurations.

These wires are designed for aerospace and other applications requiring excellent thermal stability and good abrasion resistance.

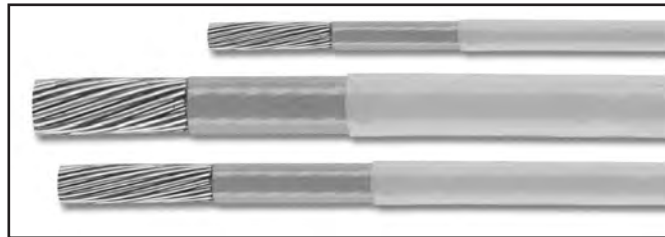
For versions of these wires with silver-plated conductors, see MIL-DTL-22759/86 (previous page). For versions with tin-plated conductors, see MIL-DTL-22759/88 (following page).

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details).

**Performance:**

**Voltage rating:** 600V.

**Temperature rating:** -55 to 260° C



**Construction Details**

**Insulation:** See chart below.

**Conductor:** Nickel-plated copper.

**Colors:** Color coded to MIL-STD-681.

**Identification:** Per MIL-DTL-22759/87.

**Insulation—M22759/87**

AWG Size	Inner Layer	Second Layer	Third Layer	Fourth Layer
4/0 through 4	PTFE tape	PTFE/polyimide/PTFE tape	PTFE tape	PTFE tape
8 and 6	PTFE tape	PTFE/polyimide/PTFE tape	PTFE tape	None
10 through 26	PTFE/polyimide/PTFE tape	PTFE tape	None	None

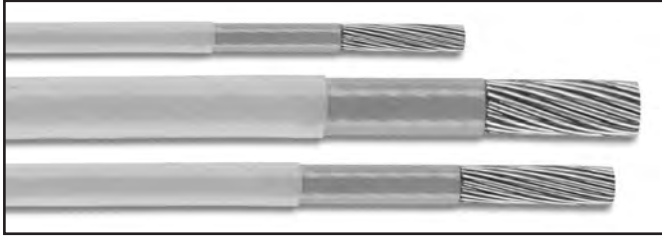
**Dimensions, Resistance, and Weights—M22759/87 (nickel-plated copper conductor)**

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/87-04-*	4/0	2109/30	.565 (14.35)	.605 (15.37)	.590 (14.99)	.630 (16.00)	680.8 (1012.9)	.056 (.177)
M22759/87-03-*	3/0	1665/30	.500 (12.70)	.540 (13.72)	.530 (13.46)	.560 (14.22)	541.8 (806.1)	.071 (.233)
M22759/87-02-*	2/0	1330/30	.440 (11.18)	.476 (12.09)	.475 (12.07)	.505 (12.83)	431.6 (642.1)	.089 (.292)
M22759/87-01-*	0	1045/30	.395 (10.03)	.425 (10.80)	.420 (10.67)	.450 (11.43)	343.8 (511.5)	.113 (.371)
M22759/87-1-*	1	817/30	.366 (9.30)	.380 (9.65)	.388 (9.86)	.408 (10.36)	272.5 (405.4)	.144 (.472)
M22759/87-2-*	2	665/30	.320 (8.13)	.340 (8.64)	.344 (8.74)	.364 (9.25)	222.8 (331.5)	.177 (.581)
M22759/87-4-*	4	133/25	.250 (6.35)	.268 (6.81)	.276 (7.01)	.288 (7.32)	141.1 (209.9)	.275 (.902)
M22759/87-6-*	6	133/27	.198 (5.03)	.212 (5.38)	.219 (5.56)	.229 (5.82)	88.1 (131.1)	.436 (1.43)
M22759/87-8-*	8	133/29	.158 (4.01)	.169 (4.29)	.180 (4.57)	.188 (4.78)	57.5 (85.5)	.694 (2.28)
M22759/87-10-*	10	37/26	.106 (2.69)	.112 (2.84)	.122 (3.10)	.127 (3.23)	31.3 (46.6)	1.24 (4.07)
M22759/87-12-*	12	37/28	.0835 (2.12)	.0894 (2.27)	.100 (2.54)	.105 (2.67)	20.0 (29.8)	1.98 (6.49)
M22759/87-14-*	14	19/27	.0645 (1.64)	.0694 (1.76)	.081 (2.06)	.086 (2.18)	12.5 (18.6)	3.00 (9.84)
M22759/87-16-*	16	19/29	.0515 (1.31)	.0554 (1.41)	.068 (1.73)	.073 (1.85)	8.55 (12.7)	4.76 (15.6)
M22759/87-18-*	18	19/30	.0455 (1.16)	.0494 (1.25)	.061 (1.55)	.065 (1.65)	6.65 (9.9)	6.10 (20.0)
M22759/87-20-*	20	19/32	.0365 (.93)	.0394 (1.00)	.051 (1.30)	.055 (1.40)	4.54 (6.8)	9.77 (32.0)
M22759/87-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.043 (1.09)	.047 (1.19)	2.97 (4.4)	16.0 (52.5)
M22759/87-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.038 (.97)	.042 (1.07)	2.04 (3.0)	25.9 (85.0)
M22759/87-26-*	26	19/38	.0175 (.44)	.0204 (.52)	.033 (.84)	.037 (.94)	1.48 (2.2)	42.2 (138)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in Ω/1,000 feet (Ω/Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36). All values are nominal unless otherwise indicated.

## MIL-DTL-22759/88 wire—tin-plated conductor



### Construction Details

**Insulation:** See chart below.

**Conductor:** Tin-plated copper.

**Colors:** Color coded to MIL-STD-681.

**Identification:** Per MIL-DTL-22759/88.

**MIL-DTL-22759/88** wires are normal-weight, high performance aerospace hookup wires with insulation composed of PTFE/polyimide/PTFE tape and PTFE tape in several configurations.

These wires are designed for aerospace and other applications requiring excellent thermal stability and good abrasion resistance.

For versions of these wires with silver-plated conductors, see MIL-DTL-22759/86 (page 49). For versions with nickel-plated conductors, see MIL-DTL-22759/87 (previous page).

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** -55 to 150° C

### Insulation—M22759/88

AWG Size	Inner Layer	Second Layer	Third Layer	Fourth Layer
4/0 through 4	PTFE tape	PTFE/polyimide/PTFE tape	PTFE tape	PTFE tape
8 and 6	PTFE tape	PTFE/polyimide/PTFE tape	PTFE tape	None
10 through 26	PTFE/polyimide/PTFE tape	PTFE tape	None	None

### Dimensions, Resistance, and Weights—M22759/88 (tin-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/88-04-*	4/0	2109/30	.565 (14.35)	.605 (15.37)	.590 (14.99)	.630 (16.00)	680.8 (1012.9)	.056 (1.42)
M22759/88-03-*	3/0	1665/30	.500 (12.70)	.540 (13.72)	.530 (13.46)	.560 (14.22)	541.8 (806.1)	.071 (1.80)
M22759/88-02-*	2/0	1330/30	.440 (11.18)	.475 (12.07)	.475 (12.07)	.505 (12.83)	431.6 (642.1)	.091 (2.30)
M22759/88-01-*	0	1045/30	.395 (10.03)	.425 (10.80)	.420 (10.67)	.450 (11.43)	343.8 (511.5)	.116 (2.94)
M22759/88-1-*	1	817/30	.366 (9.30)	.380 (9.65)	.388 (9.86)	.408 (10.36)	274.5 (408.4)	.149 (3.78)
M22759/88-2-*	2	665/30	.320 (8.13)	.340 (8.64)	.344 (8.74)	.364 (9.25)	222.8 (331.5)	.183 (4.64)
M22759/88-4-*	4	133/25	.250 (6.35)	.268 (6.81)	.276 (7.01)	.288 (7.32)	141.1 (209.9)	.280 (7.11)
M22759/88-6-*	6	133/27	.198 (5.03)	.212 (5.38)	.219 (5.56)	.229 (5.82)	88.1 (131.1)	.445 (11.31)
M22759/88-8-*	8	133/29	.158 (4.01)	.169 (4.29)	.180 (4.57)	.188 (4.78)	57.5 (85.5)	.701 (17.78)
M22759/88-10-*	10	37/26	.106 (2.69)	.112 (2.84)	.122 (3.10)	.127 (3.23)	31.3 (46.6)	1.26 (32.01)
M22759/88-12-*	12	37/28	.0835 (2.12)	.0894 (2.27)	.100 (2.54)	.105 (2.67)	20.0 (29.8)	2.02 (51.41)
M22759/88-14-*	14	19/27	.0645 (1.64)	.0694 (1.76)	.081 (2.06)	.086 (2.18)	12.9 (19.2)	3.06 (77.45)
M22759/88-16-*	16	19/29	.0515 (1.31)	.0554 (1.41)	.068 (1.73)	.073 (1.85)	8.44 (12.6)	4.81 (122.5)
M22759/88-18-*	18	19/30	.0455 (1.16)	.0494 (1.25)	.061 (1.55)	.065 (1.65)	6.67 (9.9)	6.23 (158.8)
M22759/88-20-*	20	19/32	.0365 (.93)	.0394 (1.00)	.051 (1.30)	.055 (1.40)	4.51 (6.7)	9.88 (250.5)
M22759/88-22-*	22	19/34	.0285 (.73)	.0314 (.80)	.043 (1.09)	.047 (1.19)	2.97 (4.4)	16.2 (411.2)
M22759/88-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.038 (.97)	.042 (1.07)	2.04 (3.0)	26.2 (665.2)
M22759/88-26-*	26	19/38	.0175 (.44)	.0204 (.52)	.033 (.84)	.037 (.94)	1.44 (2.1)	41.3 (1052.1)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36). All values are nominal unless otherwise indicated.

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## MIL-DTL-22759/89, /90 wire—normal weight

**MIL-DTL-22759/89 and /90** wires are light-weight, high-performance aerospace hookup wires with a dual-layer insulation of PTFE/polyimide/PTFE tape, covered with PTFE tape. They are similar to MIL-DTL-22759/81 and /82 wires, but have thicker-wall insulation.

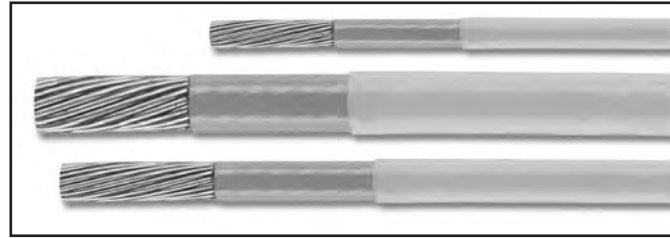
These wires are designed for aerospace and other applications requiring excellent thermal stability and high break strength.

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details).

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /89: -55 to 200° C  
/90: -55 to 260° C



### Construction Details

**Insulation:** PTFE/polyimide/PTFE tape (inner layer);  
PTFE tape (outer layer).

**Conductor:** /89: Silver-plated high-strength (AWG 20-24)  
or ultra-high-strength copper alloy (AWG 26).  
/90: Nickel-plated high-strength (AWG 20-24)  
or ultra-high-strength copper alloy (AWG 26).

**Colors:** Color coded to MIL-STD-681.

**Identification:** Per MIL-DTL-22759/89 and /90.

### Dimensions, Weights, and Resistance—M22759/89 (silver-plated high-strength conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/89-20-*	20	19/32	.0365 (.93)	.0395 (1.00)	.051 (1.30)	.055 (1.40)	4.54 (6.8)	10.7 (35.1)
M22759/89-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.043 (1.09)	.047 (1.19)	2.99 (4.4)	17.5 (57.4)
M22759/89-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.038 (.965)	.042 (1.07)	2.04 (3.0)	28.4 (93.2)
M22759/89-26-*	†26	19/38	.0175 (.44)	.0204 (.52)	.033 (.84)	.037 (.94)	1.52 (2.3)	56.4 (185)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

All values are nominal unless otherwise indicated.

\* Add color coding per MIL-STD-681 (see page 36). †Indicates ultra-high-strength copper alloy conductor.

### Dimensions, Weights, and Resistance—M22759/90 (nickel-plated high-strength conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/90-20-*	20	19/32	.0365 (.93)	.0404 (1.03)	.051 (1.30)	.055 (1.40)	4.54 (6.8)	11.4 (37.4)
M22759/90-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.043 (1.09)	.047 (1.19)	2.99 (4.4)	18.6 (61.0)
M22759/90-24-*	24	19/36	.0225 (.57)	.0254 (.65)	.038 (.965)	.042 (1.07)	2.04 (3.0)	30.1 (98.7)
M22759/90-26-*	†26	19/38	.0175 (.44)	.0204 (.52)	.033 (.84)	.037 (.94)	1.52 (2.3)	58.4 (191)

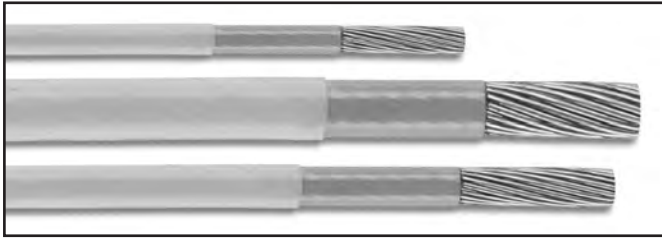
Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36).

†Indicates ultra-high-strength copper alloy conductor.

All values are nominal unless otherwise indicated.

## MIL-DTL-22759/91, /92 wire—light weight



### Construction Details

**Insulation:** PTFE/polyimide/PTFE tape (inner layer);  
PTFE tape (outer layer).

**Conductor:** /91: Silver-plated copper.  
/92: Nickel-plated copper.

**Colors:** Color coded to MIL-STD-681.

**Identification:** Per MIL-DTL-22759/91 and /92.

**MIL-DTL-22759/91 and /92** wires are light-weight, high-performance aerospace hookup wires with dual-layer insulation of PTFE/polyimide/PTFE tape covered with PTFE tape.

These wires are designed for aerospace and other applications requiring excellent thermal stability and light weight.

For versions with high-strength conductors, see MIL-DTL-22759/81 and /82 (page 47)

These wires are available with our unique **Seamless Wrap** PTFE tape insulation (see page 54 for details)

### Performance:

**Voltage rating:** 600V.

**Temperature rating:** /91: -55 to 200° C  
/92: -55 to 260° C

### Dimensions, Resistance, and Weights—M22759/91 (silver-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/91-10-*	10	37/26	.1060 (2.69)	.1100 (2.79)	.119 (3.02)	.123 (3.12)	30.5 (45.4)	1.19 (3.0)
M22759/91-12-*	12	37/28	.0835 (2.12)	.0874 (2.22)	.096 (2.44)	.100 (2.54)	19.5 (29.0)	1.90 (6.0)
M22759/91-14-*	14	19/27	.0645 (1.64)	.0684 (1.74)	.076 (1.93)	.080 (2.03)	12.6 (18.7)	2.88 (9.0)
M22759/91-16-*	16	19/29	.0515 (1.31)	.0544 (1.38)	.063 (1.60)	.067 (1.70)	8.21 (12.2)	4.52 (14.0)
M22759/91-18-*	18	19/30	.0455 (1.16)	.0484 (1.23)	.056 (1.42)	.060 (1.52)	6.57 (9.8)	5.79 (19.0)
M22759/91-20-*	20	19/32	.0365 (.93)	.0384 (.98)	.048 (1.22)	.051 (1.30)	4.36 (6.5)	9.19 (30.0)
M22759/91-22-*	22	19/34	.0285 (.72)	.0304 (.77)	.040 (1.02)	.043 (1.09)	2.83 (4.2)	15.1 (49.0)
M22759/91-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.034 (.86)	.038 (.97)	1.87 (2.8)	24.3 (79.0)
M22759/91-26-*	26	19/38	.0175 (.44)	.0194 (.49)	.030 (.76)	.034 (.86)	1.33 (2.0)	38.4 (124.0)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36).

All values are nominal unless otherwise indicated.

### Dimensions, Resistance, and Weights—M22759/92 (nickel-plated copper conductor)

M22759 P/N	AWG Size	Stranding	Conductor Diameter		Insulation Diameter		Weight	Maximum Resistance
			Minimum	Maximum	Minimum	Maximum		
M22759/92-10-*	10	37/26	.1060 (2.69)	.1120 (2.84)	.119 (3.02)	.123 (3.12)	30.5 (45.4)	1.24 (4.0)
M22759/92-12-*	12	37/28	.0835 (2.12)	.0894 (2.27)	.096 (2.44)	.100 (2.54)	19.5 (29.0)	1.98 (6.0)
M22759/92-14-*	14	19/27	.0645 (1.64)	.0694 (1.76)	.076 (1.93)	.080 (2.03)	12.6 (18.7)	3.00 (9.0)
M22759/92-16-*	16	19/29	.0515 (1.31)	.0554 (1.41)	.063 (1.60)	.067 (1.70)	8.21 (12.2)	4.76 (15.0)
M22759/92-18-*	18	19/30	.0455 (1.16)	.0494 (1.25)	.056 (1.42)	.060 (1.52)	6.57 (9.8)	6.10 (20.0)
M22759/92-20-*	20	19/32	.0365 (.93)	.0394 (1.00)	.048 (1.22)	.051 (1.30)	4.36 (6.5)	9.77 (32.0)
M22759/92-22-*	22	19/34	.0285 (.72)	.0314 (.80)	.040 (1.02)	.043 (1.09)	2.83 (4.2)	16.0 (52.0)
M22759/92-24-*	24	19/36	.0225 (.57)	.0244 (.62)	.034 (.86)	.038 (.97)	1.87 (2.8)	25.9 (85.0)
M22759/92-26-*	26	19/38	.0175 (.44)	.0204 (.52)	.030 (.76)	.034 (.86)	1.33 (2.0)	42.2 (139.0)

Dimensions in inches (mm). Weights in pounds/1000 feet (Kg/1000 M). Resistance in  $\Omega$ /1,000 feet ( $\Omega$ /Km), @20° C.

\* Add color coding per MIL-STD-681 (see page 36).

All values are nominal unless otherwise indicated.

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**Thermax**

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# MIL-DTL-22759 wire with *Seamless Wrap* insulation

Thermax *Seamless Wrap* PTFE wire insulation and cable jacket offers all the advantages of a tape wrap with the smooth appearance and installation characteristics of an extrusion.

*Seamless Wrap* features an outer surface that:

- Looks and feels like an extruded jacket;
- Reduces the possibility of damage during installation or re-routing (no seams to snag);
- Yields a more consistent final O.D. for cleaner stripping, marking, and striping;
- Accepts clear, permanent laser marking.

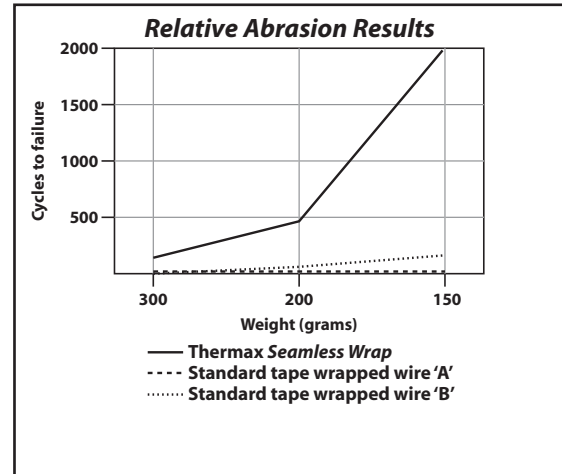
Because of its uniform cross section, *Seamless Wrap* is superior to conventional wrapped tape in:

- Consistent wall thickness;
- Increased dielectric strength;
- Enhanced wet and dry arc propagation resistance.

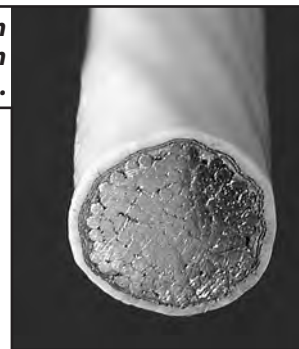
By eliminating the mechanical “weak points” of seams in conventional wrapped tapes, *Seamless Wrap*:

- Significantly improves abrasion resistance, particularly wire-to-wire;
- Eliminates delaminating of sintered tape layers;
- Has enhanced crack resistance for use in SWAMP and fire zone applications.

To order appropriate MIL DTL-22759 wires with *Seamless Wrap* insulation, see the chart below.



*Seamless Wrap* insulation cuts clean and smooth with no unraveling.



Clear, crisp laser marking enhanced by smooth outer surface.

## MIL-DTL-22759 Wires With *Seamless Wrap* Insulation

