

Section 3.

Military/Aerospace Wire & Cable



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Specifications subject to change. For complete specifications and availability visit www.lapptannehill.com



Harbour

INDUSTRIES

High Performance Wire & Cable

HARBOUR INDUSTRIES is the largest producer of **PTFE lead wire** in the United States. In addition to meeting and exceeding Mil-Spec and UL/CSA requirements, Harbour's ability to manufacture wire and cable that meets stringent electrical requirements has put them in the forefront of the communications, aircraft and In-Flight Entertainment markets. Harbour Industries' focus on continuous improvement has enabled them to streamline manufacturing processes, reduce cost, and maintain market leading standards for customer service.

Harbour Industries is the preeminent manufacturer of **high temperature and high performance coaxial cables** for the military, aerospace, commercial, and industrial markets.

Harbour manufactures **QPL approved MIL-C-17 Coax** cables swept for VSWR to ensure product uniformity. For many years, Harbour has also been manufacturing special versions of MIL-C-17 cables such as HS High Strength and TRX Triaxial constructions to meet demanding customer requirements.

Harbour has developed a series of **LL Low Loss, SB Strip Braid, and SS Spiral Strip** series of coaxial cables for the RF and Microwave markets. They have developed composite strip braid configurations and proprietary expanded PTFE tape dielectrics, and have created a cost effective viable source of supply for assembly houses and OEMs.

Through the use of special materials and innovative construction techniques, Harbour continues to enhance their product offering with coaxial cables that are lighter weight, more flexible, and have higher levels of shielding effectiveness.

HARBOUR INDUSTRIES design and process engineering expertise ensure high quality and uniform products in accordance with customer specifications. Harbour Industries has a wide range of manufacturing processes with large scale production operations and "First-in-Class" customer service. Engineering and manufacturing strengths allow **HARBOUR INDUSTRIES AND LAPP TANNEHILL** to be highly competitive in the global marketplace.


Military/Aerospace Wire & Cable


NEMA HP-3 TYPES E, EE, ET Replaces M16878/4, /5, /6, /23, /25, /27

Construction: **Conductors:** Stranded or solid silver or nickel plated copper; **Insulation:** Extruded Polytetrafluoroethylene (PTFE)

Technical Data:

 **Temperature:** SPC 200°C
NPC 260°C

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

 **Approvals:**
NEMA HP-3 has no requirement for the
wire to be printed.

	Type E		Type EE		Type ET		DC Resistance
Voltage Rating	600		1000		250		
AWG/Stranding	Mils/OD	lbs/mft	Mils/OD	lbs/mft	Mils/OD	lbs/mft	Ohms/mft
30 1/30	10/.030"	1	15/.040"	1	6/.022"	1	106.0
30 7/38	10/.032"	1	15/.042"	1	6/.024"	1	100.0
28 1/28	10/.033"	2	15/.043"	2	6/.025"	1	66.7
28 7/36	10/.035"	2	15/.045"	2	6/.027"	1	63.6
28 19/40	10/.035"	2	15/.045"	2	6/.027"	1	63.1
26 1/26	10/.036"	2	15/.046"	2	6/.028"	2	41.9
26 7/34	10/.039"	2	15/.049"	2	6/.031"	2	39.7
26 19/38	10/.039"	2	15/.049"	2	6/.031"	2	37.3
24 1/24	10/.040"	3	15/.050"	3	6/.032"	3	26.2
24 7/32	10/.044"	3	15/.054"	3	6/.036"	3	24.5
24 19/36	10/.045"	3	15/.055"	3	6/.036"	3	23.6
22 1/22	10/.045"	4	15/.055"	4	6/.038"	3	16.5
22 7/30	10/.050"	4	15/.060"	4	6/.042"	3	15.6
22 19/34	10/.051"	4	15/.061"	5	6/.042"	4	14.8
20 1/20	10/.052"	5	15/.062"	6	6/.044"	5	10.3
20 7/28	10/.058"	5	15/.068"	6	6/.050"	5	9.8
20 19/32	10/.058"	6	15/.068"	7	6/.050"	5	9.1
18 7/26	10/.069"	8	15/.079"	9	-	-	6.2
18 19/30	10/.069"	8	15/.079"	9	-	-	5.8
16 19/29	13/.080"	10	18/.089"	11	-	-	4.5
14 19/27	13/.095"	15	18/.106"	17	-	-	2.9
12 19/25	15/.114"	23	21/.125"	24	-	-	1.8
10 37/26	13/.134"	35	19/.145"	35	-	-	1.2
8 133/29	-	-	24/.209"	68	-	-	0.7
6 133/27	-	-	28/.263"	107	-	-	-

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NEMA HP-4 TYPES K, KK, KT *Replaces M16878/11, /12, /13*

Construction: **Conductors:** Stranded or solid tin or silver plated copper; **Insulation:** Extruded FEP

Technical Data:

 **Temperature:** TPC 150°C
SPC 200°C

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

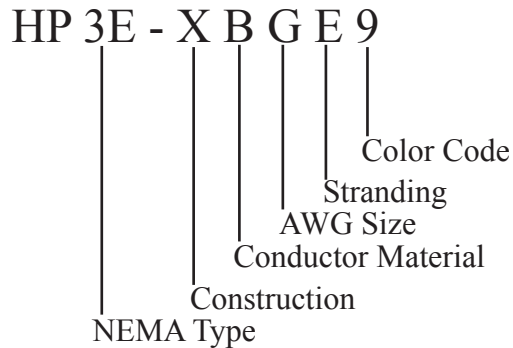
 **Approvals:**
NEMA HP-3 has no requirement for the
wire to be printed.

	Type K		Type KK		Type KT		DC Resistance
Voltage Rating	600		1000		250		
AWG/Stranding	Mils/OD	lbs/mft	Mils/OD	lbs/mft	Mils/OD	lbs/mft	Ohms/mft
30 1/30	10/.030"	1	15/.040"	1	6/.022"	1	106.0
30 7/38	10/.032"	1	15/.042"	1	6/.024"	1	100.0
28 1/28	10/.033"	2	15/.043"	2	6/.025"	1	66.7
28 7/36	10/.035"	2	15/.045"	2	6/.027"	1	63.6
28 19/40	10/.035"	2	15/.045"	2	6/.027"	1	63.1
26 1/26	10/.036"	2	15/.046"	2	6/.028"	2	41.9
26 7/34	10/.039"	2	15/.049"	2	6/.031"	2	39.7
26 19/38	10/.039"	2	15/.049"	2	6/.031"	2	37.3
24 1/24	10/.040"	3	15/.050"	3	6/.032"	3	26.2
24 7/32	10/.044"	3	15/.054"	3	6/.036"	3	24.5
24 19/36	10/.045"	3	15/.055"	3	6/.036"	3	23.6
22 1/22	10/.045"	4	15/.055"	4	6/.038"	3	16.5
22 7/30	10/.050"	4	15/.060"	4	6/.042"	3	15.6
22 19/34	10/.051"	4	15/.061"	5	6/.042"	4	14.8
20 1/20	10/.052"	5	15/.062"	6	6/.044"	5	10.3
20 7/28	10/.058"	5	15/.068"	6	6/.050"	5	9.8
20 19/32	10/.058"	5	15/.068"	7	6/.050"	5	9.1
18 7/26	10/.069"	8	15/.079"	9	-	-	6.2
18 19/30	10/.069"	8	15/.079"	9	-	-	5.8
16 19/29	13/.080"	10	18/.089"	11	-	-	4.5
14 19/27	13/.095"	15	18/.106"	17	-	-	2.9
12 19/25	15/.114"	23	21/.125"	35	-	-	1.8
10 37/26	13/.134"	35	19/.145"	68	-	-	1.2
8 133/29	-	-	24/.209"	107	-	-	0.7

Please contact your sales representative for detailed information at sales@lapptannehill.com



NEMA HP3/HP4 REFERENCE GUIDE



Construction

X = Extruded
W = Wrapped (HP3 only)

AWG Size

B	30
C	28
D	26
E	24
F	22
G	20
H	18
J	16
K	14
L	12
M	10
N	8
P	6
R	4
S	2
T	1
U	1/0
W	2/0
Y	3/0
Z	4/0

NEMA Type

HP3	Dielectric
E	PTFE
EE	PTFE
ET	PTFE
HP4	Dielectric
K	FEP
KK	FEP
KT	FEP

Conductor

B	Silver plated copper
C	Nickel plated copper
D	Silver plated high-strength alloy
E	Nickel plated high-strength alloy
F	Silver plated copper clad steel
G	Nickel plated copper clad steel
H	Tin plated copper (HP4 only)

Stranding

A	1
B	7
E	19
G	37
L	133
P	665
R	817
S	1045
T	1330
V	1665
W	2109

Color Code

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




SAE-AS22759 Mineral Filled PTFE Replaces MIL-W-22759/5, /6, /7, /8

Construction: **Conductors:** Stranded silver or nickel plated conductor; **Insulation:** Extruded mineral filled Polytetrafluoroethylene (PTFE)

Technical Data:

 **Temperature:** See below

 **Rated Voltage:** 600V

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow,
5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

 **Approvals:**
Printed in accordance with SAE-AS22759

	AS22759/5		AS22759/6		AS22759/7		AS22759/8	
Temperature (° C)	200°C		260°C		200°C		260°C	
Conductor Type	SPC		NPC		SPC		NPC	
AWG/Stranding	Mils/OD	lbs/mft	Mils/OD	lbs/mft	Mils/OD	lbs/mft	Mils/OD	lbs/mft
24 19/36	26/.075"	6	26/.075"	6	19/.062"	4	19/.062"	4
22 19/34	27/.085"	8	27/.085"	8	21/.073"	6	21/.073"	6
20 19/32	28/.095"	10	28/.095"	10	22/.082"	8	22/.082"	8
18 19/30	31/.110"	14	31/.110"	14	22/.092"	11	22/.092"	11
16 19/29	35/.125"	18	35/.125"	18	24/.102"	14	24/.102"	14
14 19/27	37/.143"	25	37/.143"	25	23/.115"	19	23/.115"	19
12 19/25	38/.160"	35	38/.160"	35	24/.134"	29	24/.134"	29
10 37/26	35/.179"	48	35/.179"	48	25/.158"	42	24/.158"	42
8 133/29	43/.248"	84	42/.248"	84	28/.220"	73	27/.220"	73
6 133/27	47/.300"	126	46/.300"	126	32/.270"	111	31/.270"	111
4 133/25	48/.355"	188	47/.355"	180	35/.328"	169	33/.328"	169

	DC Resistance Ohms/mft	
AWG/Stranding		
Conductor Type	SPC	NPC
24 19/36	24.3	25.9
22 19/34	15.1	16.0
20 19/32	9.2	9.8
18 19/30	5.8	6.1
16 19/29	4.5	4.8
14 19/27	2.9	3.0
12 19/25	1.8	1.9
10 37/26	1.2	1.2
8 133/29	.7	.7
6 133/27	.4	.4
4 133/25	.3	.3




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SAE-AS22759 Extruded PTFE Replaces MIL-W-22759/9, /10, /11, /12

Construction: **Conductors:** Stranded silver or nickel plated copper; **Insulation:** Extruded Polytetrafluoroethylene (PTFE)

Technical Data:

 **Temperature:** See below

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

 **Approvals:**
Printed in accordance with SAE-AS22759

	AS22759/9	AS22759/10	AS22759/11	AS22759/12
Voltage Rating	1000	1000	600	600
Temperature (° C)	200°C	260°C	200°C	260°C
Conductor Type	SPC	NPC	SPC	NPC
AWG/Stranding	Mils/OD lbs/mft	Mils/OD lbs/mft	Mils/OD lbs/mft	Mils/OD lbs/mft
28 7/36	14/.043" 2	14/.043" 2	9/.033" 2	9/.033" 2
26 19/38	15/.048" 3	14/.048" 3	10/.038" 2	10/.038" 2
24 19/36	15/.053" 4	14/.053" 4	10/.043" 3	10/.043" 3
22 19/34	15/.060" 5	15/.060" 5	9/.049" 4	9/.049" 4
20 19/32	15/.068" 7	15/.068" 7	10/.058" 6	10/.058" 6
18 19/30	15/.078" 9	15/.078" 9	10/.068" 8	10/.068" 8
16 19/29	15/.085" 11	15/.085" 10	10/.075" 10	10/.075" 10
14 19/27	16/.100" 17	16/.100" 17	11/.090" 15	11/.090" 15
12 19/25	17/.120" 24	17/.120" 24	13/.111" 23	13/.111" 23
10 37/26	-	-	15/.139" 35	15/.139" 35
8 133/29	-	-	19/.204" 66	19/.204" 66

	DC Resistance Ohms/mft	
AWG/Stranding		
Conductor Type	SPC	NPC
28 7/36	63.8	67.9
26 19/38	38.4	42.2
24 19/36	24.3	25.9
22 19/34	15.1	16.0
20 19/32	9.2	9.8
18 19/30	5.8	6.1
16 19/29	4.5	4.8
14 19/27	2.9	3.0
12 19/25	1.8	1.9
10 37/26	1.2	1.2
8 133/29	0.7	0.7



Military/Aerospace Wire & Cable

SAE-AS22759 Extruded ETFE Replaces MIL-W-22759/16, /17, /18, /19

Construction: **Conductors:** Stranded tin plated copper or silver plated high strength alloy; **Insulation:** Extruded ETFE

Technical Data:

 **Temperature:** 150°C



Color Code: Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

 **Approvals:**

Printed in accordance with SAE-AS22759

 **Voltage:** 600V

	AS22759/16	AS22759/17	AS22759/18	AS22759/19
Conductor Type	TPC	SPA	TPC	SPA
AWG/Stranding	Mils/OD lbs/mft	Mils/OD lbs/mft	Mils/OD lbs/mft	Mils/OD lbs/mft
26 19/38	-	11/.040" 2	7/.032" 2	6/.032" 2
24 19/36	15/.053" 3	11/.045" 3	7/.036" 2	6/.036" 2
22 19/34	15/.060" 4	11/.052" 4	7/.043" 3	6/.043" 3
20 19/32	15/.068" 5	11/.060" 5	7/.051" 5	6/.051" 5
18 19/30	12/.071" 8	-	7/.061" 6	-
16 19/29	13/.079" 10	-	9/.070" 8	-
14 19/27	13/.093" 15	-	9/.085" 14	-
12 37/28	14/.114" 22	-	11/.107" 21	-
10 37/26	15/.139" 33	-	13/.134" 33	-
8 133/29	18/.199" 62	-	-	-
6 133/27	23/.250" 97	-	-	-
4 133/25	27/.312" 150	-	-	-
2 665/30	29/.388" 250	-	-	-
1 817/30	31/.431" 300	-	-	-
0 1045/30	32/.479" 370	-	-	-
00 1330/30	44/.546" 480	-	-	-

DC Resistance Ohms/mft		
AWG/Stranding	TPC	SPA
Conductor Type	TPC	SPA
26 19/38	41.3	44.8
24 19/36	26.2	28.4
22 19/34	16.2	17.5
20 19/32	9.9	10.7
18 19/30	6.2	-
16 19/29	4.8	-
14 19/27	3.1	-
12 37/28	2.0	-
10 37/26	1.3	-
8 133/29	0.7	-
6 133/27	0.4	-
4 133/25	0.3	-
2 665/30	0.2	-
1 817/30	0.16	-
0 1045/30	0.12	-
00 1330/30	0.09	-




Military/Aerospace Wire & Cable

SAE-AS22759 Extruded PTFE *Replaces MIL-W-22759/20, /21, /22, /23*

Construction: **Conductors:** Stranded silver or nickel high strength alloy; **Insulation:** Extruded Polytetrafluoroethylene (PTFE)

Technical Data:

 **Temperature:** See below

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

 **Approvals:**
Printed in accordance with SAE-AS22759

	AS22759/20	AS22759/21	AS22759/22	AS22759/23
Voltage Rating	1000	1000	600	600
Temperature (° C)	200°C	260°C	200°C	260°C
Conductor Type	SPA	NPA	SPA	NPA
AWG/Stranding	Mils/OD lbs/mft	Mils/OD lbs/mft	Mils/OD lbs/mft	Mils/OD lbs/mft
28 7/36	15/.043" 4	15/.043" 4	10/.033" 3	10/.033" 3
26 19/38	15/.048" 4	15/.048" 4	10/.038" 3	10/.038" 3
24 19/36	15/.053" 4	15/.053" 4	10/.043" 3	10/.043" 3
22 19/34	15/.060" 5	15/.060" 5	10/.049" 4	10/.049" 4
20 19/32	15/.068" 6	15/.068" 6	10/.058" 6	10/.058" 6

	DC Resistance Ohms/mft	
AWG/Stranding		
Conductor Type	SPC	NPC
28 7/36	63.8	67.9
26 19/38	38.4	42.2
24 19/36	24.3	25.9
22 19/34	15.1	16.0
20 19/32	9.2	9.8

Specifications subject to change. For complete specifications and availability visit www.lapptannehill.com



SAE AS 22759 Reference Guide



Style	AWG sizes	Conductor	Voltage	Temp °C	WC27500	Dielectric material
22759/5	24-4	SPC	600	200°	VA	Extruded Mineral filled PTFE
22759/6	24-4	NPC	600	260°	WA	Extruded Mineral filled PTFE
22759/7	24-4	SPC	600	200°	SA	Extruded Mineral filled PTFE
22759/8	24-4	NPC	600	260°	TA	Extruded Mineral filled PTFE
22759/9	28-12	SPC	1000	200°	LE	Extruded PTFE
22759/10	28-12	NPC	1000	260°	LH	Extruded PTFE
22759/11	28-8	SPC	600	200°	RC	Extruded PTFE
22759/12	28-8	NPC	600	260°	RE	Extruded PTFE
22759/20	28-20	SPA	1000	200°	TK	Extruded PTFE
22759/21	28-20	NPA	1000	260°	TL	Extruded PTFE
22759/22	28-20	SPA	600	200°	TM	Extruded PTFE
22759/23	28-20	NPA	600	260°	TN	Extruded PTFE
22759/16	24-2/0	TPC	600	150°	TE	Extruded ETFE
22759/17	26-20	SPA	600	150°	TF	Extruded ETFE
22759/18	26-10	TPC	600	150°	TG	Extruded ETFE
22759/19	26-20	SPA	600	150°	TH	Extruded ETFE

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Military/Aerospace Wire & Cable

NEMA WC 27500 Type RC-06 *Replaces MIL-C-27500*


Construction: **Conductors:** Stranded silver plated copper;

Insulation: Extruded Polytetrafluoroethylene (PTFE), Silver plated copper braid 90% coverage, White PTFE tape wrapped jacket

Technical Data:

 **Temperature:** 200°C

 **Color Code:**
Standard color coding available

 **Approvals:**
Primary conductors manufactured in accordance to SAE-AS 22759

 **Rated Voltage:** 600V



Part Number	AWG/Stranding	Primary Diameter	Shield Diameter	Cable Diameter	Weight/mft
27500-26RC1S06	26 19/38	.038"	.054"	.072"	6
27500-26RC2S06	26 19/38	.038"	.092"	.116"	10
27500-26RC3S06	26 19/38	.038"	.098"	.123"	13
27500-26RC4S06	26 19/38	.038"	.108"	.135"	16
27500-24RC1S06	24 19/36	.043"	.059"	.085"	7
27500-24RC2S06	24 19/36	.043"	.102"	.128"	13
27500-24RC3S06	24 19/36	.043"	.109"	.134"	16
27500-24RC4S06	24 19/36	.043"	.120"	.144"	19
27500-22RC1S06	22 19/34	.049"	.065"	.090"	10
27500-22RC2S06	22 19/34	.049"	.114"	.141"	15
27500-22RC3S06	22 19/34	.049"	.122"	.143"	20
27500-22RC4S06	22 19/34	.049"	.135"	.159"	25
27500-20RC1S06	20 19/32	.058"	.074"	.098"	11
27500-20RC2S06	20 19/32	.058"	.132"	.158"	20
27500-20RC3S06	20 19/32	.058"	.141"	.164"	27
27500-20RC4S06	20 19/32	.058"	.156"	.181"	35
27500-18RC1S06	18 19/30	.068"	.084"	.109"	15
27500-18RC2S06	18 19/30	.068"	.152"	.176"	28
27500-18RC3S06	18 19/30	.068"	.163"	.188"	38
27500-18RC4S06	18 19/30	.068"	.181"	.207"	47
27500-16RC1S06	16 19/29	.075"	.091"	.117"	17
27500-16RC2S06	16 19/29	.075"	.166"	.192"	33
27500-16RC3S06	16 19/29	.075"	.178"	.202"	46
27500-16RC4S06	16 19/29	.075"	.198"	.224"	59
27500-14RC1S06	14 19/27	.090"	.106"	.131"	23
27500-14RC2S06	14 19/27	.090"	.196"	.221"	45
27500-14RC3S06	14 19/27	.090"	.210"	.237"	62
27500-14RC4S06	14 19/27	.090"	.233"	.263"	79
27500-12RC1S06	12 19/25	.111"	.127"	.151"	33
27500-12RC2S06	12 19/25	.111"	.238"	.262"	68


NEMA WC 27500 Type RC-09 *Replaces MIL-C-27500*


Construction: Conductors: Stranded silver plated copper;

Insulation: Extruded Polytetrafluoroethylene (PTFE), Silver plated copper braid 90% coverage, White extruded FEP jacket

Technical Data:

 **Temperature:** 200°C

 **Color Code:**
Standard color coding available

 **Approvals:**
Primary conductors manufactured in accordance to SAE-AS 22759

 **Rated Voltage:** 600V



Part Number	AWG/Stranding	Primary Diameter	Shield Diameter	Cable Diameter	Weight/mft
27500-26RC1S09	26 19/38	.038"	.054"	.073"	6
27500-26RC2S09	26 19/38	.038"	.092"	.110"	10
27500-26RC3S09	26 19/38	.038"	.098"	.116"	13
27500-26RC4S09	26 19/38	.038"	.108"	.126"	16
27500-24RC1S09	24 19/36	.043"	.059"	.075"	7
27500-24RC2S09	24 19/36	.043"	.102"	.118"	13
27500-24RC3S09	24 19/36	.043"	.109"	.127"	16
27500-24RC4S09	24 19/36	.043"	.120"	.138"	19
27500-22RC1S09	22 19/34	.049"	.065"	.083"	10
27500-22RC2S09	22 19/34	.049"	.114"	.132"	15
27500-22RC3S09	22 19/34	.049"	.122"	.138"	20
27500-22RC4S09	22 19/34	.049"	.135"	.153"	25
27500-20RC1S09	20 19/32	.058"	.074"	.090"	11
27500-20RC2S09	20 19/32	.058"	.132"	.150"	20
27500-20RC3S09	20 19/32	.058"	.141"	.156"	27
27500-20RC4S09	20 19/32	.058"	.156"	.180"	35
27500-18RC1S09	18 19/30	.068"	.084"	.102"	15
27500-18RC2S09	18 19/30	.068"	.152"	.176"	28
27500-18RC3S09	18 19/30	.068"	.163"	.187"	38
27500-18RC4S09	18 19/30	.068"	.181"	.205"	47
27500-16RC1S09	16 19/29	.075"	.091"	.109"	17
27500-16RC2S09	16 19/29	.075"	.166"	.190"	33
27500-16RC3S09	16 19/29	.075"	.178"	.202"	46
27500-16RC4S09	16 19/29	.075"	.198"	.222"	59
27500-14RC1S09	14 19/27	.090"	.106"	.124"	23
27500-14RC2S09	14 19/27	.090"	.196"	.220"	45
27500-14RC3S09	14 19/27	.090"	.210"	.235"	62
27500-14RC4S09	14 19/27	.090"	.233"	.258"	79
27500-12RC1S09	12 19/25	.111"	.127"	.145"	33
27500-12RC2S09	12 19/25	.111"	.238"	.262"	68

Military/Aerospace Wire & Cable


NEMA WC 27500 Type TE-14 Replaces MIL-C-27500


Construction: **Conductors:** Stranded tin plated copper;

Insulation: Extruded ETFE, Tin plated copper braid 90% coverage, White extruded ETFE jacket

Technical Data:

 **Temperature:** 150°C

 **Color Code:**
Standard color coding available

 **Approvals:**
Primary conductors manufactured in
accordance to SAE-AS 22759

 **Rated Voltage:** 600V



Part Number	AWG/Stranding	Primary Dielectric	Shield Diameter	Cable Diameter	Weight/mft
27500-24TE1T14	24 19/36	.045"	.061"	.077"	7
27500-24TE2T14	24 19/36	.045"	.106"	.122"	13
27500-24TE3T14	24 19/36	.045"	.113"	.130"	15
27500-24TE4T14	24 19/36	.045"	.125"	.143"	19
27500-22TE1T14	22 19/34	.052"	.068"	.084"	8
27500-22TE2T14	22 19/34	.052"	.120"	.134"	15
27500-22TE3T14	22 19/34	.052"	.128"	.145"	19
27500-22TE4T14	22 19/34	.052"	.142"	.160"	25
27500-20TE1T14	20 19/32	.060"	.076"	.092"	10
27500-20TE2T14	20 19/32	.060"	.136"	.152"	19
27500-20TE3T14	20 19/32	.060"	.145"	.161"	25
27500-20TE4T14	20 19/32	.060"	.161"	.183"	32
27500-18TE1T14	18 19/30	.071"	.087"	.103"	14
27500-18TE2T14	18 19/30	.071"	.158"	.180"	26
27500-18TE3T14	18 19/30	.071"	.169"	.193"	36
27500-18TE4T14	18 19/30	.071"	.187"	.211"	45
27500-16TE1T14	16 19/29	.079"	.095"	.111"	16
27500-16TE2T14	16 19/29	.079"	.174"	.198"	31
27500-16TE3T14	16 19/29	.079"	.180"	.208"	43
27500-16TE4T14	16 19/29	.079"	.207"	.231"	54
27500-14TE1T14	14 19/27	.093"	.109"	.127"	22
27500-14TE2T14	14 19/27	.093"	.202"	.226"	43
27500-14TE3T14	14 19/27	.093"	.216"	.240"	60
27500-14TE4T14	14 19/27	.093"	.241"	.265"	76
27500-12TE1T14	12 19/25	.114"	.130"	.148"	30
27500-12TE2T14	12 19/25	.114"	.244"	.268"	60
27500-12TE3T14	12 19/25	.114"	.262"	.292"	86
27500-12TE4T14	12 19/25	.114"	.295"	.325"	114


NEMA WC 27500 Type TG-14 Replaces MIL-C-27500


Construction: Conductors: Stranded tin plated copper;

Insulation: Extruded ETFE, Tin plated copper braid 90% coverage, White extruded ETFE jacket

Technical Data:

 **Temperature:** 150°C

 **Color Code:**
Standard color coding available

 **Approvals:**
Primary conductors manufactured in accordance to SAE-AS 22759

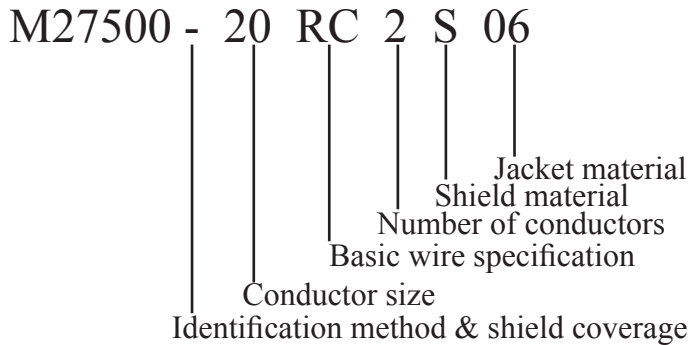
 **Rated Voltage:** 600V



Part Number	AWG/Stranding	Primary Diameter	Shield Diameter	Cable Diameter	Weight/mft
27500-24TG1T14	24 19/36	.036"	.052"	.068"	6
27500-24TG2T14	24 19/36	.036"	.088"	.094"	9
27500-24TG3T14	24 19/36	.036"	.094"	.109"	12
27500-24TG4T14	24 19/36	.036"	.103"	.121"	15
27500-22TG1T14	22 19/34	.043"	.059"	.075"	7
27500-22TG2T14	22 19/34	.043"	.102"	.118"	12
27500-22TG3T14	22 19/34	.043"	.109"	.125"	17
27500-22TG4T14	22 19/34	.043"	.120"	.136"	20
27500-20TG1T14	20 19/32	.051"	.067"	.073"	9
27500-20TG2T14	20 19/32	.051"	.118"	.134"	18
27500-20TG3T14	20 19/32	.051"	.133"	.144"	22
27500-20TG4T14	20 19/32	.051"	.139"	.155"	27
27500-18TG1T14	18 19/30	.061"	.077"	.092"	12
27500-18TG2T14	18 19/30	.061"	.138"	.154"	23
27500-18TG3T14	18 19/30	.061"	.147"	.164"	31
27500-18TG4T14	18 19/30	.061"	.163"	.187"	40
27500-16TG1T14	16 19/29	.070"	.086"	.092"	15
27500-16TG2T14	16 19/29	.070"	.158"	.179"	28
27500-16TG3T14	16 19/29	.070"	.167"	.190"	39
27500-16TG4T14	16 19/29	.070"	.185"	.209"	72
27500-14TG1T14	14 19/27	.085"	.101"	.117"	21
27500-14TG2T14	14 19/27	.085"	.186"	.211"	40
27500-14TG3T14	14 19/27	.085"	.199"	.223"	56
27500-14TG4T14	14 19/27	.085"	.221"	.245"	72
27500-12TG1T14	12 19/25	.107"	.123"	.139"	30
27500-12TG2T14	12 19/25	.107"	.230"	.252"	59
27500-12TG3T14	12 19/25	.107"	.247"	.265"	83
27500-12TG4T14	12 19/25	.107"	.278"	.302"	111

Military/Aerospace Wire & Cable

WC27500 Reference Guide



Identification method & shield coverage

Coverage		
85%	90%	
-	C	White insulation w/stripe (Table 1)
A	D	Solid colors (Table 1)
F	H	White insulation w/stripes (Table 2)
G	J	Solid colors (Table 2)
U	V	Color by procurement

Table 1

1	White		8	Violet
2	Blue		9	Gray
3	Orange		10	Brown
4	Green		11	Blue/Blue
5	Red		12	Orange/Orange
6	Black		13	Green/Green
7	Yellow		14	Red/Red
			15	Black/Black

Table 2

1	Red		8	Orange
2	Blue		9	Violet
3	Yellow		10	Gray
4	Green		11	Red/White
5	White		12	Blue/White
6	Black		13	Yellow/White
7	Brown		14	Green/White
			15	Black/White

Colors same for stripes & solids

Basic Wire Specifications

VA	M22759/5
WA	M22759/6
SA	M22759/7
TA	M22759/8
LE	M22759/9
LH	M22759/10
RC	M22759/11
RE	M22759/12
TE	M22759/16
TF	M22759/17
TG	M22759/18
TH	M22759/19
TK	M22759/20
TL	M22759/21
TM	M22759/22
TN	M22759/23

Shield material

Single	Double	Material
U	--	No shield
T	V	TPC, round
S	W	SPC, round
N	Y	NPC, round
M	K	SPAlloy, round
P	L	NPAlloy, round
G	A	SPC, flat
H	B	SPAlloy, flat
J	D	TPC, flat
E	X	NPAlloy, flat

Jacket material

Single	Double	Material
00	00	No jacket
01	51	White PVC
05	55	Clear FEP
06	56	White TFE
09	59	White FEP
14	64	White ETFE
15	65	Clear ETFE
20	70	White PFA
21	71	Clear PFA



STJ Cables


Construction: **Conductors:** Stranded silver plated copper;


Insulation: Extruded Polytetrafluoroethylene (PTFE), Silver plated copper braid 85% coverage, White PTFE tape wrapped jacket

Technical Data:

 **Temperature:** 200°C

 **Rated Voltage:** 600V

 **Color Code:**
Standard color coding available

 **Approvals:**
Primary conductors manufactured in accordance to NEMA HP-3



Part Number	AWG/Stranding	Primary Diameter	Shield Diameter	Cable Diameter	Weight/mft
1XE26-734STJ	26 7/34	.038"	.054"	.072"	6
2XE26-734STJ	26 7/34	.038"	.092"	.116"	10
3XE26-734STJ	26 7/34	.038"	.098"	.123"	13
4XE26-734STJ	26 7/34	.038"	.108"	.135"	16
1XE24-19/36STJ	24 19/36	.043"	.059"	.085"	7
2XE24-19/36STJ	24 19/36	.043"	.102"	.128"	13
3XE24-19/36STJ	24 19/36	.043"	.109"	.134"	16
4XE24-19/36STJ	24 19/36	.043"	.120"	.144"	19
1XE22-19/34STJ	22 19/34	.049"	.065"	.090"	10
2XE22-19/34STJ	22 19/34	.049"	.114"	.141"	15
3XE22-19/34STJ	22 19/34	.049"	.122"	.143"	20
4XE22-19/34STJ	22 19/34	.049"	.135"	.159"	25
1XE20-19/32STJ	20 19/32	.058"	.074"	.098"	11
2XE20-19/32STJ	20 19/32	.058"	.132"	.158"	20
3XE20-19/32STJ	20 19/32	.058"	.141"	.164"	27
4XE20-19/32STJ	20 19/32	.058"	.156"	.181"	35
1XE18-19/30STJ	18 19/30	.068"	.084"	.109"	15
2XE18-19/30STJ	18 19/30	.068"	.152"	.176"	28
3XE18-19/30STJ	18 19/30	.068"	.163"	.188"	38
4XE18-19/30STJ	18 19/30	.068"	.181"	.207"	47
1XE16-19/29STJ	16 19/29	.075"	.091"	.117"	17
2XE16-19/29STJ	16 19/29	.075"	.166"	.192"	33
3XE16-19/29STJ	16 19/29	.075"	.178"	.202"	46
4XE16-19/29STJ	16 19/29	.075"	.198"	.224"	59
1XE14-19/27STJ	14 19/27	.090"	.106"	.131"	23
2XE14-19/27STJ	14 19/27	.090"	.196"	.221"	45
3XE14-19/27STJ	14 19/27	.090"	.210"	.237"	62
4XE14-19/27STJ	14 19/27	.090"	.233"	.263"	79
1XE12-19/25STJ	12 19/25	.111"	.127"	.151"	33
2XE12-19/25STJ	12 19/25	.111"	.238"	.262"	68

Military/Aerospace Wire & Cable

SE Cables


Construction: **Conductors:** Stranded silver plated copper;

Insulation: Extruded Polytetrafluoroethylene (PTFE), Silver plated copper braid 85% coverage, White extruded FEP jacket

Technical Data:

 **Temperature:** 200° C

 **Color Code:**
Standard color coding available

 **Approvals:**
Primary conductors manufactured in accordance to NEMA HP-3

 **Rated Voltage:** 600V

Part Number	AWG/Stranding	Primary Diameter	Shield Diameter	Cable Diameter	Weight/mft
1XE24-19/36SE	24 19/36	.043"	.059"	.075"	7
2XE24-19/36SE	24 19/36	.043"	.102"	.118"	13
3XE24-19/36SE	24 19/36	.043"	.109"	.127"	16
4XE24-19/36SE	24 19/36	.043"	.120"	.138"	19
1XE22-19/34SE	22 19/34	.049"	.065"	.083"	10
2XE22-19/34SE	22 19/34	.049"	.114"	.132"	15
3XE22-19/34SE	22 19/34	.049"	.122"	.138"	20
4XE22-19/34SE	22 19/34	.049"	.135"	.153"	25
1XE20-19/32SE	20 19/32	.058"	.074"	.090"	11
2XE20-19/32SE	20 19/32	.058"	.132"	.150"	20
3XE20-19/32SE	20 19/32	.058"	.141"	.156"	27
4XE20-19/32SE	20 19/32	.058"	.156"	.180"	35
1XE18-19/30SE	18 19/30	.068"	.084"	.102"	15
2XE18-19/30SE	18 19/30	.068"	.152"	.176"	28
3XE18-19/30SE	18 19/30	.068"	.163"	.187"	38
4XE18-19/30SE	18 19/30	.068"	.181"	.205"	47
1XE16-19/29SE	16 19/29	.075"	.091"	.109"	17
2XE16-19/29SE	16 19/29	.075"	.166"	.190"	33
3XE16-19/29SE	16 19/29	.075"	.178"	.202"	46
4XE16-19/29SE	16 19/29	.075"	.198"	.222"	59
1XE14-19/27SE	14 19/27	.090"	.106"	.124"	23
2XE14-19/27SE	14 19/27	.090"	.196"	.220"	45
3XE14-19/27SE	14 19/27	.090"	.210"	.235"	62
4XE14-19/27SE	14 19/27	.090"	.233"	.258"	79
1XE12-19/25SE	12 19/25	.111"	.127"	.145"	33
2XE12-19/25SE	12 19/25	.111"	.238"	.262"	68

Please contact your sales representative for detailed information at sales@lapptannehill.com



MIL-C-17 Coaxial Cables - including M17/176-00001 Twinaxial Data Bus Cables

Harbour Industries is a QPL approved manufacturer of high temperature, high performance coaxial cables supplied in exact accordance with the MIL-C-17 specification. The information referenced has been taken from the MIL-C-17 “slant sheets” which define complete physical and electrical characteristics for each MIL-C-17 part number including dimensional parameters, dielectric materials, shield constructions, VSWR, and maximum attenuation over various frequency ranges. For complete individual slant sheets, see the Defense Supply Center Columbus (DSCC) link in the Industry Links section of Harbour’s website.

The Importance of VSWR Sweep Testing

When selecting a 50 ohm coaxial cable, constructions with VSWR requirements are highly recommended. Manufacturing and sweep testing cables with concern for VSWR ensures a quality cable free of spikes over the frequency range referenced on the slant sheet.

Precision PTFE Dielectrics Used

All of the PTFE dielectric coax cables listed are high temperature, high performance constructions exhibiting high dielectric strength and low capacitance in proportion to the cable’s dielectric constant. Harbour manufactures all PTFE dielectric cable constructions with tolerances tighter than the MIL-C-17 specification to ensure uniformity of electrical characteristics, especially impedance, attenuation, and VSWR.

Constructions with PTFE Tape Wrapped Jackets

Harbour manufactures PTFE tape wrapped cables - specifically RG187 A/U, RG188 A/U, RG195 A/U, and RG196 A/U - in accordance with a previous revision of the MIL-C-17 specification. These constructions can withstand operating temperatures up to 250° versus 200°C for FEP jacketed cables. PTFE tape wrapped cables are generally more flexible than their FEP jacketed counterpart. Alternative 250° constructions are also available with PFA jackets.

M17 Part	Center Conductor	Dielectric Diameter	Shield	Shield Diameter	Jacket	Overall Diameter	Bend Radius	Weight (lbs/mft)	Comments
M17/60-RG142	.037" SCCS	.116"	SPC (2)	.160"	FEP	.195"	1.0"	43.0	
M17/93-RG178	.0120" (7/.004")SCCS	.033"	SPC	.051"	FEP	.071"	0.4"	6.3	
M17/94-RG179	.0120" (7/.004")SCCS	.063"	SPC	.080"	FEP	.100"	0.4"	10.8	
M17/95-RG180	.0120" (7/.004")SCCS	.102"	SPC	.118"	FEP	.141"	0.7"	19.8	
M17/111-RG303	.037" SCCS	.116"	SPC	.136"	FEP	.170"	0.9"	31.0	
M17/112-RG304	.059" SCCS	.185"	SPC (2)	.240"	FEP	.280"	1.4"	94.0	
M17/113-RG316	.0201" (7/.0067")SCCS	.060"	SPC	.075"	FEP	.098"	0.5"	12.2	
M17/127-RG393	.094" (7/.0312") SPC	.285"	SPC (2)	.314"	FEP	.390"	2.0"	165.0	
M17/128-RG400	.0384" (19/.008") SPC	.116"	SPC (2)	.156"	FEP	.195"	1.0"	50.0	
M17/131-RG403	.0120" (7/.004")SCCS	.033"	SPC (2)	.090"	FEP (2)	.116"	0.6"	15.0	Triaxial RG-178
M17/152-00001	.0201" (7/.0067")SCCS	.060"	SPC (2)	.091"	FEP	.114"	0.6"	18.5	Double Shield RG-316
M17/158-00001**	.037" SCCS	.116"	SPC (2)	.160"	FEP	.195"	1.0"	56.0	Use M17/60-RG142
M17/169-00001**	.0120" (7/.004")SCCS	.033"	SPC	.051"	FEP	.071"	0.4"	6.3	Use M17/93-RG178
M17/170-00001**	.037" SCCS	.116"	SPC	.136"	FEP	.170"	0.9"	39.0	Use M17/111-RG303
M17/172-00001**	.0120" (7/.004")SCCS	.060"	SPC	.075"	FEP	.098"	0.5"	11.5	Use M17/113-RG316
M17/175-00001**	.0384" (19/.008")SPC	.116"	SPC (2)	.156"	FEP	.195"	1.0"	50.0	Use M17/128-RG400
M17/176-00002	.0235" (19/.005")SPA(2)	.042"	SPA	.100"	PFA	.129"	0.6"	18.0	Twinax
RG187 A/U	.0120" (7/.004")SCCS	.063"	SPC	.079"	PTFE	.100"	0.5"	10.0	Tape Wrapped Jacket
RG188 A/U	.0201" (7/.0067")SCCS	.060"	SPC	.080"	PTFE	.100"	0.5"	11.0	Tape Wrapped Jacket
RG195 A/U	.0129" (7/.004")SCCS	.102"	SPC	.117"	PTFE	.141"	0.7"	18.0	Tape Wrapped Jacket
RG196 A/U	.0120" (7/.004")SCCS	.034"	SPC	.050"	PTFE	.067"	0.4"	6.0	Tape Wrapped Jacket

** DSCC has removed these part numbers from MIL-DTL-17.

Military/Aerospace Wire & Cable

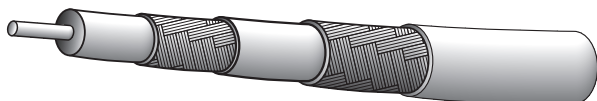
MIL-C-17 Coaxial Cables - including M17/176-00001 Twinaxial Data Bus Cables



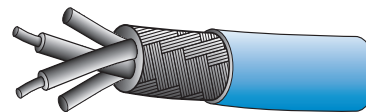
Single Braid



Double Braid



Triaxial



Twinax

M17 Part	Impedance (ohms)	Capacitance (pF/ft)	Max Voltage	Attenuation (dB/100 ft)							Max Frequency (GHz)
				100 MHz Typ/Max	400 MHz Typ/Max	1 GHz Typ/Max	2.4 GHz Typ/Max	5 GHz Typ/Max	10 GHz Typ/Max		
M17/60-RG142	50 +/-2	29.4	1900	4.0 / 5.5	8.1 / 11.7	13.4 / 19.2	21.3 / 30.4	33.3 / 48.7		12.4	
M17/93-RG178	50 +/-2	29.4	1000	13.0 / 16.0	27.2 / 33.0	44.2 / 52.0	61.9 / 83.3				
M17/94-RG179	75 +/-3	19.4	1200	8.0 / 9.2	15.5 / 21.0	26.7 / 30.7					
M17/95-RG180	95 +/-5	17.4	1500	5.7 / 6.6	11.7 / 17.4	19.2 / 23.0					
M17/111-RG303	50 +/-2	29.4	1900	3.5 / 3.9	7.2 / 8.0	13.5 / 15.0					
M17/112-RG304	50 +/-2	29.4	3000	2.4 / 2.7	5.8 / 6.4	10.0 / 11.1				8.0	
M17/113-RG316	50 +/-2	29.4	1200	7.6 / 11.0	16.0 / 21.0	26.2 / 38.0	41.2 / 55.4			3.0	
M17/127-RG393	50 +/-2	29.4	1500	2.3 / 2.5	4.4 / 5.0	7.7 / 9.2	12.4 / 14.2	21.3 / 26.8	30.1 / 37.9	11.0	
M17/128-RG400	50 +/-2	29.4	1900	4.3 / 4.5	8.6 / 10.5	14.1 / 18.1	22.6 / 30.2	35.6 / 52.1	61.6 / 78.0	12.4	
M17/131-RG403	50 +/-2	29.4	1000		33.3 / 37.0					10.0	
M17/152-00001	50 +/-2	29.4	1200	8.1 / 11.5	17.8 / 24.0	29.6 / 40.0	43.1 / 58.3	100.0 / 110.0	153.0 / 170.0	12.4	
M17/158-00001**	50 +/-2	29.4	1900		8.1 / 9.5						
M17/169-00001**	50 +/-2	29.4	1000		27.2 / 29.0						
M17/170-00001**	50 +/-2	29.4	1900		7.7 / 8.6						
M17/172-00001**	50 +/-2	29.4	1200		15.5 / 21.0						
M17/175-00001**	50 +/-2	29.4	1900		8.6 / 10.5						
M17/176-00002	77 +/-7	19.0	1000								
RG187 A/U	75 +/-3	19.4	1200		15.5 / 21.0						
RG188 A/U	50 +/-2	29.4	1200	7.6 / 11.0	16.0 / 21.0	26.2 / 38.0	41.2 / 55.4			3.0	
RG195 A/U	95 +/-5	17.4	1500		11.7 / 17.4						
RG196 A/U	50 +/-2	29.4	1000	13.0 / 16.0	27.2 / 33.0	44.2 / 52.0	41.7 / 56.1			3.0	

** DSCC has removed these part numbers from MIL-DTL-17.

UL Approvals for many of the MIL-C-17 cables listed are available upon request.

“**Maximum frequencies**” are those as referenced on individual slant sheets of the MIL-C-17 specification. No values are given above 400MHz for unswept constructions because MIL-C-17 specification recommends these cables should not be used above this frequency.



SAE-AS-22759/32



Construction: Conductors: Tinned Copper;

Insulation: Single Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Technical Data:

Temperature: 150°C

Rated Voltage: 600V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

Approvals:
SAE-AS-22759/32

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/32-30-X	30 7/38	08.4	.024	.610	.66	.98
M22759/32-28-X	28 7/36	68.6	.027	.686	.91	1.35
M22759/32-26-X	26 19/38	41.3	.032	.813	1.4	2.08
M22759/32-24-X	24 19/36	26.2	.037	.940	2.0	2.98
M22759/32-22-X	22 19/34	16.2	.043	1.092	2.8	4.17
M22759/32-20-X	20 19/32	9.88	.050	1.270	4.3	6.40
M22759/32-18-X	18 19/30	6.23	.060	1.524	6.5	9.67
M22759/32-16-X	16 19/29	4.81	.068	1.727	8.3	12.35
M22759/32-14-X	14 19/27	3.06	.085	2.159	13.0	19.35
M22759/32-12-X	12 37/28	2.02	.103	2.616	19.7	29.32

SAE-AS-22759/33



Construction: Conductors: Silver Coated High Strength Copper Alloy;

Insulation: Single Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Technical Data:

Temperature: 200°C

Rated Voltage: 600V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

Approvals:
SAE-AS-22759/33

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/33-30-X	30 7/38	117.4	.024	.610	.66	.98
M22759/32-28-X	28 7/36	74.4	.027	.686	.91	1.35
M22759/32-26-X	26 19/38	44.8	.032	.813	1.4	2.08
M22759/32-24-X	24 19/36	28.4	.037	.940	2.0	2.98
M22759/32-22-X	22 19/34	17.5	.043	1.092	2.8	4.17
M22759/32-20-X	20 19/32	10.7	.050	1.270	4.3	6.40

Check out our complete inventory of products at www.lapptannehill.com

SAE-AS-22759/34



Construction: Conductors: Tinned Copper;

Insulation: Dual Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Technical Data:

Temperature: 150°C

Rated Voltage: 600V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

Approvals:
SAE-AS-22759/34

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/34-24-X	24 19/36	26.20	.045	1.143	2.3	3.42
M22759/34-22-X	22 19/34	16.20	.050	1.270	3.2	4.76
M22759/34-20-X	20 19/32	9.88	.058	1.473	4.7	6.99
M22759/34-18-X	18 19/30	6.23	.070	1.778	7.2	10.71
M22759/34-16-X	16 19/29	4.81	.077	1.956	9.0	13.39
M22759/34-14-X	14 19/27	3.06	.094	2.388	13.8	20.54
M22759/34-12-X	12 37/28	2.02	.111	2.819	20.5	30.51
M22759/34-10-X	10 37/26	1.26	.134	3.404	32.4	48.21
M22759/34-8-X	8 133/29	.701	.195	4.953	60.3	89.73
M22759/34-6-X	6 133/27	.445	.241	6.121	94.5	140.63
M22759/34-4-X	4 133/25	.280	.310	7.874	150.0	223.22
M22759/34-2-X	2 665/30	.183	.405	10.287	239.0	355.68
M22759/34-1-X	1 817/30	.149	.445	11.303	290.0	431.57
M22759/34-01-X	1/0 1045/30	.116	.485	12.319	377.0	561.05
M22759/34-02-X	2/0 1330/30	.091	.545	13.843	487.0	724.75

SAE-AS-22759/35



Construction: Conductors: Silver Coated High Strength Copper Alloy;

Insulation: Dual Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Technical Data:

Temperature: 200°C

Rated Voltage: 600V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red,
3-Orange, 4-Yellow, 5-Green,
6-Blue, 7-Violet, 8-Gray, 9-White,
54-Green/Yellow

Approvals:
SAE-AS-22759/35

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/35-26-X	26 19/38	44.8	.040	1.016	1.7	2.53
M22759/35-24-X	24 19/36	28.4	.045	1.143	2.3	3.42
M22759/35-22-X	22 19/34	17.5	.050	1.270	3.3	4.91
M22759/35-20-X	20 19/32	10.7	.058	1.473	4.8	7.14

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SAE-AS-22759/41



Construction: Conductors: Nickel Coated Copper;
Insulation: Dual Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/41-26-X	26 19/38	42.2	.040	1.016	1.7	2.53
M22759/41-24-X	24 19/36	25.9	.045	1.143	2.3	3.42
M22759/41-22-X	22 19/34	16.0	.050	1.270	3.2	4.76
M22759/41-20-X	20 19/32	9.77	.058	1.473	4.7	6.99
M22759/41-18-X	18 19/30	6.10	.070	1.778	7.2	10.71
M22759/41-16-X	16 19/29	4.76	.077	1.956	9.0	13.39
M22759/41-14-X	14 19/27	3.00	.094	2.388	13.8	20.54
M22759/41-12-X	12 37/28	1.98	.111	2.819	20.5	30.51
M22759/41-10-X	10 37/26	1.24	.134	3.404	32.4	48.21
M22759/41-8-X	8 133/29	.694	.195	4.953	64.2	95.54
M22759/41-6-X	6 133/27	.436	.241	6.121	96.8	144.05
M22759/41-4-X	4 133/25	.275	.310	7.874	163.0	242.56
M22759/41-2-X	2 665/30	.177	.405	10.287	246.0	366.09
M22759/41-1-X	1 817/30	.144	.445	11.303	314.0	467.29
M22759/41-01-X	1/0 1045/30	.113	.485	12.319	421.0	626.53
M22759/41-02-X	2/0 1330/30	.089	.545	13.843	518.0	770.88

Technical Data:

- Temperature:** 200°C
- Rated Voltage:** 600V
- Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow
- Approvals:**
SAE-AS-22759/41

SAE-AS-22759/42

Construction: Conductors: Nickel Coated Copper;
Insulation: Dual Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/42-26-X	26 19/38	49.4	.040	1.016	1.7	2.53
M22759/42-24-X	24 19/36	30.1	.045	1.143	2.3	3.42
M22759/42-22-X	22 19/34	18.6	.050	1.270	3.3	4.91
M22759/42-20-X	20 19/32	11.4	.058	1.473	4.8	7.14

Technical Data:

- Temperature:** 200°C
- Rated Voltage:** 600V
- Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow
- Approvals:**
SAE-AS-22759/42

SAE-AS-22759/43

Construction: Conductors: Silver Coated High Strength Copper;
Insulation: Dual Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/43-26-X	26 19/38	38.4	.040	1.016	1.7	2.53
M22759/43-24-X	24 19/36	24.3	.045	1.143	2.3	3.42
M22759/43-22-X	22 19/34	15.1	.050	1.270	3.2	4.76
M22759/43-20-X	20 19/32	9.19	.058	1.473	4.7	6.99
M22759/43-18-X	18 19/30	5.79	.070	1.778	7.2	10.71
M22759/43-16-X	16 19/29	4.52	.077	1.956	9.0	13.39
M22759/43-14-X	14 19/27	2.88	.094	2.388	13.8	20.54
M22759/43-12-X	12 37/28	1.90	.111	2.819	20.5	30.51
M22759/43-10-X	10 37/26	1.19	.134	3.404	32.4	48.21
M22759/43-8-X	8 133/29	.658	.195	4.953	61.9	92.11
M22759/43-6-X	6 133/27	.418	.241	6.121	94.5	140.63
M22759/43-4-X	4 133/25	.264	.310	7.874	158.0	235.12
M22759/43-2-X	2 665/30	.170	.405	10.287	239.0	355.68
M22759/43-1-X	1 817/30	.139	.445	11.303	305.0	453.90
M22759/41-01-X	1/0 1045/30	.108	.485	12.319	385.0	572.95
M22759/41-02-X	2/0 1330/30	.085	.545	13.843	487.0	724.75

Technical Data:

- Temperature:** 200°C
- Rated Voltage:** 600V
- Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow
- Approvals:**
SAE-AS-22759/43

Military/Aerospace Wire & Cable

SAE-AS-22759/44



Construction: **Conductors:** Silver Coated Copper;
Insulation: Single Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/44-28-X	28 7/36	63.8	.027	.686	.91	1.35
M22759/44-26-X	26 19/38	38.4	.032	.813	1.4	2.08
M22759/44-24-X	24 19/36	24.3	.037	.940	2.0	2.98
M22759/44-22-X	22 19/34	15.1	.043	1.092	2.8	4.17
M22759/44-20-X	20 19/32	9.19	.050	1.270	4.3	6.40
M22759/44-18-X	18 19/30	5.79	.060	1.524	6.5	9.67
M22759/44-16-X	16 19/29	4.52	.068	1.727	8.3	12.35
M22759/44-14-X	14 19/27	2.88	.085	2.159	13.0	19.35
M22759/44-12-X	12 37/28	1.90	.103	2.616	19.7	29.32

Technical Data:

- Temperature:** 200°C
- Rated Voltage:** 600V
- Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow
- Approvals:**
SAE-AS-22759/44

SAE-AS-22759/45

Construction: **Conductors:** Nickel Coated Copper;
Insulation: Single Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/45-28-X	28 7/36	67.9	.027	.686	.91	1.35
M22759/45-26-X	26 19/38	42.2	.032	.813	1.4	2.08
M22759/45-24-X	24 19/36	25.9	.037	.940	2.0	2.98
M22759/45-22-X	22 19/34	16.0	.043	1.092	2.8	4.17
M22759/45-20-X	20 19/32	9.77	.050	1.270	4.3	6.40
M22759/45-18-X	18 19/30	6.10	.060	1.524	6.5	9.67
M22759/45-16-X	16 19/29	4.76	.068	1.727	8.3	12.35
M22759/45-14-X	14 19/27	3.00	.085	2.159	13.0	19.35
M22759/45-12-X	12 37/28	1.98	.103	2.616	19.7	29.32

Technical Data:

- Temperature:** 200°C
- Rated Voltage:** 600V
- Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow
- Approvals:**
SAE-AS-22759/45

SAE-AS-22759/46

Construction: **Conductors:** Nickel Coated High Strength Copper Alloy;
Insulation: Single Insulation of Crosslinked Ethylene-Tetrafluoroethylene (ETFE)

Features:

Small in size, lightweight, and extremely flexible. It exhibits high resistance to flame, chemical attack, radiation, and soldering iron contact.

Military Part No.	Wire AWG/Strand	Resistance at 20°C OHMS 1000' Max.	Nominal Diameter		Maximum Weight	
			Inches	Millimeters	Pounds/ 1000'	Kilograms/ Kilometers
M22759/46-28-X	28 7/36	79.0	.027	.686	.91	1.35
M22759/46-26-X	26 19/38	49.4	.032	.813	1.4	2.08
M22759/46-24-X	24 19/36	30.1	.037	.940	2.0	2.98
M22759/46-22-X	22 19/34	18.6	.043	1.092	2.9	4.32
M22759/46-20-X	20 19/32	11.4	.050	1.270	4.4	6.55

Technical Data:

- Temperature:** 200°C
- Rated Voltage:** 600V
- Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow
- Approvals:**
SAE-AS-22759/46

MIL-W-81822/6

Construction: Conductors: Type A: Silver-plated ETP copper, Type B: Silver-plated OFHC copper, Type C: Silver-plated high strength copper alloy;
Insulation: Extruded PTFE

Part Number	AWG Size	Approx LBS/MFT	Conductor Stranding	Nom. Dia. of Cond.	Max. Resistance @ 20° C OHMS/MFT
M81822/6-A20	20	5.00	Solid	0.0320	10.4
M81822/6-A22	22	3.43	Solid	0.0253	16.8
M81822/6-A24	24	2.43	Solid	0.0201	26.5
M81822/6-A26	26	1.43	Solid	0.0159	42.7
M81822/6-A28	28	0.970	Solid	0.0126	68.0
M81822/6-A30	30	0.670	Solid	0.0100	108
M81822/6-B20	20	5.00	Solid	0.0320	10.4
M81822/6-B22	22	3.43	Solid	0.0253	16.8
M81822/6-B24	24	2.43	Solid	0.0201	26.5
M81822/6-B26	26	1.43	Solid	0.0159	42.7
M81822/6-B28	28	0.970	Solid	0.0126	68.0
M81822/6-B30	30	0.670	Solid	0.0100	108
M81822/6-C20	20	5.00	Solid	0.0320	12.2
M81822/6-C22	22	3.43	Solid	0.0253	19.7
M81822/6-C24	24	2.43	Solid	0.0201	31.0
M81822/6-C26	26	1.43	Solid	0.0159	50.4
M81822/6-C28	28	0.970	Solid	0.0126	79.4
M81822/6-C30	30	0.670	Solid	0.0100	126


Features:

MIL-W-81822/6 Wires have extruded PTFE insulation for high temperature applications. All have solid conductors for wire-wrap applications such as back panel wiring, with a choice of three conductor materials.

Technical Data:

 **Temperature:** -55°C to 200°C

 **Rated Voltage:** 300V

 **Color Code:** Replace the X
 0-Black, 1-Brown, 2-Red, 3-Orange,
 4-Yellow, 5-Green, 6-Blue, 7-Violet,
 8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
 SAE AS81822/6

MIL-W-81822/13

Construction: Conductors: Type A: Silver-plated ETP copper, Type B: Silver-plated OFHC copper, Type C: Silver-plated high strength copper alloy;
Insulation: Extruded ETFE

Part Number	AWG Size	Approx LBS/MFT	Conductor Stranding	Nom. Dia. of Cond.	Max. Resistance @ 20° C OHMS/MFT	Nom. O.D. (in)
M81822/13-A20	20	4.03	Solid	0.0320	10.4	
M81822/13-A22	22	2.66	Solid	0.0253	16.8	.0390
M81822/13-A24	24	1.80	Solid	0.0201	26.5	.0340
M81822/13-A24V	24	1.64	Solid	0.0201	26.5	
M81822/13-A26	26	1.120	Solid	0.0159	42.7	.2095
M81822/13-A26V	26	1.11	Solid	0.0159	42.7	
M81822/13-A28	28	0.880	Solid	0.0126	68.0	.0265
M81822/13-A28V	28	0.770	Solid	0.0126	68.0	
M81822/13-A30	30	0.510	Solid	0.0100	108	.0195
M81822/13-B20	20	4.03	Solid	0.0320	10.4	0.0460
M81822/13-B22	22	2.66	Solid	0.0253	16.8	0.0390
M81822/13-B24	24	1.80	Solid	0.0201	26.5	0.0340
M81822/13-B24V	24	1.64	Solid	0.0201	26.5	
M81822/13-B26	26	1.22	Solid	0.0159	42.7	0.0295
M81822/13-B26V	26	1.11	Solid	0.0159	42.7	
M81822/13-B28	28	0.880	Solid	0.0126	68.0	0.0265
M81822/13-B28V	28	0.770	Solid	0.0126	68.0	
M81822/13-B30	30	0.510	Solid	0.0100	108	0.0195
M81822/13-C20	20	4.03	Solid	0.0320	12.2	
M81822/13-C22	22	2.66	Solid	0.0253	19.7	0.0390
M81822/13-C24	24	1.80	Solid	0.0201	31.0	0.0340
M81822/13-C24V	24	1.64	Solid	0.0201	31.0	
M81822/13-C26	26	1.22	Solid	0.0159	50.4	0.0295
M81822/13-C26V	26	1.11	Solid	0.0159	50.4	
M81822/13-C28	28	0.880	Solid	0.0126	76.4	0.0265
M81822/13-C28V	28	0.770	Solid	0.0126	79.4	
M81822/13-C30	30	0.510	Solid	0.0100	126	0.0195


Features:

MIL-W-81822/13 Wires have extruded ETFE insulation for aerospace and other applications requiring light weight, tight jacket diameter tolerances and enhanced mechanical toughness. ETFE insulation also provides exceptional resistance to radiation and chemicals. All have solid conductors for wire-wrap applications such as back panel wiring, with a choice of three conductor materials.

Technical Data:

 **Temperature:** -55°C to 150°C

 **Rated Voltage:** 300V

 **Color Code:** Replace the X
 0-Black, 1-Brown, 2-Red, 3-Orange,
 4-Yellow, 5-Green, 6-Blue, 7-Violet,
 8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
 SAE AS81822/13

Please contact your sales representative for detailed information at sales@lapptannehill.com

Military/Aerospace Wire & Cable

MIL 81044/8 & 9

Construction: **Conductors:** Tin or silver plated copper (various strandings); **Insulation:** Cross-linked Polyalkene; **Jacket:** Cross-linked PVDF


Features:
This dual layer, medium weight, high temperature wire offers outstanding performance that makes it suitable for many applications where high density cabling and harnessing are required. These wires have excellent resistance to cut through, abrasion, cold flow, shrink back, notch propagation, and common chemicals. They strip and stripe easily, may be potted, and have low smoke characteristics. This wire should be considered for airframe, avionics, military vehicle, shipboard, missile, and other electronic applications.


Part Number	Conductor AWG Size	Conductor Stranding	Conductor Resistance@ 20° C Ω/kft	Nom. Diameter Inch	Weight lbs/kft
81044/08-24-X	24	19/36	24.3	.054	2.7
81044/08-22-X	22	19/34	15.1	.062	3.9
81044/08-20-X	20	19/32	9.19	.070	5.5
81044/08-18-X	18	19/30	5.79	.080	8.0
81044/08-16-X	16	19/29	4.52	.089	10.1
81044/08-14-X	14	19/27	2.88	.108	15.5
81044/08-12-X	12	37/28	1.90	.126	23.0
81044/08-10-X	10	37/26	1.15	.155	35.7
81044/08-8-X	8	133/29	.658	.214	62.8
81044/08-6-X	6	133/27	.418	.264	99.3
81044/09-24-X	24	19/36	26.2	.056	2.7
81044/09-22-X	22	19/34	16.2	.065	3.9
81044/09-20-X	20	19/32	9.88	.073	5.5
81044/09-18-X	18	19/30	6.23	.083	8.0
81044/09-16-X	16	19/29	4.81	.093	10.1
81044/09-14-X	14	19/27	3.06	.112	15.5
81044/09-12-X	12	37/28	2.02	.130	23.0
81044/09-10-X	10	37/26	1.26	.160	35.7
81044/09-8-X	8	133/29	.701	.220	62.8
81044/09-6-X	6	133/27	.445	.271	99.3

Technical Data:

 **Temperature:** 150°C

 **Rated Voltage:** 600V

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange,
4-Yellow, 5-Green, 6-Blue, 7-Violet,
8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
SAE AS81044/8 & 9

MIL 81044/10

Construction: **Conductors:** Silver plated high strength copper alloy; **Insulation:** Cross-linked Polyalkene; **Jacket:** Cross-linked PVDF


Features:
Offers outstanding performance that makes it suitable for many applications where high density cabling and harnessing are required. These wires have excellent resistance to cut through, abrasion, cold flow, shrink back, notch propagation, and common chemicals. They strip and stripe easily, may be potted, and have low smoke characteristics. This wire should be considered for air-frame, avionics, military vehicle, shipboard, missile, and other electronic applications.

Part Number	Conductor AWG Size	Conductor Stranding	Conductor Resistance@ 20° C Ω/kft	Nom. Diameter Inch	Weight lbs/kft
81044/10-26-X	26	19/38	48.4	.050	1.9
81044/10-24-X	24	19/36	28.4	.056	2.7
81044/10-22-X	22	19/34	17.5	.065	3.9
81044/10-20-X	20	19/32	10.7	.073	5.5

Technical Data:

 **Temperature:** 150°C

 **Rated Voltage:** 600V

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange,
4-Yellow, 5-Green, 6-Blue, 7-Violet,
8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
SAE AS81044/10

Complete catalog available online at: www.lapptannehill.com

MIL 81044/11

Construction: **Conductors:** Silver plated copper (various strandings); **Insulation:** Cross-linked ETFE; **Jacket:** Cross-linked PVDF

Features:


This dual layer, lightweight, high temperature wire offers outstanding performance that makes it suitable for many applications where high density cabling and harnessing are required. These wires have excellent resistance to cut through, abrasion, cold flow, shrink back, notch propagation, and common chemicals. They strip and stripe easily, may be potted, and have low smoke characteristics. This wire should be considered for airframe, avionics, military vehicle, shipboard, missile, and other electronic applications.

Part Number	Conductor AWG Size	Conductor Stranding	Conductor Resistance@ 20° C Ω/kft	Nom. Diameter Inch	Weight lbs/kft
81044/11-26-X	26	19/38	38.4	.036	1.4
81044/11-24-X	24	19/36	24.3	.042	2.1
81044/11-22-X	22	19/34	15.1	.049	3.1
81044/11-20-X	20	19/32	19.9	.057	4.6
81044/11-18-X	18	19/30	5.79	.067	7.0
81044/11-16-X	16	19/29	4.52	.075	8.9
81044/11-14-X	14	37/27	2.88	.093	13.9
81044/11-12-X	12	37/28	1.90	.112	21.7

Technical Data:

 **Temperature:** 150°C

 **Rated Voltage:** 600V

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
SAE AS81044/11

MIL 81044/12

Construction: **Conductors:** Tin plated copper (various strandings); **Insulation:** Cross-linked Polyalkene; **Jacket:** Cross-linked PVDF

Features:


Offers outstanding performance that makes it suitable for many applications where high density cabling and harnessing are required. These wires have excellent resistance to cut-through, abrasion, cold flow, shrink back, notch propagation, and common chemicals. They strip and stripe easily, may be potted, and have low smoke characteristics. This wire should be considered for airframe, avionics, military vehicle, shipboard, missile, and other electronic applications.

Part Number	Conductor AWG Size	Conductor Stranding	Conductor Resistance@ 20° C Ω/kft	Nom. Diameter Inch	Weight lbs/kft
81044/12-28-X	28	7/36	68.6	.032	.96
81044/12-26-X	26	19/38	41.3	.036	1.4
81044/12-24-X	24	19/36	26.2	.042	2.1
81044/12-22-X	22	19/34	16.2	.049	3.1
81044/12-20-X	20	19/32	9.88	.057	4.6
81044/12-18-X	18	19/30	6.23	.067	7.0
81044/12-16-X	16	19/29	4.81	.075	8.9
81044/12-14-X	14	19/27	3.06	.093	13.9
81044/12-12-X	12	37/28	2.02	.112	21.7

Technical Data:

 **Temperature:** 150°C

 **Rated Voltage:** 600V

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
SAE AS81044/12

MIL 81044/13

Construction: **Conductors:** Silver plated high strength copper alloy; **Insulation:** Cross-linked Polyalkene; **Jacket:** Cross-linked PVDF

Features:


This dual layer, lightweight, high temperature wire offers outstanding performance that makes it suitable for many applications where high density cabling and harnessing are required. These wires have excellent resistance to cut-through, abrasion, cold flow, shrink back, notch propagation, and common chemicals. They strip and stripe easily, may be potted, and have low smoke characteristics. This wire should be considered for airframe, avionics, military vehicle, shipboard, missile, and other electronic applications.

Part Number	Conductor AWG Size	Conductor Stranding	Conductor Resistance@ 20° C Ω/kft	Nom. Diameter Inch	Weight lbs/kft
81044/13-26-X	26	19/38	44.8	.036	1.4
81044/13-24-X	24	19/36	28.4	.042	2.1
81044/13-22-X	22	19/34	17.5	.049	3.1
81044/13-20-X	20	19/32	10.7	.057	4.6

Technical Data:

 **Temperature:** 150°C

 **Rated Voltage:** 600V

 **Color Code:** Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange, 4-Yellow, 5-Green, 6-Blue, 7-Violet, 8-Gray, 9-White, 54-Green/Yellow

 **Approvals:**
SAE AS81044/13

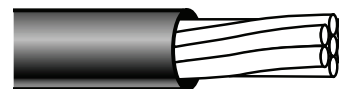
Military/Aerospace Wire & Cable

MIL-DTL-16878/1

Construction: **Conductors:** Tinned Copper Stranded;
Insulation: PVC

Features:

For internal wiring of electronic equipment – the most popular military hookup wire. Formerly “Type B”.



Part Number	Gauge AWG	Number of Strands (AWG)	Gauge of Strands (AWG)	Nom. Dia. Stranded Conductor In.	Nom. Fin. Wire Dia. In.	Max. Resistance (dc at 20° C) 1000-ft	Nom. Wt LBS per 1000-ft
M16878/1 BAA	32	1	32	.0080	.028	178.0	.69
M16878/1 BAB	32	7	40	.0090	.029	182.0	.70
M16878/1 BBA	30	1	30	.0100	.030	114.0	.72
M16878/1 BBB	30	7	38	.0120	.032	108.0	.75
M16878/1 BCA	28	1	28	.0126	.033	70.8	1.00
M16878/1 BCB	28	7	36	.0150	.035	68.2	1.00
M16878/1 BDA	26	1	26	.0159	.036	44.5	1.35
M16878/1 BDB	26	7	34	.0190	.039	42.6	1.50
M16878/1 BDE	26	19	38	.0190	.039	40.1	1.50
M16878/1 BEA	24	1	24	.0201	.040	27.2	1.80
M16878/1 BEB	24	7	32	.0240	.044	26.2	2.00
M16878/1 BEE	24	19	36	.0240	.044	25.4	2.00
M16878/1 BFA	22	1	22	.0253	.046	17.2	2.60
M16878/1 BFB	22	7	30	.0300	.050	16.7	3.00
M16878/1 BFE	22	19	34	.0300	.050	15.9	3.00
M16878/1 BGA	20	1	20	.0320	.052	10.7	3.50
M16878/1 BGB	20	7	28	.0380	.058	10.4	4.40
M16878/1 BGE	20	19	32	.0380	.058	9.76	4.50
M16878/1 BHA	18	1	18	.0430	.060	6.78	5.70
M16878/1 BHB	18	7	26	.0480	.068	6.54	6.10
M16878/1 BHE	18	19	30	.0480	.068	6.22	6.50
M16878/1 BJA	16	1	16	.0508	.071	4.26	9.50
M16878/1 BJE	16	19	29	.0540	.077	4.82	9.00
M16878/1 BKA	14	1	14	.0641	.084	2.68	14.80
M16878/1 BKE	14	19	27	.0690	.091	3.05	14.00

Technical Data:

Temperature: -55°C to +105°C

Rated Voltage: 600V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange,
4-Yellow, 5-Green, 6-Blue, 7-Violet,
8-Gray, 9-White, 54-Green/Yellow

Approvals:
Meets UL Styles 1061 and
CSA AWM I A/B
(previously S-R- PVC)

MIL-W-76D Type MW

Construction: **Conductors:** TPC;
Insulation: Medium Wall Polyvinylchloride (PVC) MIL-Spec Wire

Part Number	AWG Size	Conductor Stranding	Nominal Insulation	Nominal Diameter	Approx. Lbs./Mft
M76MW24-7-X	24	7/32 Tinned	0.016	0.057	2.77
M76MW22-7-X	22	7/30 Tinned	0.016	0.062	3.65
M76MW20-10-X	20	10/30 Tinned	0.016	0.070	4.80
M76MW18-16-X	18	16/30 Tinned	0.016	0.079	7.54
M76MW16-26-X	16	26/30 Tinned	0.016	0.091	9.86
M76MW14-41-X	14	41.30 Tinned	0.016	0.110	14.66
M76MW12-65-X	12	65/30 Tinned	0.016	0.131	22.51

Features:

- Can be used for wiring of electronic equipment.
- MIL-W-76D superseded MIL-W-76B in September, 1992.

Technical Data:

Temperature: -40°C to 80°C

Rated Voltage: 1000V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange,
4-Yellow, 5-Green, 6-Blue, 7-Violet,
8-Gray, 9-White, 54-Green/Yellow

Approvals:
MIL-W-76D

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Please contact us at sales@lapptannehill.com, or visit our website at: www.lapptannehill.com

MIL-W-76B

Construction: **Conductors:** Stranded Tinned Copper;
Insulation: PVC

Applications:
Power supply lead wire, appliance wiring

Part Number	AWG	Stranding	Vinyl Insulation	Nominal OD
BUBLW14-19-X	14	19X27	0.01	0.092
BUBLW16-19-X	16	19X29	0.01	0.08
BUBLW18-19-X	18	19X30	0.01	0.07
BUBLW18-16-X	18	16X30	0.01	0.07
BUBLW20-19-X	20	19X32	0.01	0.059
BUBLW22-7-X	22	7X30	0.01	0.05
BUBLW22-19-X	22	19X34	0.01	0.052
BUBLW24-7-X	24	7X32	0.01	0.045
BUBLW26-7-X	26	7X34	0.01	0.04
BUBLW28-7-X	28	7X36	0.01	0.035
BUBMW14-19-X	14	19X27	0.016	0.104
BUBMW16-19-X	16	19X29	0.016	0.092
BUBMW18-19-X	18	19X30	0.016	0.081
BUBMW18-16-X	18	16X30	0.016	0.08
BUBMW20-19-X	20	19X32	0.016	0.071
BUBMW22-7-X	22	7X30	0.016	0.063
BUBMW22-19-X	22	19X34	0.016	0.063
BUBMW24-7-X	24	7X32	0.016	0.056
BUBMW26-7-X	26	7X34	0.016	0.051
BUBMW28-7-X	28	7X36	0.016	0.047

Features:

- Sizes 22-16 also available in Type HW Construction.
- TYPE LW - Insulation PVC .010" wall thickness
- TYPE MW - Insulation PVC .016" wall thickness
- TYPE HW - Insulation PVC .031" wall thickness

Technical Data:

Temperature: -54°C to +105°C

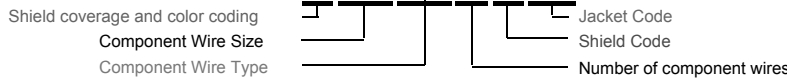
Rated Voltage: 600V

Color Code: Replace the X
0-Black, 1-Brown, 2-Red, 3-Orange,
4-Yellow, 5-Green, 6-Blue, 7-Violet,
8-Gray, 9-White, 54-Green/Yellow

Approvals:
Meets UL Styles 1061 and
CSA AWM I A/B
(previously S-R- PVC)

27500 Basic Wire Specifications

M27500 - 22 RC 2 S 06



Component Wire Codes

(The Code is attached to the Mil-Spec Number for it's component wire style)

Sorted By Mil-Spec Number of Component Wires

A	MIL-W-5086/1 ¹	CA	MIL-W-22759/13	SP	MIL-W-22759/43	MF	MIL-W-81044/7
B	MIL-W-5086/2 ^{1 2}	CB	MIL-W-22759/14	SR	MIL-W-22759/44	MG	MIL-W-81044/8 ³
C	MIL-W-5086/3 ^{1 2}	CC	MIL-W-22759/15	SS	MIL-W-22759/45	MH	MIL-W-81044/9
P	MIL-W-5086/4 ¹	TE	MIL-W-22759/16	ST	MIL-W-22759/46	MJ	MIL-W-81044/10
AA	MIL-W-5086/5 ¹	TF	MIL-W-22759/17	WB	MIL-W-22759/80	MK	MIL-W-81044/11 ³
AB	MIL-W-5086/6 ¹	TG	MIL-W-22759/18	WC	MIL-W-22759/81 ³	ML	MIL-W-81044/12
AD	MIL-W-5086/7 ¹	TH	MIL-W-22759/19	WE	MIL-W-22759/82 ³	MM	MIL-W-81044/13
H	MIL-W-8777,MS25471	TK	MIL-W-22759/20	WF	MIL-W-22759/83 ³	MR	MIL-W-81381/7 ³
F	MIL-W-8777,MS 27110	TL	MIL-W-22759/21	WG	MIL-W-22759/84 ³	MS	MIL-W-81381/8 ³
EA	MIL-W-22759/1	TM	MIL-W-22759/22	WH	MIL-W-22759/85 ³	MT	MIL-W-81381/9 ³
EA	MIL-W-22759/2	TN	MIL-W-22759/23	WJ	MIL-W-22759/86 ³	MV	MIL-W-81381/10 ³
RA	MIL-W-22759/3	JB	MIL-W-22759/28	WK	MIL-W-22759/87 ³	MW	MIL-W-81381/11 ³
RB	MIL-W-22759/4	JC	MIL-W-22759/29	WL	MIL-W-22759/88 ³	MY	MIL-W-81381/12 ³
VA	MIL-W-22759/5	JD	MIL-W-22759/30	WM	MIL-W-22759/89 ³	NA	MIL-W-81381/13 ³
WA	MIL-W-22759/6	JE	MIL-W-22759/31	WN	MIL-W-22759/90 ³	NB	MIL-W-81381/14 ³
SA	MIL-W-22759/7	SB	MIL-W-22759/32	WP	MIL-W-22759/91 ³	NE	MIL-W-81381/17 ³
TA	MIL-W-22759/8	SC	MIL-W-22759/33	WR	MIL-W-22759/92 ³	NF	MIL-W-81381/18 ³
LE	MIL-W-22759/9	SD	MIL-W-22759/34	JA	MIL-W-25038/3	NG	MIL-W-81381/19 ³
LH	MIL-W-22759/10	SE	MIL-W-22759/35	JF	MIL-W-25038/5	NH	MIL-W-81381/20 ³
RC	MIL-W-22759/11	SM	MIL-W-22759/41	MD	MIL-W-81044/5 ³	NK	MIL-W-81381/21 ³
RE	MIL-W-22759/12	SN	MIL-W-22759/42	ME	MIL-W-81044/6	NL	MIL-W-81381/22 ³

M27500 Basic Wire Specifications

Sorted by Component Code							
A	MIL-W-5086/1 ¹	MD	MIL-W-81044/5 ³	NK	MIL-W-81381/21 ³	TG	MIL-W-22759/18
AA	MIL-W-5086/5 ¹	ME	MIL-W-81044/6	NL	MIL-W-81381/22 ³	TH	MIL-W-22759/19
AB	MIL-W-5086/6 ¹	MF	MIL-W-81044/7	P	MIL-W-5086/4 ¹	TK	MIL-W-22759/20
AD	MIL-W-5086/7 ¹	MG	MIL-W-81044/8 ³	RA	MIL-W-22759/3	TL	MIL-W-22759/21
B	MIL-W-5086/2 ^{1 2}	MH	MIL-W-81044/9	RB	MIL-W-22759/4	TM	MIL-W-22759/22
C	MIL-W-5086/3 ^{1 2}	MJ	MIL-W-81044/10	RC	MIL-W-22759/11	TN	MIL-W-22759/23
CA	MIL-W-22759/13	MK	MIL-W-81044/11 ³	RE	MIL-W-22759/12	VA	MIL-W-22759/5
CB	MIL-W-22759/14	ML	MIL-W-81044/12	SA	MIL-W-22759/7	WA	MIL-W-22759/6
CC	MIL-W-22759/15	MM	MIL-W-81044/13	SB	MIL-W-22759/32	WB	MIL-W-22759/80
EA	MIL-W-22759/1	MR	MIL-W-81381/7 ³	SC	MIL-W-22759/33	WC	MIL-W-22759/81 ³
EA	MIL-W-22759/2	MS	MIL-W-81381/8 ³	SD	MIL-W-22759/34	WE	MIL-W-22759/82 ³
F	MIL-W-8777,MS 27110	MT	MIL-W-81381/9 ³	SE	MIL-W-22759/35	WF	MIL-W-22759/83 ³
H	MIL-W-8777,MS25471	MV	MIL-W-81381/10 ³	SM	MIL-W-22759/41	WG	MIL-W-22759/84 ³
JA	MIL-W-25038/3	MW	MIL-W-81381/11 ³	SN	MIL-W-22759/42	WH	MIL-W-22759/85 ³
JB	MIL-W-22759/28	MY	MIL-W-81381/12 ³	SP	MIL-W-22759/43	WJ	MIL-W-22759/86 ³
JC	MIL-W-22759/29	NA	MIL-W-81381/13 ³	SR	MIL-W-22759/44	WK	MIL-W-22759/87 ³
JD	MIL-W-22759/30	NB	MIL-W-81381/14 ³	SS	MIL-W-22759/45	WL	MIL-W-22759/88 ³
JE	MIL-W-22759/31	NE	MIL-W-81381/17 ³	ST	MIL-W-22759/46	WM	MIL-W-22759/89 ³
JF	MIL-W-25038/5	NF	MIL-W-81381/18 ³	TA	MIL-W-22759/8	WN	MIL-W-22759/90 ³
LE	MIL-W-22759/9	NG	MIL-W-81381/19 ³	TE	MIL-W-22759/16	WP	MIL-W-22759/91 ³
LH	MIL-W-22759/10	NH	MIL-W-81381/20 ³	TF	MIL-W-22759/17	WR	MIL-W-22759/92 ³

¹ Not for use in aerospace applications. ² Inactive for new design. ³ Not for Naval Air Systems Command Usage

Shield Codes					
(When both double shield and double jacket are specified, the inner jacket is between the two layers of shield.)					
Letter Code		Description	Maximum temperature limit for shield material		
Single Shield	Double Shield		° C	° F	
U	---	No Shield	N/A	N/A	
T	V	Round, tin-coated copper	150	302	
S	W	Round, silver-coated copper	200	392	
N	Y	Round, nickel-coated copper	260	500	
F	Z	Round, stainless steel	400	752	
C	R	Round, heavy nickel-coated copper	400	752	
M	K	Round, silver-coated high strength copper alloy	200	392	
P	L	Round, nickel-coated high strength copper alloy	260	500	
G	A	Flat, silver-coated copper	200	392	
H	B	Flat, silver-coated high strength copper alloy	200	392	
*	#	Flat, nickel-coated copper	260	500	
J	D	Flat, tin-coated copper	150	302	
E	X	Flat, nickel-coated high strength copper alloy	260	500	

Specifications subject to change. For complete specifications and availability visit www.lapptannehill.com

M27500 Basic Wire Specifications

Jacket Code (Descriptions include jacket material and color)				
Jacket Code		Description	Temperature limit for jacket material	
Single Jacket	Double Jacket		°C	°F
00	00		No Jacket	N/A
01	51 ¹	Extruded white polyvinylchloride (PVC)	90	194
02 ²	52 ²	Extruded clear polyamide in accordance with ASTM-D-4066	105	221
03	53	White Polyamide braid impregnated with clear polyamide finisher over polyester tape	105	221
04	54	Polyester braid impregnated with high temperature finishers over polyester tape	150	302
05	55	Extruded clear fluorinated ethylene propylene (FEP)	200	392
06	56	Extruded or taped and heat sealed white polytetrafluoroethylene (PTFE)	260	500
07	57	White polytetrafluoroethylene (PTFE) treated glass braid impregnated and coated with polytetrafluoroethylene finisher over presintered polytetrafluoroethylene tape	260	500
08 ³	58 ³	Cross-linked white extruded polyvinylidene fluoride (PVDF)	150	302
09	59	Extruded white fluorinated ethylene propylene (FEP)	200	392
10 ³	60 ³	Extruded clear polyvinylidene fluoride (PVDF)	125	257
11*	61*	Tape of natural polyimide combined with clear fluorinated ethylene propylene (FEP) wrapped and heat sealed with (FEP) outer surface	200	392
12*	62*	Tape of natural polyimide combined with fluorinated ethylene propylene (FEP) wrapped and heat sealed with polyimide outer surface	200	392
14	64	Extruded white ethylene-tetrafluoroethylene copolymer (ETFE)	150	302
15	65	Extruded clear ethylene-tetrafluoroethylene copolymer (ETFE)	150	302
16	66	Braid of aromatic polyamide with high temperature finisher over presintered polytetrafluoroethylene (PTFE) tape	200	392
17 ^a	67 ^a	Extruded white ethylene chlorotrifluoroethylene (ECTFE)	150	302
18 ^a	68 ^a	Extruded clear ethylene chlorotrifluoroethylene (ECTFE)	150	302
20	70	Extruded white perfluoroalkoxy (PFA)	260	500
21	71	Extruded clear perfluoroalkoxy (PFA)	260	500
22	72	Tape of polyimide combined with clear fluorinated ethylene propylene (FEP) wrapped and heat sealed with opaque polyimide outer surface	200	392
23	73	Extruded white cross-linked modified ethylene-tetrafluoroethylene copolymer (XLETFE)	200	392
24	74	Tape layer of white polytetrafluoroethylene (PTFE) wrapped over a tape layer of natural polyimide combined with FEP and heat sealed	200	392

¹ Polyvinylchloride (PVC) materials shall not be used for Aerospace application
² Jacket material 02/52 is not to be used for cables having a diameter of 0.251" (6.38mm) or greater
³ Jacket materials 08, 10, 58, and 60 are not to be used for cables having a diameter of 0.401" (10.19mm) or greater

Specifications subject to change. For complete specifications and availability visit www.lapptannehill.com

Military/Aerospace Wire & Cable

M27500 Basic Wire Specifications

Shield covering and color coding (Color coding for M27500 cables is specified in conjunction with desired shield coverage.)			
Color code for Shield Coverage of		M27500 terminology	Component wire identification method
85%	90%		
"_"	C	Preferred method, Table IIIA	White wires with colored stripes - stripe color per Table IIIA
F	H	Preferred method, Table IIIB	White wires with colored stripes - stripe color per Table IIIB
A	D	Optional method A, Table IIIA	Solid color wires - colors per Table IIIA
G	J	Optional method A, Table IIIB	Solid color wires - colors per Table IIIB
B	E	Optional method B, Table IIIC	Wires are all the same color (based on AWG size), per Table IIIC. Bands of a contrasting color are printed on each wire to denote wire number (circuit ID) per Table IIID.
K	M	Optional method C	Wires are all the same color (based on AWG size), per Table IIIC. Numbers in a contrasting color are printed on each wire to denote wire number (circuit ID).
L	N	Optional method D	White wires with numbers in a contrasting color printed on each wire to denote wire number (circuit ID).

Table IIIA Color Coding

- For "preferred method" color coding, color are stripes on white insulation (wire #1 has no stripe). Wires 11-15 have double stripes as indicated.
- For "optional method A" color coding, colors are solid insulation color. Wires 11-15 have a stripe in a lighter shade of the base color.

Wire Number														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
White	Blue	Orange	Green	Red	Black	Yellow	Violet	Gray	Brown	Blue / Blue	Orange / Orange	Green / Green	Red / Red	Black / Black

Table IIIB Color Coding

- For "preferred method" color coding, colors are stripes on white insulation (wire #5 has no stripe), for wires 1-10. For wires 11-15, color pairs indicate insulation of the first color, with a stripe of the second color.
- For "optional method A" color coding, colors are solid insulation color, for wires 1-10. For wires 11-15, color pairs indicate insulation of the first color, with a stripe of the second color.
- For either method the color of the wire in a one-conductor cable is white.

Wire Number														
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Red	Blue	Yellow	Green	White	Black	Brown	Orange	Violet	Gray	Red / White	Blue / White	Yellow / White	Green/White	Black / White

M27500 Basic Wire Specifications

Table IIIC Color Coding

- For "optional method B" color coding, wire insulation color is based on AWG size, with color bands per Table IIID to indicate wire number (circuit ID).
- For "optional method C" color coding, wire insulation color is based on AWG size, with numbers printed on each wire to indicate wire number (circuit ID).

AWG Size	Color	AWG Size	Color
26	Black	10	Brown
24	Blue	8	Red
22	Green	6	Blue
20	Red	4	Yellow
18	White	2	Red
16	Blue	1	White
14	Green	0	Blue
12	Yellow	00	Green

Table IIID Color Band Configuration

- For "optional method B" color coding, band groups as shown below are printed on wires to indicate wire number (circuit ID).

Wire Number	Band configuration	Wire Number	Band Configuration
1	None	9	1 wide, 2 narrow
2	2 narrow	10	1 wide, 3 narrow
3	3 narrow	11	1 wide, 4 narrow
4	4 narrow	12	1 wide, 5 narrow
5	5 narrow	13	2 wide, 1 narrow
6	6 narrow	14	2 wide, 2 narrow
7	7 narrow	15	2 wide, 3 narrow
8	1 wide, 1 narrow		