



**Harbour**  
INDUSTRIES

**Mil-Spec**  
**Commercial and Industrial**  
**High Temperature Wire & Cable**



*NEMA HP3 & HP4*  
*UL Styles*  
*SAE AS22759*  
*NEMA WC 27500*

*Single &*  
*Multi-Conductor*  
*Constructions*



# Mil-Spec Wire and Cable

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**Harbour**  
INDUSTRIES  
*High Performance Wire & Cable*

Harbour Industries LLC 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 coaxial, low loss, multi-conductor, Mil-Spec, and specialty cables that meet stringent electrical requirements has put us in the forefront of the communications, aircraft and In Flight Entertainment markets. Our focus on continuous improvement has allowed us to streamline our manufacturing processes, reduce cost and maintain market leading standards for customer service.

Harbour's engineering and manufacturing strengths allow us to keep your business highly competitive in the global marketplace. In addition, our "Best in Class" customer service will keep you there!

Harbour is an ISO 9001-2008 facility which is fully compliant to the RoHS, REACH, DFARS, WEEE, ELV and BFR Directives.



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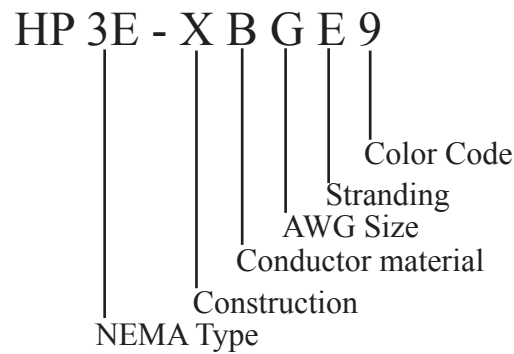
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# NEMA HP3/HP4 REFERENCE GUIDE

replaces M16878



## 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

**\*Constructions listed are those currently manufactured by Harbour Industries**

# NEMA HP-3 TYPES E, EE, ET

*Replaces M16878/4,/5,/6,/23,/25,/27*

## Construction

Stranded or solid silver or nickel plated copper  
Extruded Polytetrafluoroethylene (PTFE)

## Ratings/Approvals

SPC 200° C NPC 260° C

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

XE 18awg & smaller dual rated to UL1213

XEE 18awg & smaller dual rated to UL1180

	Type E		Type EE		Type ET		DC Resistance
	M16878/4		M16878/5		M16878/6		
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	-	-	-

Additional constructions available - check with the factory for details  
All figures referenced are nominal

# NEMA HP-4 TYPES K, KK, KT

*Replaces M16878/11, /12, /13*

## Construction

Stranded or solid tin or silver plated copper

Extruded FEP

## Ratings/Approvals

TPC 150° C SPC 200° C

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

Additional constructions available - check with the factory for details

All figures referenced are nominal



## 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

**\*Above constructions are those currently  
manufactured by Harbour Industries**

# SAE-AS22759 Mineral Filled PTFE

*Replaces MIL-W-22759/5, /6, /7, /8*

## Construction

Stranded silver or nickel plated conductor  
Extruded mineral filled Polytetrafluoroethylene (PTFE)

## Ratings/Approvals

Printed in accordance with SAE-AS22759  
600 Volts

	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" 7	26/.075" 7	19/.062" 4	19/.062" 4
22 19/34	28/.085" 8	28/.085" 8	22/.073" 6	22/.073" 6
20 19/32	29/.095" 10	29/.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	36/.125" 18	36/.125" 18	24/.102" 14	24/.102" 14
14 19/27	38/.143" 25	38/.143" 25	23/.115" 19	23/.115" 19
12 19/25	38/.160" 33	38/.160" 33	24/.134" 28	24/.134" 28
10 37/26	35/.179" 42	35/.179" 42	25/.158" 40	25/.158" 40
8 133/29	40/.248" 81	40/.248" 81	30/.220" 71	25/.220" 71
6 133/27			30/.270" 108	30/.270" 108
4 133/25	42/.370" 180	42/.370" 180	35/.328" 169	35/.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		
6 133/27		

Additional constructions available - check with the factory for details  
All figures referenced are nominal



# SAE-AS22759 Extruded PTFE

*Replaces MIL-W-22759/9, /10, /11, /12*

## Construction

Stranded silver or nickel plated copper  
Extruded Polytetrafluoroethylene (PTFE)

## Ratings/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

Additional constructions available - check with the factory for details  
All figures referenced are nominal

# SAE-AS22759 Extruded ETFE

*Replaces MIL-W-22759/16, /17, /18, /19*

## Construction

Stranded tin plated copper or silver plated high strength alloy  
Extruded ETFE

## Ratings/Approvals

Printed in accordance with SAE-AS22759  
150° C 600 Volts

	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		
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	-

Additional constructions available - check with the factory for details

All figures referenced are nominal

# SAE-AS22759 Extruded PTFE

*Replaces MIL-W-22759/20, /21, /22, /23*

## Construction

Stranded silver or nickel high strength alloy  
Extruded Polytetrafluoroethylene (PTFE)

## Ratings/Approvals

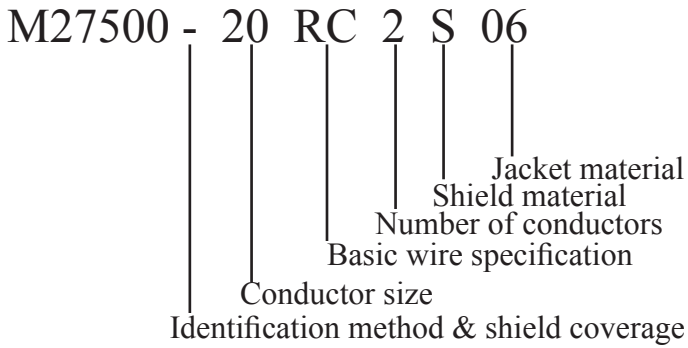
Printed in accordance with SAE-AS22759

	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

Additional constructions available - check with the factory for details  
All figures referenced are nominal

# 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	Red 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

**\*Above constructions are those currently manufactured by Harbour Industries**

# NEMA WC 27500 Type TE-14

*Replaces MIL-C-27500*

## Construction

Stranded tin plated copper conductor  
 Extruded ETFE  
 Tin plated copper braid 85% coverage  
 White extruded ETFE jacket

## Ratings/Approvals

Primary conductors manufactured in accordance to SAE-AS 22759  
 150° C 600 Volts

Standard color coding available

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

Additional constructions available - check with the factory for details  
 All figures referenced are nominal

# NEMA WC 27500 Type TG-14

*Replaces MIL-C-27500*

## Construction

Stranded tin plated copper conductor  
 Extruded ETFE  
 Tin plated copper braid 85% coverage  
 White extruded ETFE jacket

## Ratings/Approvals

Primary conductors manufactured in accordance to SAE-AS 22759  
 150° C 600 Volts

Standard color coding available

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

Additional constructions available - check with the factory for details

All figures referenced are nominal

# NEMA WC 27500 Type RC-06

*Replaces MIL-C-27500*

## Construction

Stranded silver plated copper conductor  
 Extruded Polytetrafluoroethylene (PTFE)  
 Silver plated copper braid 85% coverage  
 White PTFE tape wrapped jacket

## Ratings/Approvals

Primary conductors manufactured in accordance to SAE-AS 22759  
 200° C 600 Volts

Standard color coding available

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

Additional constructions available - check with the factory for details

All figures referenced are nominal

# NEMA WC 27500 Type RC-09

*Replaces MIL-C-27500*

## Construction

Stranded silver plated copper conductor  
Extruded Polytetrafluoroethylene (PTFE)  
Silver plated copper braid 85% coverage  
White extruded FEP jacket

## Ratings/Approvals

Primary conductors manufactured in accordance to SAE-AS 22759  
200° C 600 Volts

Standard color coding available

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

Additional constructions available - check with the factory for details

All figures referenced are nominal



# STJ Cables

## Construction

Stranded silver plated copper conductor  
 Extruded Polytetrafluoroethylene (PTFE)  
 Silver plated copper braid 85% coverage  
 White PTFE tape wrapped jacket

## Ratings/Approvals

Primary conductors manufactured in accordance to NEMA HP-3  
 200° C 600 Volts

Standard color coding available

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

Additional constructions available - check with the factory for details

All figures referenced are nominal

# SE Cables

## Construction

Stranded silver plated copper conductor  
 Extruded Polytetrafluoroethylene (PTFE)  
 Silver plated copper braid 85% coverage  
 White extruded FEP jacket

## Ratings/Approvals

Primary conductors manufactured in accordance to NEMA HP-3  
 200° C 600 Volts

Standard color coding available

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

Additional constructions available - check with the factory for details

All figures referenced are nominal

# HARBOUR INDUSTRIES

## TABLE OF RECOGNIZED UL STYLES

Single-conductor, thermoplastic insulation										
1164	1332	1584	1709	1738	1885	1971	10050	10102	10156	10412
1180	1333	1610	1710	1739	1886	1979	10064	10109	10185	10475
1198	1354	1643	1716	1745	1887	10009	10068	10111	10202	10486
1199	1371	1644	1723	1815	1900	10011	10072	10125	10293	10487
1212	1394	1659	1726	1824	1901	10020	10073	10126	10297	10488
1213	1419	1668	1727	1835	1911	10030	10077	10129	10323	10595
1330	1512	1669	1736	1848	1929	10032	10086	10143	10362	10596
1331	1570	1671	1737	1849	1930	10048	10088	10144	10371	10723
Multiple-conductor, thermoplastic insulation										
2747	2750	2895	20230	20308	20370	20710	20713	21081	21384	
2748	2833	2983	20231	20368	20371	20711	20887	21091	21385	
2749	2894	20229	20232	20369	20604	20712	20920	21092	21386	
Single and multiple-conductor specialty items										
5035	5127	5180	5226	5251	5257	5288	5331	5359	5425	
5047	5128	5181	5229	5253	5259	5315	5334	5360		
5107	5134	5224	5230	5254	5281	5316	5335	5390		
5108	5167	5225	5231	5256	5283	5318	5344	5424		
Single-conductor, thermoset insulation										
3069	3100	3127	3135	3172	3216	3257	3303	3410	3530	
3070	3101	3128	3137	3212	3217	3262	3304	3479	3561	
3071	3122	3132	3139	3213	3231	3268	3318	3512	3576	
3074	3123	3133	3143	3214	3239	3270	3322	3513	3580	
3075	3125	3134	3144	3215	3243	3278	3367	3529	3789	
Multiple-conductor, thermoset insulation										
4389	4421									

### Facility with UL approval

Vermont & Canada
Vermont only (E39597)
Canada only (E76475)

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# AMPACITY

The ampacity of a conductor represents its current carrying capacity. Generally, as the conductor size increases its resistance decreases resulting in a greater ability to handle current. A by-product of increasing current is increasing heat. Unless the heat is dissipated, enough current can be applied to a conductor to actually melt the metallic conductive material carrying the current. Most certainly, however, the plastic insulating material will decompose at a much lower temperature. To that end current carrying capacity limits have been established by regulatory agencies such as UL and NEC.

A variety of factors were examined in determining the current carrying capacity of an electrical conductor. Among them are conductor size; DC resistance; dielectric softening point; ambient temperature; number of conductors bundled; etc. There are a number of uncontrolled factors that were not examined but must be considered in various application installations, such as air flow; voltage drop; human contact; etc. Probably the most overlooked factor in many applications is the temperature rating of adjacent materials within the installation. For example, some electrical wires will carry a temperature rating of 250°C (482°F). Many electrical connectors and plastic housings are only rated for 60°C (140°F). Consequently, given even a moderate current load the wire will remain intact but surrounding components will melt.

For just this reason the following table is strictly intended to be used as a general guide. Individual applications, whether they be communications, control, power, etc. need to be examined and all appropriate safety factors considered. This table approximates the current carrying capacity of a single 19-strand copper conductor in free air at 30°C (86°F) ambient temperature. Additionally, derating factors for cabled conductors must also be taken into account.

**Insulated Wire Temperature Rating**

AWG	Diameter	60°C	80°C	90°C	105°C	125°C	150°C	200°C	250°C
30	.0124"	1.3	2.0	2.5	3.0	3.5	4.3	4.8	5.9
28	.0146"	2.0	3.0	3.5	4.0	4.5	5.5	6.3	8.0
26	.0188"	3.0	4.0	4.5	5.0	6.0	7.0	9.0	11
24	.0235"	4.5	5.5	6.5	7.0	8.5	10	12	14
22	.0296"	6.0	7.5	9.0	10	11	13	16	20
20	.0376"	8.0	10	12	13	14	18	22	27
18	.0403"	11	14	16	18	19	25	30	36
16	.0531"	16	19	22	24	26	34	38	45
14	.0667"	22	27	30	33	37	45	50	57
12	.0856"	30	36	40	45	50	60	65	75
10	.1080"	40	47	55	58	65	80	90	100
8	.1610"	60	65	75	80	90	105	125	145
6	.2020"	80	95	105	110	125	145	165	205
4	.2550"	105	125	140	155	170	190	220	270
2	.3310"	135	160	180	200	220	240	280	350
1	.3670"	165	195	220	245	270	290	340	430
1/0	.4160"	195	230	260	290	320	340	400	510
2/0	.4690"	225	260	300	330	370	390	465	590

<b>Derating Factors for Cabled Conductors</b>	
# Cond.	Derate @
2-5	80%
6-15	70%
16-30	50%



# Harbour

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