



## NEMA WC27500 (Formerly MIL-DTL-27500)

### How to Build a Cable

This specification allows an almost infinite combination of wire, shielding, and jacketing materials. Cables may be unjacketed, jacketed, shielded, or shielded and jacketed. Care must be exercised in the selection of components to assure compatibility [For example, a tin plated shield will corrode or melt if placed under a PTFE (06) jacket.]

#### Cable Designation

<u>M27500</u>	-	<u>22</u>	<u>RC</u>	<u>2</u>	<u>S</u>	<u>06</u>
Color Code of wire		AWG of Conductor	Basic Wire Spec	Number of Wires	Shield Type	Jacket Type

#### Color Code

The preferred color code (-) is as follows:

1st Cond	2nd	3rd	4th	5 <sup>th</sup>	6 <sup>th</sup>	7th	8 <sup>th</sup>	9th	10th	11th	12th	13th	14th	15th
White	White/blue		Wht/Org	Wht/Grn	Wht/Red	Wht/Blk	Wht/Ylw	Wht/Vio	Wht/Gry	Wht/Brn	W/Blu/Blu	W/Or/Or	W/G/G	W/R/R
W/Bk/Bk														
(9)	Blue stripe white wire (96)	(93)	(95)	(92)	(90)	(94)	(97)	(98)	(91)	(966)	(933)	(955)	(922)	(900)

Color Code (E) uses an alternate stripe pattern. Color Code (A) uses solid color conductors.

Optional color codes include: G, B, K,L, C, H, D, J, E, M, and N. See attached for description. Other colors may be used if specified in writing when ordering

#### Basic Wire Specifications

##### Symbol Sequence

A	MIL-W-5086/1 <sup>1</sup>	ME	MIL-W-81044/6	P	MIL-W-5086/4 <sup>1</sup>	TL	MIL-W-22759/21
AA	MIL-W-5088/5 <sup>1</sup>	MF	MIL-W-81044/7	RA	MIL-W-22759/3	TM	MIL-W-22759/22
AB	MIL-W-5086/6 <sup>1</sup>	MG	MIL-W-81044/8 <sup>2</sup>	RB	MIL-W-22759/4	TN	MIL-W-22759/23
AD	MIL-W-5086/7 <sup>1</sup>	MH	MIL-W-81044/9	RC	MIL-W-22759/11	VA	MIL-W-22759/5
B	MIL-W-5086/2 <sup>1 2</sup>	MJ	MIL-W-81044/10	RE	MIL-W-22759/12	WA	MIL-W-22759/6
C	MIL-W-5086/3 <sup>1 2</sup>	MK	MIL-W-81044/11	SA	MIL-W-22759/7	WB	MIL-W-22759/80
CA	MIL-W-22759/13	ML	MIL-W-81044/12	SB	MIL-W-22759/32	WC	MIL-W-22759/81
CB	MIL-W-22759/14	MM	MIL-W-81044/13	SC	MIL-W-22759/33	WE	MIL-W-22759/82
CC	MIL-W-22759/15	MR	MIL-W-81381/7	SD	MIL-W-22759/34	WF	MIL-W-22759/83
E	MIL-W-22759/2	MS	MIL-W-81381/8	SE	MIL-W-22759/35	WG	MIL-W-22759/84
EA	MIL-W-22759/1	MT	MIL-W-81318/9	SM	MIL-W-22759/41	WH	MIL-W-22759/85
F	MIL-W-8777, MS27110	MV	MIL-W-81381/10	SN	MIL-W-22759/42	WJ	MIL-W-22759/86
H	MIL-W-8777, MS25471	MW	MIL-W-81381/11	SP	MIL-W-22759/43	WK	MIL-W-22759/87
JA	MIL-W-25038/1	MY	MIL-W-81381/12	SR	MIL-W-22759/44	WL	MIL-W-22759/88
JB	MIL-W-22759/28	NA	MIL-W-81381/13	SS	MIL-W-22759/45	WM	MIL-W-22759/89
JC	MIL-W-22759/29	NB	MIL-W-81381/14	ST	MIL-W-22759/46	WN	MIL-W-22759/90
JD	MIL-22759/30	NE	MIL-W-81381/17	TA	MIL-W-22759/8	WP	MIL-W-22759/91
JE	MIL-W-22759/31	NF	MIL-W-81381/18	TE	MIL-W-22759/16	WR	MIL-W-22759/92
JF	MIL-W-25038/3	NG	MIL-W-81381/19	TF	MIL-W-22759/17		
LE	MIL-W-22759/9	NH	MIL-W-81381/20	TG	MIL-W-22759/18		
LH	MIL-W-22759/10	NK	MIL-W-81381/21	TH	MIL-W-22759/19		
MD	MIL-W-81044/5 <sup>2</sup>	NL	MIL-W-81381/22	TK	MIL-W-22759/20		

<sup>1</sup> Not for use in aerospace applications    <sup>2</sup> Inactive for new design    <sup>3</sup> Not for Naval Air Systems Command usage.

**Number of Wires**

Maximum number of wires is 15.

The number of wires will be as designated. Unshielded cables may have from 2 to 15 conductors. Shielded cables (either unjacketed or jacketed) may have from 1 to 15 conductors. Cables with 10 to 15 conductors will be max. AWG 12.

**Shield Type**

Symbol indicates shielding material and whether single or double layered

Single Shield Symbol	Double Shield Symbol	Shield Material	Shield Material Maximum Temperature
U		No shield	
T	V	Tin-coated copper, round	150° C (302° F)
S	W	Silver-coated copper, round	200° C (392° F)
N	Y	Nickel-coated copper, round	260° C (500° F)
F	Z	Stainless steel, round	400° C (752° F)
C	R	Nickel-clad Copper, round	400° C (752° F)
M	K	Silver-coated high strength copper alloy, round	200° C (392° F)
P	L	Nickel-coated high strength copper alloy, round	260° C (500° F)
G	A	Silver-coated copper, flat	200° C (392° F)
H	B	Silver-coated high strength copper alloy, flat	200° C (392° F)
*	#	Nickel-coated copper, flat	260° C (500° F)
J	D	Tin-coated copper flat	150° C (302° F)
E	X	Nickel-coated high strength copper alloy, flat	260° C (500° F)
I	Q	Nickel-chromium alloy, flat	400° C (752° F)

**Jacket Type**

Symbol defines jacket material and standard color

Single Jacket	Double Jacket	Material	Temperature Limit
00	00	No jacket	
01	51	PVC - White	90° C
02	52	Extruded nylon - Clear	105° C
03	53	Braided nylon - White	105° C
04	54	Braided Polyester over Polyester Tape	150° C
05	55	Extruded FEP - Clear	200° C
06	56	Taped TFE - White	260° C
07	57	FG/Taped TFE - White	260° C
08	58	Cross Linked PVF <sub>2</sub> - White	150° C
09	59	Extruded FEP - White	200° C
10	60	PFV <sub>2</sub> - Clear	125° C
11	61	Taped Polyimide/FEP - Natural	200° C
12	62	Taped Polyimide/FEP	200° C
14	64	Extruded ETFE (Tefzel) - White	150° C
15	65	Extruded ETFE (Tefzel) - Clear	150° C
16	66	Nylon Braid/Tape TFE	200° C
17	67	ECTFE - White	150° C
18	68	ECTFE - Clear	150° C
20	70	PFA - White	260° C
21	71	PFA - Clear	260° C
22	72	Polyimide/FEP	200° C
23	73	Cross Linked Tefzel (XLETFE) - White	200° C
24	74	Taped TFE over Taped Polyimide/FEP - White	200° C