

MIL-DTL-27500 Cables—general information

MIL-DTL-27500 (NEMA WC27500) cables incorporate from one to fifteen M22759, MIL-W-25038, or MIL-DTL-81381 wires, plus a single or double shield and a single or double jacket.

Although these cables are designed primarily for use in aircraft and ground support equipment, their high performance and versatility makes them ideal in a wide variety of general-purpose electrical and electronic applications.

The MIL-DTL-27500 part numbering system provides for many combinations of cable construction characteristics (see charts beginning on next page). The following product pages provide detailed construction and performance information for some of the most popular varieties of one- to four-conductor cables.

Many of these cables are available with component wires and/or jackets with our unique **Seamless Wrap** PTFE tape, as noted the product pages. Additionally, cables with -24 jacket styles and M22759/80 through /92 component wires can be ordered with **Seamless Wrap** for both the component wire insulation and the outer jacket layer. See page 87 for more details, part numbers, and ordering information.

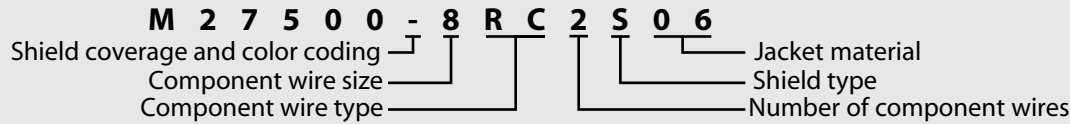
Component Wire	M27500 type	Page	Component Wire	M27500 type	Page
M22759/7	SA	68	M22759/92	WR*	76
M22759/8	TA	68	M25038/1	JA	77
M22759/11	RC	69	M25038/3	JF	78
M22759/12	RE	69	M81381/7	MR	79
M22759/16	TE	70	M81381/8	MS	79
M22759/17	TF	70	M81381/9	MT	80
M22759/18	TG	71	M81381/10	MV	80
M22759/19	TH	71	M81381/11	MW	81
M22759/80	WB*	72	M81381/12	MY	81
M22759/81	WC*	73	M81381/13	NA	82
M22759/82	WE*	73	M81381/14	NB	82
M22759/86	WJ*	74	M81381/17	NE	83
M22759/87	WK*	74	M81381/18	NF	83
M22759/88	WL*	74	M81381/19	NG	84
M22759/89	WM*	75	M81381/20	NH	84
M22759/90	WN*	75	M81381/21	NK	85
M22759/91	WP*	76	M81381/22	NL	86

*Available with **Seamless Wrap** PTFE tape insulation and jacket.

See following pages for numbering system, material codes, and color coding charts.

MIL-DTL-27500 Cables—part numbering

MIL-DTL-27500 Part Numbering



MIL-DTL-27500 Component Wire Codes

We can supply M27500 cables with component wires other than those listed; please call with your requirements.

Wire Type	Code	Wire Type	Code	Wire Type	Code	Wire Type	Code	Wire Type	Code	Wire Type	Code
M22759/5	VA	M22759/16	TE	M22759/28	JB	M22759/85	WH	M25038/1	JA	M81381/13	NA
M22759/6	WA	M22759/17	TF	M22759/29	JC	M22759/86	WJ	M25038/3	JF	M81381/14	NB
M22759/7	SA	M22759/18	TG	M22759/30	JD	M22759/87	WK	M81381/7	MR	M81381/17	NE
M22759/8	TA	M22759/19	TH	M22759/31	JE	M22759/88	WL	M81381/8	MS	M81381/18	NF
M22759/9	LE	M22759/20	TK	M22759/80	WB	M22759/89	WM	M81381/9	MT	M81381/19	NG
M22759/10	LH	M22759/21	TL	M22759/81	WC	M22759/90	WN	M81381/10	MV	M81381/20	NH
M22759/11	RC	M22759/22	TM	M22759/82	WE	M22759/91	WP	M81381/11	MW	M81381/21	NK
M22759/12	RE	M22759/23	TN	M22759/84	WG	M22759/92	WR	M81381/12	MY	M81381/22	NL

MIL-DTL-27500 Shield Material Codes

When both double shield and double jacket are specified, the inner jacket is between the two layers of shield.

Shield Material , Wire shape	Temperature limit, °C	Single shield	Double shield
No shield	—	U	U
Nickel-plated copper, round	260	N	Y
Silver-plated copper, round	200	S	W
Tin-plated copper, round	150	T	V
Heavy nickel-plated copper, round	400	C	R
Stainless steel, round	400	F	Z
Nickel-plated high-strength copper alloy, round	260	P	L
Silver-plated high-strength copper alloy, round	200	M	K
Nickel-plated copper, flat	260	*	#
Silver-plated copper, flat	200	G	A
Tin-plated copper, flat	150	J	D
Nickel-plated high-strength copper alloy, flat	260	E	X
Silver-plated high-strength copper alloy, flat	200	H	B

MIL-DTL-27500 Jacket Material Codes

Temperature limits are for information only; other cable components may determine the temperature limit for the finished cable.

Jacket material and color	Temp. limit, °C	Single jacket	Double jacket
No jacket	—	00	00
ETFE, extruded, clear	150	15	65
ETFE, extruded, white	150	14	64
FEP, extruded, clear	200	05	55
FEP, extruded, white	200	09	59
Nylon, extruded, clear	105	02	52
PFA, extruded, clear	260	21	71
PFA, extruded, white	260	20	70
Natural polyimide / clear FEP tape, wrapped and heat sealed, with FEP outer surface	200	11	61
Natural polyimide / FEP tape, wrapped and heat sealed, with polyimide outer surface	200	12	62
PTFE, taped, white*	260	06	56
PTFE tape, white, wrapped over a tape layer of natural polyimide combined with FEP and heat sealed*	260	24	74
PTFE-coated glass braid impregnated with PTFE finisher over PTFE tape, natural	260	07	57
PVC, extruded, white	90	01	51

*These cables can be provided with **Seamless Wrap** PTFE tape jackets (see page 87 for details).

See next page for color coding information.

MIL-DTL-27500 Cables—color coding

MIL-DTL-27500 Color Coding

Color coding for MIL-DTL-27500 cables is specified in conjunction with desired shield coverage:

Color Code for Shield Coverage of:		MIL-DTL-27500 terminology	Component wire identification method
85%	90%		
"_"	C	Preferred method, Table III A	White wires with colored stripes—stripe color per Table III A.
F	H	Preferred method, Table III B	White wires with colored stripes—stripe color per Table III B.
A	D	Optional method A, Table III A	Solid color wires—colors per Table III A.
G	J	Optional method A, Table III B	Solid color wires—colors per Table III B.
B	E	Optional method B, Table III C	Wires are all the same color (based on AWG size), per Table III C. Bands of a contrasting color are printed on each wire to denote wire number (circuit ID) per Table III D.
K	M	Optional method C	Wires are all the same color (based on AWG size), per Table III C. 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 III A Color Coding

- For **"preferred method"** color coding, colors 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 III B 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














Table III C Color Coding

- For **"optional method B"** color coding, wire insulation color is based on AWG size, with color bands per Table III D 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 III D 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
1	None
2	2 narrow 
3	3 narrow 
4	4 narrow 
5	5 narrow 
6	6 narrow 
7	7 narrow 
8	1 wide, 1 narrow 
9	1 wide, 2 narrow 
10	1 wide, 3 narrow 
11	1 wide, 4 narrow 
12	1 wide, 5 narrow 
13	2 wide, 1 narrow 
14	2 wide, 2 narrow 
15	2 wide, 3 narrow 