

NEMA WC 27500

Shielded and Unshielded Military

APPLICATION

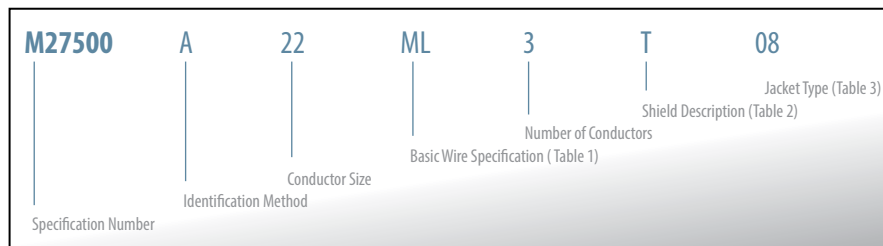
The ANSI/NEMA WC 27500 REV A specification is commonly used to describe both shielded and unshielded cable constructions for avionics, aerospace, and airframe applications. The specification allows the user a wide variety of construction choices. Circuit identification, conductor size, insulation type, number of conductors, shielding material, and jacket compound may all be specified using this document.

QPL is required for WC 27500 in addition to the basic component wires. The producer of the finished cable must be a qualified source under the applicable basic wire specification or must provide evidence that Qualified wire was used in the construction of the cable.

Since Marmon Aerospace & Defense has a large variety of military QPL approvals, it is able to provide one of the widest ranges of WC 27500 constructions of any source in the wire and cable industry. Although this brief catalog sheet cannot list all the detailed testing and specification requirements contained in the complete WC 27500 document, we have summarized the major construction features of the specification and listed those that Marmon Aerospace & Defense produces. Please refer to WC 27500 for complete performance and test details.



ANATOMY OF A PART NUMBER



The basic wire specification, part number designation symbol, and a brief description of the insulation type are listed in Table 1.

TABLE 1 - Basic Wire Specifications

Symbol	Basic Wire Specifications	Insulation Type	Temp. Rating	Voltage
A	SAE AS50861/1	PVC/NYLON	150°C	600V
B	SAE AS50861/2	PVC/NYLON/BRAIDS	150°C	
SB	SAE AS22759/32	XLETFE	150°C	
SC	SAE AS22759/33	XLETFE	200°C	
SD	SAE AS22759/34	XLETFE	150°C	
SE	SAE AS22759/35	XLETFE	200°C	
SM	SAE AS22759/41	XLETFE	200°C	
SN	SAE AS22759/42	XLETFE	200°C	
SP	SAE AS22759/43	XLETFE	200°C	
SR	SAE AS22759/44	XLETFE	200°C	
SS	SAE AS22759/45	XLETFE	200°C	
ST	SAE AS22759/46	XLETFE	200°C	
TE	SAE AS22759/16	ETFE	150°C	
TG	SAE AS22759/18	ETFE	150°C	
MH	SAE AS81044/9	XL POLY/KYNAR	150°C	
MJ	SAE AS81044/10	XL POLY/KYNAR	150°C	
MK	SAE AS81044/11	XL POLY/KYNAR	150°C	
ML	SAE AS81044/12	XL POLY/KYNAR	150°C	
MM	SAE AS81044/13	XL POLY/KYNAR	150°C	

The specification also allows a wide variety of jacket materials in both single and double wall constructions. The double jacketed constructions are to be used in conjunction with the double shields listed above. A double jacket is applied using two shields with the inner jacket isolating the shields, plus an outer jacket.

TABLE 2 - Shield Descriptions

Single Shield	Double Shield	Shield Material	Temp. Rating
U	—	Not Shielded	—
T	V	Tin plated copper, round	150°C
S	W	Silver plated copper, round	200°C
N	Y	Nickel plated copper, round	260°C
F	Z	Stainless steel, round	400°C
C	R	Nickel clad copper, round	400°C
M	K	Silver plated high strength, copper alloy, round	200°C
P	L	Nickel plated high strength, copper alloy, round	260°C

TABLE 3 - Jacket Types

Single Jacket	Double Jacket	Jacket Material	Temp. Rating
00	00	No Jacket	—
01	51	Extruded white PVC	90°C
02	52	Extruded clear nylon	105°C
05	55	Extruded clear FEP	200°C
08	58	Extruded white irradiated PVDF	150°C
09	59	Extruded white FEP	200°C
10	60	Extruded clear PVDF	125°C
14	64	Extruded white ETFE	150°C
15	65	Extruded clear ETFE	150°C
20	70	Extruded white PFA	260°C
21	71	Extruded clear PFA	260°C
23	73	Extruded white irradiated ETFE	200°C

NEMA WC 27500

Recommended Shield and Jacket Types for Components Listed

CONDUCTOR

Various platings and strandings

INSULATION

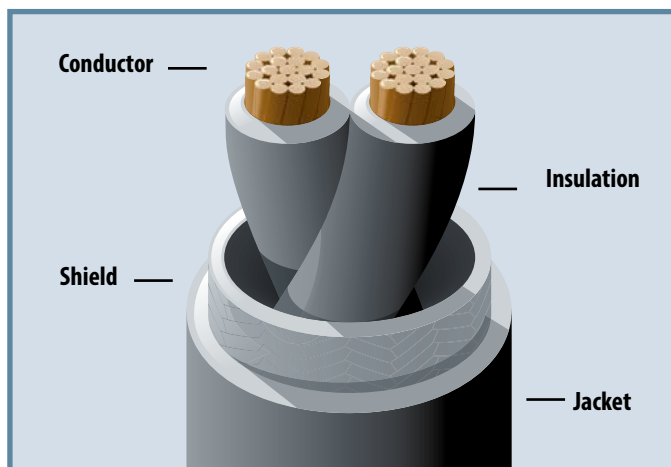
Various insulation types

SHIELD

Various materials
(available unshielded)

JACKET

Various materials
(available unshielded)



Symbol	Basic Wire Specifications	Shield Material	Jacket Material	Temperature Rating	Voltage Rating
Table 1	Table 1	Table 2	Table 3		
A	SAE AS50861/1	U	00	105°C	600V
B	SAE AS50861/2	T	01	90°C	600V
		V	51	90°C	600V
MH	SAE AS81044/9	U	00	150°C	600V
MJ	SAE AS81044/10	T	08	150°C	600V
MK	SAE AS81044/11	V	58	150°C	600V
ML	SAE AS81044/12				
MM	SAE AS81044/13				
SB	SAE AS22759/32	U	00	150°C	600V
SD	SAE AS22759/34	T	23	150°C	600V
		V	73	150°C	600V
SC	SAE AS22759/33	U	00	200°C	600V
SE	SAE AS22759/35	S	23	200°C	600V
SP	SAE AS22759/43	W	73	200°C	600V
SR	SAE AS22759/44				
SM	SAE AS22759/41	U	00	200°C	600V
SN	SAE AS22759/42	N	23	200°C	600V
SS	SAE AS22759/45	Y	73	200°C	600V
ST	SAE AS22759/46				

The above part numbers represent the more popular constructions. However, other designs are available upon request.

All products are manufactured to meet RoHS compliance, except when material requirements prohibit it.

For RoHS exceptions, please contact our sales department.

