AEROSPACE

NEMA WC 27500

Shielded and Unshielded Military

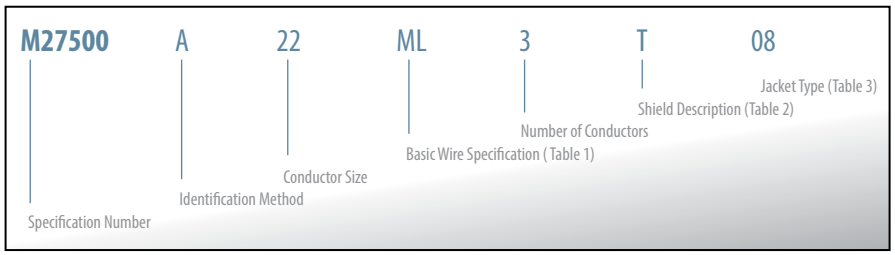
APPLICATION

The NEMA WC 27500 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.

Although there is not a QPL required for WC 27500 in itself, the basic component wires are QPL. Thus, 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 RSCC Aerospace & Defense has a large variety of military QPL approvals, it is able to provide one of the widest ranges of WC 27500 contructions 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 RSCC Aerospace & Defense produces. Please refer to WC 27500 for complete performance and test details.

ANATOMY OF A PART NUMBER



All the basic wire specifications listed below may be supplied by RSCC Aerospace & Defence as components in WC 27500 cables. These range from low temperature PVC/Nylon leads through high performance, high temperature constructions. 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	150ºC	600V
B	SAE AS50861/2	PVC/NYLON/BRAIDS	150ºC	
SB	SAE AS22759/32	XLETFE	150ºC	
SC	SAE AS22759/33	XLETFE	200ºC	
SD	SAE AS22759/34	XLETFE	150ºC	
SE	SAE AS22759/35	XLETFE	200ºC	
SM	SAE AS22759/41	XLETFE	200ºC	
SN	SAE AS22759/42	XLETFE	200ºC	
SP	SAE AS22759/43	XLETFE	200ºC	
SR	SAE AS22759/44	XLETFE	200ºC	
SS	SAE AS22759/45	XLETFE	200ºC	
ST	SAE AS22759/46	XLETFE	200ºC	
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	150ºC
S	W	Silver plated copper, round	200ºC
N	Y	Nickel plated copper, round	260ºC
F	Z	Stainless steel, round	400ºC
C	R	Nickel clad copper, round	400ºC
M	K	Silver plated high strength, copper alloy, round	200ºC
P	L	Nickel plated high strength, copper alloy, round	260ºC

TABLE 3 - Jacket Types

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

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NEMA WC 27500

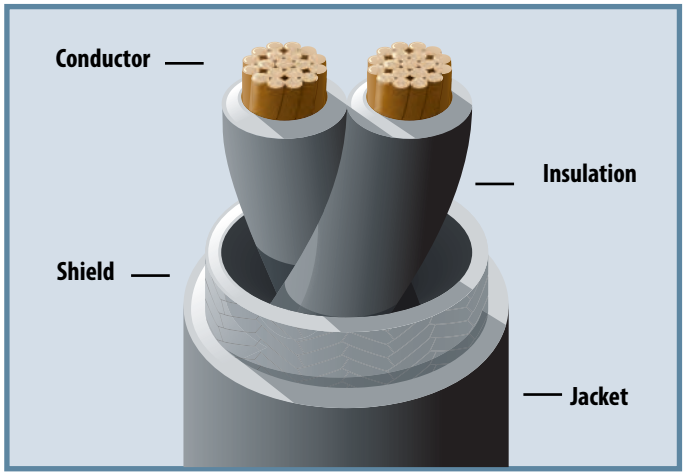
Recommended Shield and Jacket Types for Components Listed

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
		T	01	90°C	600V
B	SAE AS50861/2	V	51	90°C	600V
MH	SAE AS81044/9				
MJ	SAE AS81044/10	U	00	150°C	600V
MK	SAE AS81044/11	T	08	150°C	600V
ML	SAE AS81044/12	V	58	150°C	600V
MM	SAE AS81044/13				
SB	SAE AS22759/32	U	00	150°C	600V
		T	23	150°C	600V
SD	SAE AS22759/34	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.

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