



NEMA WC 27500

Shielded and Unshielded Military

APPLICATION

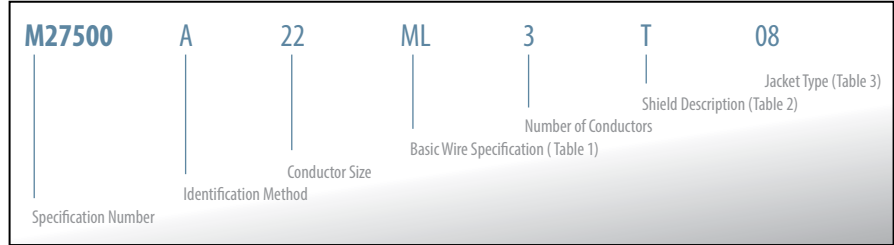
The NEMA WC 27500 specification is commonly used to describe both shielded and unshielded cable constructions for avionics, aerospace, and airframe applications. The specification allows the user a wide variety of construction choices. Circuit identification, conductor size, insulation type, number of 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 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 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 & Defense 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 | 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

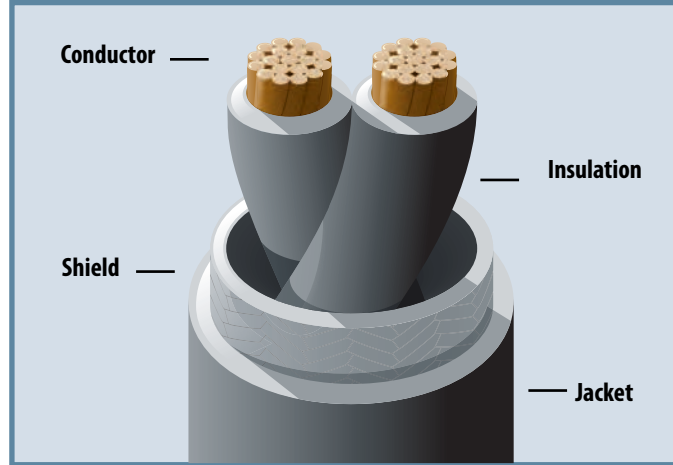
Various insulation types

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 | | | | |
| 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 |
| 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.