

Shielded and Unshielded Aerospace

Military

MIL-C-27500 Cables

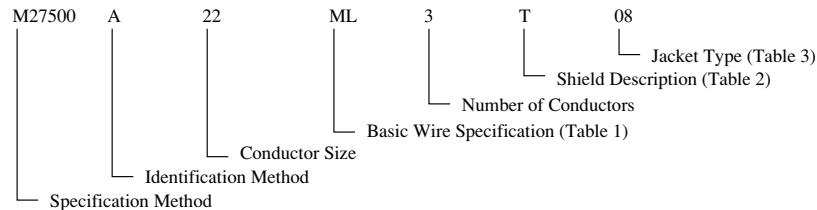
The MIL-C-27500 specification is commonly used to describe both shielded and unshielded cable constructions for avionics, aerospace, and airframe applications. The specification allows the user a wide variety of construction choices. Circuit identification, conductor size, insulation type, number of conductors, shielding material, and jacket compound may all be specified using this document. Single conductor, twisted pairs, and multiconductor cables through 10 components are all included.

Although there is not a QPL required for MIL-C-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 Rockbestos-Surprenant has a large variety of military QPL approvals, Rockbestos-Surprenant is able to provide one of the widest ranges of MIL-C-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 MIL-C-27500 document, we have summarized the major construction features of the specification and listed those that Rockbestos-Surprenant produces. Please refer to MIL-C-27500 for complete performance and test details.

TYPICAL PART NUMBER



All of the basic wire specifications listed below may be supplied by Rockbestos-Surprenant as components in MIL-C-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 Specification	Insulation Type
A	MIL-W-5086/1	PVC/NYLON, 105°C/600V
B	MIL-W-5086/2	PVC/NYLON/BRAIDS, 105°C/600V
H	MIL-W-8777, MS25471	SILICONE/BRAIDED, 200°C/600V
F	MIL-W-8777, MS27110	SILICONE/FEP, 200°C/600V
SB	MIL-W-22759/32	XL TEFZEL, 150°C/600V
SC	MIL-W-22759/33	XL TEFZEL, 200°C/600V
SD	MIL-W-22759/34	XL TEFZEL, 150°C/600V
SE	MIL-W-22759/35	XL TEFZEL, 200°C/600V
SM	MIL-W-22759/41	XL TEFZEL, 200°C/600V
SN	MIL-W-22759/42	XL TEFZEL, 200°C/600V
SP	MIL-W-22759/43	XL TEFZEL, 200°C/600V
SR	MIL-W-22759/44	XL TEFZEL, 200°C/600V
SS	MIL-W-22759/45	XL TEFZEL, 200°C/600V
ST	MIL-W-22759/46	XL TEFZEL, 200°C/600V
MG	MIL-W-81044/8	XL POLY/KYNAR, 150°C/600V
MH	MIL-W-81044/9	XL POLY/KYNAR, 150°C/600V
MJ	MIL-W-81044/10	XL POLY/KYNAR, 150°C/600V
MK	MIL-W-81044/11	XL POLY/KYNAR, 150°C/600V
ML	MIL-W-81044/12	XL POLY/KYNAR, 150°C/600V
MM	MIL-W-81044/13	XL POLY/KYNAR, 150°C/600V

TABLE 2 — SHIELD DESCRIPTIONS

Single Shield	Double Shield	Shield Material	Temperature Rating
U	—	Not Shielded	—
T	V	Tin-coated copper, round	150°C
S	W	Silver-coated copper, round	200°C
N	Y	Nickel-coated copper, round	260°C
F	Z	Stainless steel, round	400°C
C	R	Nickel-clad copper, round	400°C
M	K	Silver-coated high strength copper alloy, round	200°C
P	L	Nickel-coated high strength copper alloy, round	260°C
G	A	Silver-coated copper, flat	200°C
H	B	Silver-coated high strength copper alloy, flat	200°C
J	D	Tin-coated copper, flat	150°C
E	X	Nickel-coated high strength copper alloy, flat	260°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 3 — JACKET STYLES

Single Jacket	Double Jacket	Jacket Material
00	00	No jacket
01	51	Extruded white PVC
02	52	Extruded clear nylon
03	53	White nylon braid over mylar
04	54	Polyester braid over mylar
05	55	Extruded clear FEP
08	58	XL white extruded Kynar
09	59	Extruded white FEP Teflon
10	60	Clear Kynar
14	64	Extruded white Tefzel
15	65	Extruded clear Tefzel
17	67	Extruded white Halar
18	68	Extruded clear Halar
20	70	White PFA Teflon
21	71	Clear PFA Teflon
23	73	Irradiated modified Tefzel