INCH-POUND

MIL-C-17/131B
31 March 1992
SUPERSEDING
MIL-C-17/131A
9 October 1979

MILITARY SPECIFICATION SHEET

CABLES, RADIO FREQUENCY, FLEXIBLE, TRIAXIAL, 50 OHMS, M17/131-RG403

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the produce described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-C-17.

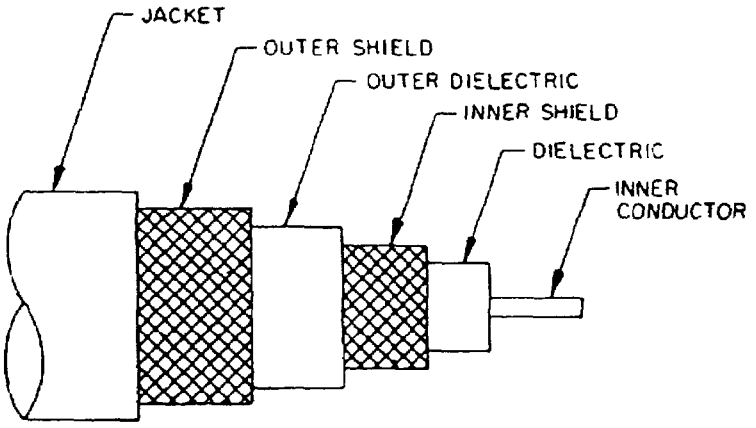


FIGURE. 1 Configuration.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

TABLE I. Description.

Components	Construction details
Inner conductor	Seven strands of AWG size 38 silver-coated, copper-covered steel. Overall diameter: .012 inch nominal.
Dielectric	Type F-1. Overall diameter: .033 ±.002 inch.
Inner shield	Silver-coated, AWG size 38 copper wire. Overall diameter: .048 - .054 inch. Coverage: 95.9% nominal Carriers: 16 Ends: 3 Picks/inch: 25.0 ±10%
Outer dielectric	Type M-1. Overall diameter: .068 - .080 inch.
Outer shield	Silver-coated, AWG size 38 copper wire. Overall diameter: .084 - .098. Coverage: 95.9% nominal Carrier: 16 Ends: 6 Picks/inch: 13.4 ±10%
Outer jacket	Type IX. Overall diameter: .104 - .128 inch. Wall thickness: .010 inch minimum.

ENGINEERING INFORMATION:

Continuous working voltage:

750 V rms, minimum, inner conductor to inner shield.
300 V rms, minimum, inner shield to outer shield.

Operating frequency: 10 GHz, maximum.

Velocity of propagation: 69.5%, nominal.

Power rating: See figure 2.

Operating temperature range: -55° to +200°C.

Inner conductor properties:

DC resistance (maximum at 20°C): 24.45 ohms per 100 feet.

Elongation: 10 percent, minimum.

Tensile strength: 50 klbf/inch^2, minimum.

Engineering note: This cable useful in high temperature applications.

REQUIREMENTS:

Dimensions, configuration, and description: See figure 1 and table I.

Environmental and mechanical:

Visual and mechanical examination:

Out-of-roundness: Not applicable.

Eccentricity: Not applicable.

Adhesion of conductors:

Inner conductor to core: 1.5 pounds, minimum; 4 pounds, maximum.

Electrical and mechanical:

Operational:

Continuity: Applicable.

Spark test: 2,000 V rms +25 percent, -0 percent.

Voltage withstanding:

2,000 V rms, minimum, inner conductor to inner shield.
1,000 V rms, minimum, inner shield to outer shield.

Insulation resistance: Not applicable.

Corona extinction voltage: 1,000 V rms, minimum, inner conductor to inner shield.

Characteristic impedance: 50 ohms ±2 ohms.

RF transmission loss (attenuation): 37 dB maximum at 400 MHz. 1/

Standing wave ratio (return loss): See figure 3. 1/

Capacitance: 30.2 pF/ft, maximum, inner conductor to inner shield.
160 pF/ft, maximum, inner shield to outer shield.

1/ This test is performed with the shields connected.

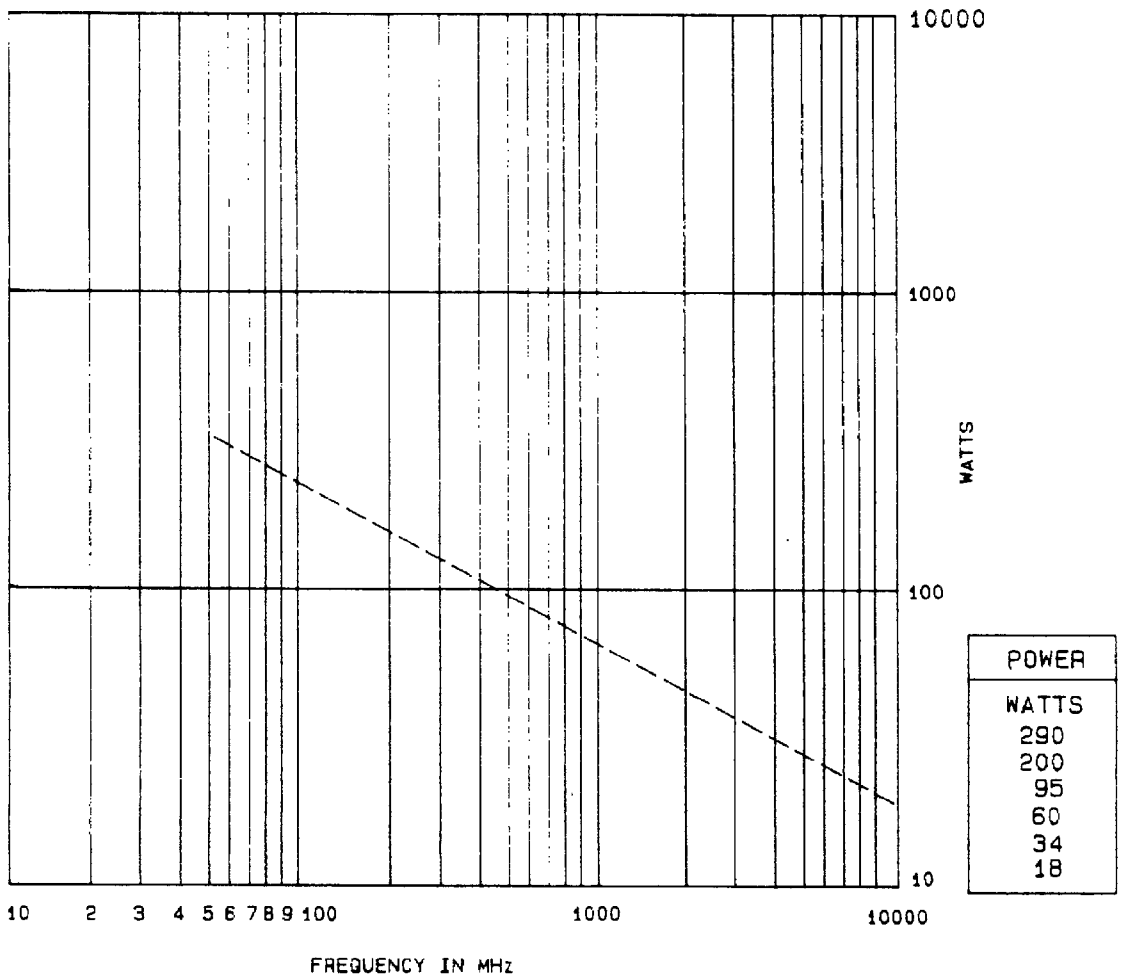
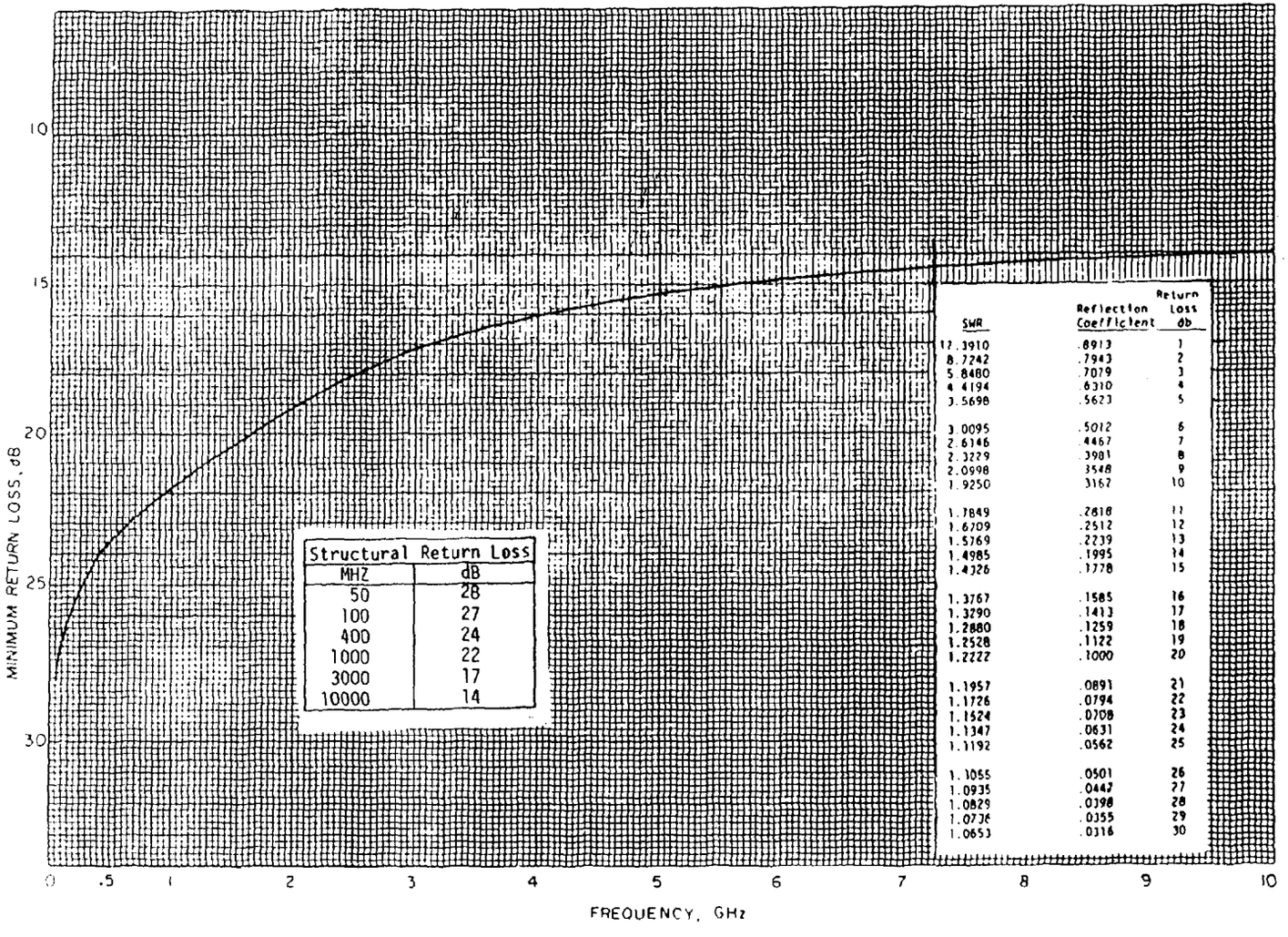


FIGURE 2. Power rating.



Structural Return Loss	
MHZ	dB
50	28
100	27
400	24
1000	22
3000	17
10000	14

SWR	Reflection Coefficient	Return Loss db
17.3910	.8913	1
8.7242	.7943	2
5.8480	.7079	3
4.4194	.6310	4
3.5698	.5623	5
3.0095	.5012	6
2.6146	.4467	7
2.3229	.3981	8
2.0998	.3548	9
1.9250	.3167	10
1.7849	.2818	11
1.6709	.2512	12
1.5769	.2239	13
1.4985	.1995	14
1.4326	.1778	15
1.3767	.1585	16
1.3290	.1413	17
1.2880	.1259	18
1.2528	.1122	19
1.2222	.1000	20
1.1957	.0891	21
1.1726	.0794	22
1.1524	.0708	23
1.1347	.0631	24
1.1192	.0562	25
1.1055	.0501	26
1.0935	.0447	27
1.0829	.0398	28
1.0736	.0355	29
1.0653	.0316	30

FIGURE 3 Structural return loss.

Capacitance stability: Not applicable.

Capacitance unbalance: Not applicable.

Transmission unbalance: Not applicable.

Mechanically induced noise voltage: Not applicable.

Time delay: Not applicable.

Aging stability: Not applicable.

Stress-crack resistance: +230° ±5°C for 96 hours.

Outer conductor integrity: Not applicable.

Cold bend: -55° ±2°C.

Dimensional stability: +200° ±5°C.

Inner conductor from core: .062 inch, maximum.
Inner conductor from jacket: .125 inch, maximum.

Contamination: Not applicable.

Bendability: Not applicable.

Flammability: Not applicable.

Flame propagation: Not applicable.

Acid gas generation: Not applicable.

Halogen: Not applicable.

Immersion tests: Not applicable.

Smoke index: Not applicable.

Toxicity index: Not applicable.

Durometer hardness: Not applicable.

Weathering: Not applicable.

Abrasion resistance: Not applicable.

Tear strength: Not applicable.

Heat distortion: Not applicable.

Physicals (aged): Not applicable.

Tensile strength and elongation: Not applicable.

Marking: See table II.

Weight: 1.65 pounds per 100 feet, maximum.

Workmanship: Not applicable.

Supersession data: See table II.

Part or Identifying Number (PIN): See table II.

TABLE II. Cross reference of PIN.

PIN	Superseded PIN or type designation
M17/131-RG403	RG-403/U

Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:
Army - CR
Navy - EC
Air Force - 85

Review activities:
Army - MI
Navy - SH
Air Force - 11, 17, 85
DLA - ES, IS

User activities:
Army - AR, AT, ME
Navy - AS, MC, OS
Air Force - 19

Preparing activity:
Army - CR

Agent:
DLA - ES

(Project 6145-1196)