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REV.
A

AS6070™/4

FEDERAL SUPPLY CLASS
6145

RATIONALE

CHANGE REQUIRED TO CLARIFY AND CORRECT REQUIREMENTS.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS6070.

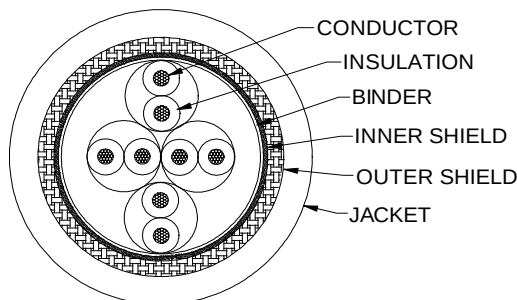


FIGURE 1 - FOUR PAIR CONFIGURATION (DESIGN SHOWN IS NOTATIONAL)

1.0 CONSTRUCTION DETAILS

TABLE 1

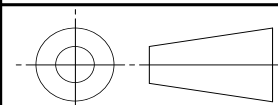
COMPONENT	MATERIAL	REQUIREMENT
CONDUCTOR 1/	24 AWG 19X36 SILVER PLATED COPPER ALLOY	.0244 INCH MAXIMUM
INSULATION	FLUOROPOLYMER	.045 INCH ± .003 INCH
INSULATION COLOR	PAIR 1: WHITE/BLUE & BLUE OR WHITE & BLUE 2/ PAIR 2: WHITE/ORANGE & ORANGE OR WHITE & ORANGE 2/ PAIR 3: WHITE/GREEN & GREEN OR WHITE & GREEN 2/ PAIR 4: WHITE/BROWN & BROWN OR WHITE & BROWN 2/	
BINDER	PTFE TAPE	
INNER SHIELD	ALUMINUM/POLYIMIDE FOIL	100% COVERAGE
OUTER SHIELD	ROUND SILVER PLATED COPPER BRAID	85% MINIMUM COVERAGE
JACKET	FEP	.255 INCH ± .010 INCH
COLOR	SEE TABLE 2	
CABLE WEIGHT	24 AWG	52.0 POUNDS/1000 FEET MAXIMUM

1/ CONDUCTOR SHALL BE IN ACCORDANCE WITH TYPE SCA OR SCA1 OF AS29606 TABLE 4C.

2/ PAIRS CONTAINING SOLID WHITE WIRE NOT FOR US DEPARTMENT OF DEFENSE (NAVY) USE.

SAE values your input. To provide feedback on this Technical Report, please visit <http://standards.sae.org/AS6070/4A>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8/AE-8D

PROCUREMENT SPECIFICATION: AS6070



AEROSPACE STANDARD

(R) CABLE, 4 PAIR 24 AWG
COPPER ALLOY, SHIELDED, 100 OHM, 150 °C
ETHERNET 1000 BASE T

AS6070™/4
SHEET 1 OF 5

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2.0 CABLE CONFIGURATION

CABLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH TABLE 1. THE CABLE SHALL HAVE THE FOLLOWING OPERATING CHARACTERISTICS AND DESIGN REQUIREMENTS:

- 2.1 CONTINUOUS WORKING VOLTAGE: 60 V DC
- 2.2 OPERATING FREQUENCY: 1 TO 100 MHz
- 2.3 OPERATING TEMPERATURE: -55 °C MINIMUM TO +150 °C MAXIMUM
- 2.4 CONDUCTOR DCR (PRIOR TO INSULATING) AT 20 °C: 28.4 OHMS/1000 FEET MAXIMUM
- 2.5 CABLE MINIMUM BEND RADIUS: 2.50 INCHES

3.0 PERFORMANCE REQUIREMENTS PER AS6070 UNLESS OTHERWISE SPECIFIED

3.1 LIFE CYCLE

OVEN TEMPERATURE 200 °C: WIRE INSULATION SHALL NOT SHRINK MORE THAN .090 INCH AND JACKET INSULATION SHALL NOT SHRINK MORE THAN .150 INCH. NO MANDREL OR WEIGHTS ARE REQUIRED DURING THE LIFE CYCLE TEST. PERFORM THE BEND TEST AFTER OVEN AGING. JACKET AND COMPONENT WIRES SHALL MEET DIELECTRIC WITHSTAND REQUIREMENTS.

3.2 BEND

REQUIRED AFTER LIFE CYCLE AND FLUID IMMERSION. THE JACKET AND COMPONENT WIRES SHALL MEET DIELECTRIC WITHSTAND REQUIREMENTS. MANDREL SIZE: 10 TIMES CABLE DIAMETER (±10%); WEIGHTS: NONE. WRAP CABLE BY HAND AROUND MANDREL WITH SUFFICIENT TENSION TO HOLD CABLE FIRMLY AGAINST MANDREL.

3.3 BLOCKING

OVEN TEMPERATURE: 200 °C ± 5 °C; MANDREL SIZE: 10 TIMES CABLE DIAMETER (±10%). NO BLOCKING BETWEEN ADJACENT LAYERS ALLOWED. JACKET AND COMPONENT WIRES MEET DIELECTRIC WITHSTAND REQUIREMENTS.

3.4 COLD BEND

COLD CHAMBER TEMPERATURE: -55 °C ± 5 °C; MANDREL SIZE: 10 TIMES CABLE DIAMETER (±10%). NO CRACKING OF JACKET ALLOWED. JACKET AND COMPONENT WIRES MEET DIELECTRIC WITHSTAND REQUIREMENTS.

3.5 CONDUCTOR ELONGATION AND TENSILE BREAK STRENGTH PER AS29606, TABLE 4C.

3.6 DRY DIELECTRIC WITHSTAND - COMPONENT WIRES

COMPONENT WIRES SHALL WITHSTAND 1500 V RMS FOR BOTH INITIAL QUALIFICATION AND QUALITY CONFORMANCE TESTING. THE WITHSTAND VOLTAGE SHALL BE APPLIED FOR 1 MINUTE WIRE TO WIRE AND WIRE TO SHIELD. NO SPECIAL PREPARATION OR CONDITIONS APPLY. THERE SHALL BE NO EVIDENCE OF DAMAGE TO WIRE PAIR INSULATION.

3.7 DIMENSIONAL

SEE TABLE 1.

3.8 FLAMMABILITY

MAXIMUM FLAME TRAVEL SHALL BE 3 INCHES, NO EVIDENCE OF FLAMING PARTICLES, AND FLAME EXTINGUISH TIME SHALL BE 5 SECONDS MAXIMUM.

3.9 FLUID IMMERSION

AFTER THE FLUID IMMERSION TEST: DIAMETER OF THE CABLE SHALL NOT CHANGE MORE THAN 5%. JACKET SHALL NOT CRACK. AFTER BEND TEST: THE JACKET AND COMPONENT WIRES SHALL MEET DIELECTRIC WITHSTAND REQUIREMENTS.

3.10 HUMIDITY RESISTANCE

AFTER 15 CYCLES: FOLLOWING THE COMPLETION OF 15 CYCLES OF THE HUMIDITY TEST, THE CABLE SHALL MEET THE DRY DIELECTRIC REQUIREMENTS.

3.11 SPARK TEST ON PRIMARY WIRES

BEFORE SECONDARY PROCESSING, THE PRIMARY WIRES SHALL BE TESTED IN ACCORDANCE WITH AS4373, TEST METHOD 505, METHOD (1). THE SIGNAL AMPLITUDE AND FREQUENCY SHALL BE: 1500 V AND 3 KHz.

	AEROSPACE STANDARD	AS6070™/4 SHEET 2 OF 5	REV. A
	(R) CABLE, 4 PAIR 24 AWG COPPER ALLOY, SHIELDED, 100 OHM, 150 °C ETHERNET 1000 BASE T		