METRIC

KSC-SPEC-E-0021B
July 24, 1996
Supersedes
KSC-SPEC-E-0021A
September 27, 1977

AC POWER CABLE, INTERLOCKED-ARMORED, 600-VOLT, 60-HERTZ, PROCUREMENT OF, SPECIFICATION FOR

ENGINEERING DEVELOPMENT DIRECTORATE

National Aeronautics and
Space Administration

John F. Kennedy Space Center

KSC-SPEC-E-0021B
July 24, 1996
Supersedes
KSC-SPEC-E-0021A
September 27, 1977

AC POWER CABLE, INTERLOCKED-ARMORED, 600-VOLT, 60 HERTZ, PROCUREMENT OF, SPECIFICATION FOR

Approved:

Walter T. Murphy
Director of Engineering Development

JOHN F. KENNEDY SPACE CENTER, NASA

P2/MSWORD/SPEC0021.DOC

TABLE OF CONTENTS

Section	Title	Page
1.	SCOPE	1
2.	APPLICABLE DOCUMENTS	1
2.1	Non-Governmental	1
3.	REQUIREMENTS	2
3.1	Material	2
3.1.1	Conductors	2
3.1.1.1	Coatings	2
3.1.1.2	Stranding	2
3.1.2	Insulation	2
3.1.2.1	Working Voltage	2
3.1.2.2	Temperature	2
3.2	Color Coding	2
3.3	Surface Marking	2
3.4	Cabling	2
3.4.1	Assembly	2
3.4.2	Fillers	2
3.4.3	Covering	2
3.4.4	Armor	2
3.4.5	Bonding	3
3.5	Application	3
3.5.1	Installation	3
3.5.2	Use	3
4.	QUALITY ASSURANCE PROVISIONS	3
5.	PREPARATION FOR DELIVERY	3
6.	NOTES	3
6.1	Intended Use	3
6.2	Ordering Data	3

JOHN F. KENNEDY SPACE CENTER, NASA
AC POWER CABLE, INTERLOCKED-ARMORED, 600-VOLT, 60-HERTZ, PROCUREMENT OF, SPECIFICATION FOR

1. SCOPE

This specification provides data for the procurement of interlocked armor-conductor 600-volt, 60-hertz power cable. The cables included in this specification employ soft, annealed-coated, copper conductors insulated with cross-linked polyethylene.

2. APPLICABLE DOCUMENTS

The following documents form a part of this document to the extent specified herein. When this document is used for procurement, including solicitation, or is added to an existing contract, the specific revision levels, amendments, and approval dates of said documents shall be specified in an attachment to the Solicitation/Statement of Work/Contract.

2.1 Non-Governmental.

National Electric Manufacturers Association (NEMA)

NEMA WC5/ICEA S-61-402	Thermoplastic - Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy

(Applications for copies should be addressed to the National Electrical Manufacturers Association (NEMA), Publication Sales, 2101 L Street, Suite 300, Washington, DC 20037.)

National Fire Protection Association (NFPA)

NFPA 70	National Electrical Code

(Applications for copies should be addressed to the National Fire Protection Associations, 60 Batterymarch Street, Boston, MA 92110.)

3. REQUIREMENTS

3.1 Material.

3.1.1 Conductors. - All conductors used in cables listed in this specification shall be of soft annealed-coated copper per NEMA WC5/ICEA S-61-402.

3.1.1.1 Coatings. - Coatings used shall be tin.

3.1.1.2 Stranding. - Conductors shall be stranded, Class B, per NEMA WC5/ICEA S-61-402.

3.1.2 Insulation. - The insulation used on cables in this specification shall be cross-linked polyethylene per NEMA WC5/ICEA S-61-402.

3.1.2.1 Working Voltage. - The working voltage of the completed cables shall be 600 volts, 60-hertz.

3.1.2.2 Temperature. - Maximum operating temperature shall be 90 degrees Celsius (°C).

3.2 Color Coding. - Individual conductors listed in this specification shall be identified by one of the following colors: black, white, or red.

3.3 Surface Marking. - Cables listed in this specification shall be marked in accordance with the provisions of NFPA 70, Articles 310 and 334.

3.4 Cabling.

3.4.1 Assembly. - Individual conductors shall be cabled with a left-hand lay per NEMA WC5/ICEA S-61-402.

3.4.2 Fillers. - Where necessary, the interstices shall be filled to give the completed cable a circular cross section, per NEMA WC5/ICEA S-61-402.

3.4.3 Covering. - Cabled conductors shall have an overall moisture-resistant and fire-retardant fibrous covering per NEMA WC5/ICEA S-61-402.

3.4.4 Armor. - Armor shall be of an aluminum, either interlocked flat tape or close fitting corrugated tube, per NEMA WC5/ICEA S-61-402.

3.4.5 Bonding. - Assembled cable shall have an internal bonding strip in continuous contact with the armor for its entire length, per NEMA WC5/ICEA S-61-402.

3.5 Application.

3.5.1 Installation. - Exposed or concealed, wet or dry locations above or below grade.

3.5.2 Use. - Power and lighting circuits.

4. QUALITY ASSURANCE PROVISIONS

The supplier is responsible for the performance of all inspection and test requirements as specified in NEMA WC5/ICEA S-61-402. National Electrical Code (NEC) or Underwriter's Laboratories (UL) stamp or label shall be proof of sufficient factory and/or laboratory tests.

5. PREPARATION FOR DELIVERY

Cable and wire shall be packaged in accordance with the manufacturer's standard practice, providing that it insures protection for the product during shipment and safe delivery to its destination.

6. NOTES

6.1 Intended Use. - This specification is intended to provide information for the procurement of interlocked armor-conductor, 600-volt, 60-hertz ac power cable for use at the Kennedy Space Center (KSC).

6.2 Ordering Data. - Procurement documents should specify the following:

a. Title, number, and date of this specification.

b. Length of wire required and number of lengths.

c. Number of conductors.

d. Conductor size.

NOTICE. The Government drawings, specifications, and/or data are prepared for the official use by, or on the behalf of, the United States Government. The Government neither warrants these Government drawings, specifications, or other data, nor assumes any responsibility or obligation, for their use for purposes other than the Government project for which they were prepared and/or provided by the Government, or an activity directly related thereto. The fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded, by implication or otherwise, as licensing in any manner the holder or any other person or corporation, nor conveying the right or permission, to manufacture, use, or sell any patented invention that may relate thereto.

Custodian:

NASA - John F. Kennedy Space Center

Preparing Activity:

John F. Kennedy Space Center
Electrical Division
Engineering Development Directorate

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers or clarification of requirements on current contracts Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document or to amend contractual requirements

I RECOMMEND A CHANGE:	1 DOCUMENT NUMBER KSC-SPEC-E-0021 Rev. B	2 DOCUMENT DATE July 24, 1996

3 DOCUMENT TITLE
AC Power Cable, Interlocked-Armored, 600-Volt, 60-Hertz, Procurement Of, Specification For

4 NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible Attach extra sheets as needed)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d TELEPHONE *(Include Area Code)*	7. DATE SUBMITTED

8. PREPARING ACTIVITY

a NAME	d. TELEPHONE *(Include Area Code)*
Director of Engineering Development	(407) 867-2565

c. ADDRESS *(Include Zip Code)* National Aeronautics and Space Administration
Mail Code: DE
Kennedy Space Center, FL 32899

KSC FORM 21-610NS (2/94) (C/G 2/94)