

METRIC

A-A-59382A

16 May 2006

SUPERSEDING

A-A-59382

14 November 2003

COMMERCIAL ITEM DESCRIPTION

REUSABLE ENVIRONMENTAL PROTECTION SLEEVES

The General Services Administration has authorized the use of this commercial item description, for all federal agencies.

1. SCOPE. This Commercial Item Description (CID) covers two kit types of black, tubular, continuous, double-wall, reusable sleeves, in a minimum of 13 sizes, to provide corrosion and environmental protection for electrical and electronic connections in shipboard applications where connectors are expected to be frequently accessed.
2. CLASSIFICATION. The sleeves shall be classified by the kit types and size codes in Table I.

TABLE I. Sleeve sizes.

Kit Type	Size Code	ID (max) as supplied mm/(in)	OD (reference) mm/(in)	Length (reference) mm/(in)	Recommended Use Range mm/(in)	Connection Length mm/(in)
1	A	8.4 (0.33)	13.0 (0.51)	125 (4.92)	9 – 17 (0.22 - 0.68)	75 (3.00)
1	B	8.4 (0.33)	13.0 (0.51)	205 (8.07)	9 – 17 (0.22 - 0.68)	150 (6.00)
1, 2	C	10.7 (0.42)	14.2 (0.56)	140 (5.51)	12 – 23 (0.48 - 0.90)	100 (4.00)
1, 2	D	10.7 (0.42)	14.2 (0.56)	240 (9.45)	12 – 23 (0.48 - 0.90)	175 (7.00)
1	E	15.5 (0.61)	19.0 (0.75)	155 (6.10)	18 – 30 (0.69 - 1.20)	100 (4.00)
1	F	15.5 (0.61)	19.0 (0.75)	305 (12.00)	18 – 30 (0.69 - 1.20)	225 (9.00)
1	G	21.6 (0.85)	25.9 (1.02)	185 (7.28)	25 – 38 (0.96 - 1.50)	125 (5.00)
1	H	21.6 (0.85)	25.9 (1.02)	355 (14.00)	25 – 38 (0.96 - 1.50)	250 (10.00)
1	J	31.0 (1.22)	36.8 (1.45)	185 (7.28)	36 – 46 (1.40 - 2.00)	125 (5.00)
1	K	31.0 (1.22)	36.8 (1.45)	260 (10.2)	36 – 46 (1.40 - 2.00)	190 (7.50)
1	L	31.0 (1.22)	36.8 (1.45)	450 (17.72)	36 – 46 (1.40 - 2.00)	300 (12.00)

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Commander, Naval Sea Systems Command, ATTN: SEA 05Q, 1333 Isaac Hull Avenue, SE, Stop 5160, Washington Navy Yard DC 20376-5160 or emailed to CommandStandards@navy.mil, with the subject line "Document Comment". Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

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3. SALIENT CHARACTERISTICS.

3.1 Materials. The kits shall contain a sleeve that is fabricated from a cured, ultraviolet (UV) stabilized Ethylene Propylene Diene Monomer (EPDM) rubber, or like material, that is suitable for use in the intended operating environment that performs to the requirements set forth in this CID. All exposed installation items provided in the kit shall also be UV-stabilized. The sleeve material shall contain no halogens.

3.1.1 Type 1/basic kit. The Type 1/basic kit shall include one sleeve (with a means of transitioning the sleeve onto the connector), a quantity of a formable, sealable, non-bonding filler material (required to fill voids under and at the ends of the sleeve when installed); and a "UV-resistant", releasable and reusable retaining device (used to hold an installed sleeve in place during service). Eleven different Type 1 kits are required, one for each size of sleeve.

3.1.2 Type 2/"N" connector sealing kit. The Type 2/"N" connector sealing kit shall include the Type 1 kit contents plus a slightly over-sized, UV-resistant, connector flange cover, flush filled with a non-bonding environmental sealant, required to protect the base mounting flange of N-type panel mounted connectors (i.e., M39012/14-0002 or UG-58A/U). Two different Type 2 kits are required, one for each of two specified sleeve sizes.

3.2 Operating environment. The sleeves are intended for use aboard surface ships in exposed, unsheltered environments free from direct contact with gasoline, oil and petroleum based products.

3.3 Service life. The design service life in the intended operating environment shall be 8 years.

3.4 Vibration. The sealing properties of the sleeves, the installed position of the sleeves, the performance of the retaining device (and associated potential for the retaining device to cause damaging to the sleeves) shall not be degraded by shipboard vibration. The sleeves shall be tested in accordance with EIA-364-28, Test Condition I, or equivalent. (see 3.12)

3.5 Solar radiation/UV resistance. The sleeves shall not degrade due to the effects of solar radiation. The sleeves shall be tested for a total of 1500 hours using cycle 1 from ASTM G155, Common Exposure Condition (Table X3.1), or equivalent. The sleeves shall be inspected for signs of degradation at 500-hour intervals. (see 3.12)

3.6 Temperature. The sleeves shall show no degradation (see 3.13) and must remain functional over the temperature range of -55 °C to +85 °C. The sleeves shall be tested for:

- a. Temperature life in accordance with EIA 364-17, Test Chamber Temperature Without Electrical Load (Table 1), Test Condition 2, for 1000 hours, or equivalent. (see 3.12)
- b. Temperature shock in accordance with EIA 364-32, Thermal Shock Test Conditions (Table 2), Test Condition I for 25 cycles, or equivalent. Connectors used during the test are "without" electrical load. (see 3.12)

3.7 Sand and dust. The sleeves shall not allow ingress or accumulation of sand or dust on protected connections. The sleeves shall be tested in accordance with MIL-STD-202, Method 110A, or equivalent, for indicated time sequence. (see 3.12)

3.8 Rain and blowing rain. The installed sleeves shall allow no ingress of water under the sleeve or into the area that is to be environmentally protected. The sleeves shall be tested per MIL-STD-810, Method 506.4, RAIN, Procedure I – Rain and Blowing Rain, or equivalent. When testing, subject the specimens to the following sequential rainfall rates; 2 inches per hour for ten minutes, 5 inches per hour for 5 minutes and 2 inches per hour for 15 minutes. During this 30-minute sequence, beginning on the sixth minute, apply and maintain an 18-meter per second (40 mph), horizontal, blowing wind for 15 minutes (i.e., for 5 minutes during each sequential rainfall rate). (see 3.12)

3.9 Salt fog. The sleeves shall not allow degradation of protected connections due to the effects of salt fog or salt spray. The sleeve shall be tested in accordance with EIA 364-26 for 1000 hours, or equivalent. (see 3.12)

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3.10 Acidic atmosphere (exhaust gases). The functional performance of the sleeves shall not be degraded due to the effects of shipboard exhaust gases. The sleeve shall be tested in accordance with the MIL-STD-810, Method 518, using test duration (severity b), or equivalent, using installed Type I and II kit configurations, to demonstrate survival and resistance to chemical attack. (see 3.12)

3.11 Additional physical properties. Table II contains a listing of additional physical properties required of the sleeves under this CID.

TABLE II. Physical properties.

	Property	Performance Requirements	Test Method
Physical/ Chemical	Tensile strength	8.3 MPa (1200 psi) minimum	ASTM D2671
	Ultimate elongation	100% minimum	ASTM D412
	Density	1.1 g/cm ³ maximum	ASTM D792
	Water absorption 24 hours @ 23 °C (73 °F)	0.5 % maximum	ASTM D570
	Flammability	40 mm/min maximum	ASTM D635
Electrical	Dielectric strength	90 kV/cm (225 V/mil) minimum	ASTM D149
	Volume resistivity	1 X 10 ¹² Ω-cm	ASTM D257

NOTE: These sleeves are not intended to be heated during the installation or removal (roll-back) process and must not be cut at anytime time during either process.

3.11.1 Construction. The sleeves shall have a double wall construction (with optional internal lubricant) that permits them to be rolled onto inline and angular connector assemblies or a terminating connection, providing an environmental barrier. A minimum total of 13 different size sleeves are required under this CID. These sleeves shall be provided as kits containing specified installation items to perform one environmentally protected installation (see 7.3).

3.11.2 Environmental barrier. A quantity of a formable, sealable, non-bonding filler material (included in the kit) shall be used to provide an environmental barrier at the connector. The formable, sealable, non-bonding filler material (required to fill voids under and at the ends of the sleeve when installed) shall also be provided as a separate/stand-alone item-of-issue in a linear quantity of at least 20 feet.

3.11.3 Releasable retaining device. A releasable retaining device shall be used to restrict sleeve movement after installation. If re-entry at the connector is required after initial installation, the retaining device shall be released and the sleeve rolled back to provide access to the connector and then returned to the initial protected configuration.

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3.12 Test set-up and conditions. All tests shall have six new specimens using each of the following types of mated connectors (in-line, 90-degree and bulkhead or panel terminated N-type coaxial connectors and straight, 45- and 90-degree bulkhead or panel terminated multi-conductor connectors). A quantity of a formable, sealable, non-bonding filler material (included in the kit) that is used to fill voids under and at the ends of the sleeve when installed shall be used for each test. All connectors shall be mounted horizontally and “without” electrical load. Specimens may be mounted vertically for the Solar Radiation/UV Resistance tests. Kit installation items shall be included in these tests. The selected test specimens shall be mounted on the identified connectors or mandrels that are at least 1.5 times the “as supplied” maximum inside diameter of the selected sleeve. At the end of each of the above tests, the integrity of the sleeves shall be examined for degradation. (see 3.13)

N-type connectors, (w/RG-214 cable)	Panel/bulkhead mount:	M39012/14-0002 or (UG-58A/U)
	In-line/in-series coupler:	UG-29B/U
	Straight plugs:	UG-1185/U, UG-21D/U or UG-21E/U
	Angle adapter:	90 degree, UG-27 C/U

Reference MIL-C-26482 or the MS3470 series to assist in identifying the test items below. An example of the connector to use is MS3475W24-61SX, or equivalent.

Multi-conductor connectors/backshell	Straight
Shell size: 24, (OD~38 mm, 1.5 in.)	45 degree
Number of conductors (not specified)	90 degree
Material: Aluminum alloy	Panel/bulkhead mount

Finish: Cadmium

3.13 Degradation criteria. The kit and its contents shall show no signs of the following: cracking, rupturing, opening of seals or seams, lubricant leakage, sleeve shrinkage, sleeve deformity or the loss of flexibility, the inability of the sleeve to uncover and recover inline and angular connector assemblies or terminating connections, or if the connection protected by the sleeve shows any signs of moisture build-up, water, corrosion or salt, sand or dust deposits. Photographs of each test set-up at: 1) start of testing; 2) visual examination at the end of testing; and 3) just after rolling back the sleeve for examination of sealing effectiveness shall be provided in the test report(s) to support the stated test results.

3.14 Reliability/maintenance.

3.14.1 Reliability. The sleeves shall be able to function for a minimum of 50 access cycles of fully covered position to the fully uncovered position to fully recovered position with no signs of failure.

3.14.2 Maintenance. The sleeve shall require no preventive maintenance.

4. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer’s own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

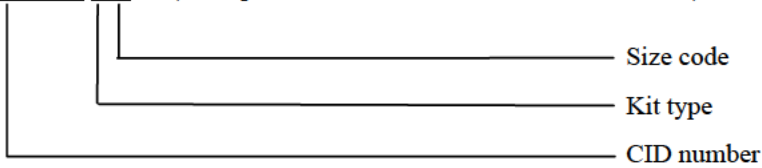
6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

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7. NOTES.

7.1 Part or identification number (PIN). The following part or identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.

AA59382-XX (Example: AA59382-1G for shaded row below)



Kit Type	Size Code	ID (max) as supplied mm/(in)	OD (reference) mm/(in)	Length (reference) mm/(in)	Recommended Use Range mm/(in)	Connection Length mm/(in)
1	A	8.4 (0.33)	13.0 (0.51)	125 (4.92)	9 – 17 (0.22 - 0.68)	75 (3.00)
1	B	8.4 (0.33)	13.0 (0.51)	205 (8.07)	9 – 17 (0.22 - 0.68)	150 (6.00)
1	C	10.7 (0.42)	14.2 (0.56)	140 (5.51)	12 – 23 (0.48 - 0.90)	100 (4.00)
1	D	10.7 (0.42)	14.2 (0.56)	240 (9.45)	12 – 23 (0.48 - 0.90)	175 (7.00)
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1	J	31.0 (1.22)	36.8 (1.45)	185 (7.28)	36 – 46 (1.40 - 2.00)	125 (5.00)
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1	L	31.0 (1.22)	36.8 (1.45)	450 (17.72)	36 – 46 (1.40 - 2.00)	300 (12.00)
2	C	10.7 (0.42)	14.2 (0.56)	140 (5.51)	12 – 23 (0.48 - 0.90)	100 (4.00)
2	D	10.7 (0.42)	14.2 (0.56)	240 (9.45)	12 – 23 (0.48 - 0.90)	175 (7.00)

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7.2 Source of documents.

7.2.1 ASTM. ASTM standards are available from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or online at www.astm.org/.

7.2.2 EIA. EIA standards are available from Electronic Industries Alliance, 2500 Wilson Blvd, Arlington, VA 22201 or online at www.eia.org.

7.2.3 FAR. The Federal Acquisition Regulation may be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402 or online at <http://www.arnet.gov/far>.

7.2.4 Military specifications. Military specifications are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.

7.3 Ordering data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN.
- b. Quantity required.
- c. Product conformance provisions.
- d. Packaging requirements.

7.4 National stock numbers (NSNs). The following is a list of NSNs assigned that correspond to items in this CID. The list may not be indicative of all possible NSNs associated with this CID.

NSN	Type	Size
5970-01-516-4418	1	A
5970-01-516-4422	1	B
5970-01-516-4424	1	C
5970-01-516-4425	1	D
5970-01-516-4428	1	E
5970-01-516-4431	1	F
5970-01-516-4432	1	G
5970-01-516-4973	1	H
5970-01-516-5007	1	J
5970-01-516-5014	1	K
5970-01-516-5015	1	L
5970-01-516-4430	2	C
TBD	2	D
5970-01-516-5022	Stand-alone sealant	25 feet

7.5 Shelf-life. This commercial item description covers items where shelf-life is a consideration. Specific shelf-life requirements should be specified in the contract or purchase order. The shelf-life codes are contained in the Federal Logistics Information System Total Item Record. Additive information for shelf-life management may be obtained from DoD 4140.27-M; Shelf-Life Management Manual, or the designated shelf-life Points of Contact (POC). The POC should be contacted in the following order: (1) the Inventory Control Points (ICPs), and (2) the DoD Service and Agency administrators for the DoD Shelf-Life Program. Appropriate POCs for the DoD Shelf-Life Program can be contacted through the DoD Shelf-Life Management website: <http://www.shelflife.hq.dla.mil/>.

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7.6 Key words.

Corrosion protection
Environmental protection sleeve
Sleeve
Reusable

MILITARY INTERESTS

Custodians:

Army – CR
Navy – SH
Air Force – 11

Review Activities:

Army – MI
Navy – CG
Air Force – 03, 19, 99
DLA – GS, GS2

CIVIL AGENCY COORDINATING ACTIVITY:

GSA – FSS

Preparing Activity:

Navy – SH
(Project 5970-2006-001)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.