INCH-POUND

A-A-59319
31 July 2003

COMMERCIAL ITEM DESCRIPTION

DISPOSABLE AIR FILTERS FOR ENVIRONMENTAL CONTROL SYSTEMS

The General Services Administration has authorized the use of this commercial item description as a replacement for U.S. Navy standard cleanable impingement filters described in MIL-PRF-16552, except those filters used prior to flame arrestors.

1. SCOPE. This commercial item description (CID) describes disposable filter media that is used for air filtration purposes in shipboard heating, ventilating and air conditioning (HVAC) systems.

2. CLASSIFICATION. Disposable air filters shall conform to the following types and sizes:

2.1 Types. Disposable air filters shall be of the following types and efficiencies:

Type I: Filter Pads (to be inserted into a reusable filter frame)

Type II: Filter Panels (internal frames-inserted directly into filter housings)
- Medium Efficiency
- High Efficiency

Type III: Filter Panel Links (filter panels linked together)
- Medium Efficiency
- High Efficiency

Type IV: Filter Sleeves (filter material constructed to fit over an internal frame)
- Medium Efficiency
- High Efficiency

Type V: Filter Cubes (internal frames-inserted directly into filter housings)
- Medium Efficiency
- High Efficiency

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@navsea.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 www.dodssp.daps.mil.

FSC 4130

2.2 Sizes. Each type of filter shall come in the following sizes:

2.2.1 Type I filter pads. Type I filter pads shall be sized to fit within filter holding frames that are sized in accordance with the standard Navy filter dimensions of MIL-PRF-16552 and with commercial filters on Navy ships. Filter pad sizes shall be in accordance with Table I.

TABLE I. Type I filter sizes.

Standard Navy Filter or Commercial Size Designation	Type I Filters (Length x Width) (inches) ±1/8
10AF	7-3/4 x 7-3/4
11AF	13 x 8-1/2
12AF	15 x 10-1/2
13AF	10-1/2 x 22-1/2
14AF	16 x 25
15AF	20 x 20
16AF	20 x 30
Com20x25	20 x 25

2.2.2 Type II filter panels. Type II filter panels shall be designed to fit into standard Navy filter housings and other common filter housings found on Navy ships. The filter material shall be sealed to fit snugly around the internal frame. The internal frame size shall be in accordance with Table II.

TABLE II. Type II filter internal frame sizes.

Standard Navy Filter or Commercial Size Designation	Type II Filters Internal Frame Size (inch) ±1/8
10AF	7-1/8 x 7 1/8
11AF	12-3/8 x 7-7/8
12AF	14-3/8 x 9-7/8
13AF	9-7/8 x 21-7/8
14AF	15-3/8 x 24-3/8
15AF	19-3/8 x 19-3/8
16AF	19-3/8 x 29-3/8
Com20x25	19-3/8 x 24-3/8

2.2.3 Type III filter panel links. Type III filter panel links are the same size as Type II filter panels but the filter panels shall be linked together by the filter material so that multiple panels can be installed and removed as a single unit. The filters shall be linked along either the length or width dimensions. Filter panels shall be designated in accordance with Table III.

TABLE III. Type III filter panel link designation.

Standard Navy or Commercial Filter Size Designation	Type III Filters Internal Frame Size (inch) ± 1/8	Joined on Side S=Short L=Long X=Square	No. of Links
10AF	7-1/8 x 7-1/8	X	AR*
11AF	12-3/8 x 7-7/8	S	AR
11AF	12-3/8 x 7-7/8	L	AR
12AF	14-3/8 x 9-7/8	S	AR
12AF	14-3/8 x 9-7/8	L	AR
13AF	9-7/8 x 21-7/8	S	AR
13AF	9-7/8 x 21-7/8	L	AR
14AF	15-3/8 x 24-3/8	S	AR
14AF	15-3/8 x 24-3/8	L	AR
15AF	19-3/8 x 19-3/8	X	AR
16AF	19-3/8 x 29-3/8	S	AR
16AF	19-3/8 x 29-3/8	L	AR
Com20x25	19-3/8 x 24-3/8	S	AR
Com20x25	19-3/8 x 24-3/8	L	AR

* As Required

2.2.4 Type IV filter sleeves. Type IV filter sleeves shall be open at one end so that an internal frame, of length and width dimensions as shown in Table II, can be inserted into the sleeve. The filter frame and sleeve shall fit into the standard Navy filter housings and other common filter housings found on Navy ships. Type IV filter sleeves shall be sized in accordance with Table IV.

TABLE IV. Type IV filter sleeves.

Standard Navy Filter Size Designation	Type IV Filters (Sleeves) Min Opening if on Short Side (inch)	Type IV Filters (Sleeves) Min Opening if on Long Side (inch)
10AF	7-¼	7-¼
11AF	8	12-½
12AF	10	14-½
13AF	10	22
14AF	15-½	24-½
15AF	19-½	19-½
16AF	19-½	29-½
Com20x25	19-½	24-½

2.2.5 Type V filter cubes. Type V filter cubes shall be extended surface filters of a basic bag shape and have an internal frame with exterior dimensions as shown in Table V. The filters shall be 15 inches deep and tapered in the direction of airflow.

TABLE V. Type V filter cubes.

Standard Navy Filter Size Designation	Type V Filters (Cubes) Internal Frame Size (inches) ± 1/16	Depth (inches)
10AF	N/A	N/A
11AF	12-1/2 x 8	15
12AF	14-1/2 x 10	15
13AF	10 x 22	15
14AF	15-5/8 x 24-5/8	15
15AF	19-5/8 x 19-5/8	15
16AF	19-5/8 x 29-5/8	15
Com20x25	19-5/8 x 24-5/8	15

3. SALIENT CHARACTERISTICS.

3.1 Description. The filters shall be used to remove dirt particles from the air in ventilation supply and air conditioning recirculation systems to protect HVAC equipment and to provide a clean environment. Air velocity will be up to a maximum of 900 feet per minute. The filter shall perform in accordance with requirements herein under ambient temperatures between -10 and +120 °F.

3.2 Construction requirements.

3.2.1 General requirements.

3.2.1.1 Filter material. The filter material shall be constructed of synthetic non-woven fibers. When a multiple ply or progressive density material is used, the fibers on the air inlet side shall be of heavier weight (more open) than the fibers on the air outlet (downstream) side.

3.2.1.2 Tackifiers. A non-migratory tackifier may be used throughout the material or on the air outlet side. Tackifiers shall not run at a temperature of less than 150 °F.

3.2.1.3 Marking. If the filter is unidirectional, the downstream side of the filter material shall be colored, tackified, or printed with the words “DOWNSTREAM”, “AIR LEAVING SIDE” or other information. The inlet side shall not be labeled.

3.2.2 Filter pads (type I).

3.2.2.1 Material thickness. The filter material shall be a minimum of 0.75 inch and a maximum of 2 inches thick.

3.2.3 Internal frames for filter panels (type II), filter panel links (type III) and filter cubes (type V).

3.2.3.1 Construction. The internal frame shall be constructed of galvanized or stainless steel, or other material satisfying the requirements of UL 900 Class 1.

3.2.3.2 Gauge. Where a metal internal frame is used, the frame shall be a minimum of 10 gauge.

3.2.3.3 Strength. The internal frame material shall be of sufficient strength to support the filter material in the design airflow.

3.2.4 Filter panel (type II).

3.2.4.1 Sealing. The filter material shall be sealed around the internal frame.

3.2.4.2 Material thickness. The filter shall be a minimum of 1 inch and a maximum of 2 inches thick.

3.2.4.3 Selvage edge. The filter material shall have a minimum of a 0.25- inch selvage edge from the frame seal to insure a positive seal around the periphery of the filter.

3.2.5 Filter links (type III).

3.2.5.1 Construction. The panels of the links shall be constructed per paragraph 3.2.4.

3.2.5.2 Material width. The width of the filter material between the linked internal frames shall be a minimum of one inch.

3.2.6 Filter sleeves (type IV).

3.2.6.1 Construction. The sleeve shall be constructed to fit snugly around the internal frame. The sleeve shall be open on one side with sufficient overlap provided to fold filter material around the frame on the open side.

3.2.6.2 Material thickness. The filter material shall be a minimum of 1 inch and a maximum of 2 inches thick.

3.2.6.3 Selvage edge. The sleeve shall have a minimum of a 0.25- inch selvage edge from all sealed sides to insure a positive seal around the periphery of the filter.

3.2.7 Filter cubes (type V).

3.2.7.1 Sealing. The filter material shall be sealed around the internal frame.

3.2.7.2 Material thickness. The filter material shall be a minimum of 1 inch and a maximum of 2 inches thick.

3.2.7.3 Construction. The filters shall be bag shaped, 15 inches deep and tapered 2 inches per linear foot in the direction of airflow.

3.3 Performance. The filter media shall be able to perform to the following minimum characteristics:

3.3.1 Fire properties. Filter pads, panels, links, sleeves, and cubes shall meet the requirements of Underwriters Laboratories (UL) 900 (Test Performance of Air Filter Units) Class 1. Class 1 designation states: “Those (filters) that, when clean, do not contribute fuel when attacked by flame and emit only negligible amounts of smoke.”

3.3.2 Filter pads.

3.3.2.1 Efficiency. The filters shall meet one of the following requirements:

a. The filters shall have a minimum Minimum Efficiency Rating Value (MERV) of 6 at a minimum air velocity of 374 feet per minute per ASHRAE 52.2-1999.

b. The filters shall have a minimum Average Synthetic Dust Weight Arrestance of 80% at 300 feet per minute per ASHRAE 52.1-1992.

3.3.2.2 Pressure. Pressure drop of a clean filter shall not exceed 0.15 inch of water at a velocity of 300 feet per minute per ASHRAE 52.1-1992 or ASHRAE 52.1-1999.

3.3.2.3 Dust holding. The minimum dust holding capacity shall be 150 grams (24-inch x 24-inch filter) or 37.5 grams per square foot at a pressure drop of 1.0 inch of water at a minimum velocity of 300 feet per minute per ASHRAE 52.1-1992.

3.3.2.4 Filter thickness. The filter shall be a minimum of 0.75 inch and a maximum of 2 inches thick.

3.3.3 Filter panels, links and sleeves - medium efficiency.

3.3.3.1 Efficiency. The filters shall meet one of the following requirements:

a. The filters shall have a Minimum Efficiency Rating Value (MERV) of 6 at a minimum air velocity of 374 feet per minute per ASHRAE 52.2-1999.

b. The filters shall have a minimum Average Synthetic Dust Weight Arrestance of 89% at 300 feet per minute per ASHRAE 52.1-1992.

3.3.3.2 Pressure. Pressure drop of clean filter shall not exceed 0.43 inch of water at a velocity of 500 feet per minute per ASHRAE 52.1-1992 or ASHRAE 52.1-1999.

3.3.3.3 Dust holding. The minimum dust holding capacity shall be 165 grams (24-inch x 24-inch filter) or 41.25 grams per square foot at a pressure drop of 1.0 inch of water at a minimum velocity of 300 feet per minute per ASHRAE 52.1-1992.

3.3.4. Filter panels, links and sleeves - high efficiency.

3.3.4.1 Efficiency. The filters shall have a MERV of 10 at a minimum air velocity of 374 feet per minute per ASHRAE 52.2-1999.

3.3.4.2 Pressure. Pressure drop of clean filter shall not exceed 0.48 inch of water at a velocity of 500 feet per minute per ASHRAE 52.1-1992 or ASHRAE 52.1-1999.

3.3.4.3 Dust holding. The minimum dust holding capacity shall be 165grams (24 inch x 24 inch filter) or 43.75 grams per square foot at a pressure drop of 1.0 inch of water at a minimum velocity of 300 feet per minute per ASHRAE 52.1-1992.

3.3.5 Filter cubes – medium efficiency performance. The filter material when tested in flat panels shall meet the requirements of 3.3.3.

3.3.6 Filter cubes – high efficiency performance. The filter material when tested in flat panels shall meet the requirements of 3.3.4.

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. 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.

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.

This example describes the part numbering system for CID A-A-59319.

AA59319	-	**X**	**X**	**X**	**X**	**X**
CID number		Type (see code below)	Size (see code below)	Efficiency (see code below)	Link data (see code below)	Link number (see code below)

PIN Code:

Type:	Code	Type
	1	I - Filter Pad
	2	II - Filter Panel
	3	III - Filter Panel Link
	4	IV - Filter Sleeve
	5	V - Filter Cube

Efficiency: (for Types II – V only)	Code	Efficiency
	0	Type I filters only – see 3.3.2
	1	Medium - see 3.3.3 and 3.3.5
	2	High - see 3.3.4 and 3.3.6

Size: (see Table I - V)	Code	Size
	A	10AF - 7-1/4 x 7-1/4
	B	11AF - 8 x 12-1/2
	C	12AF - 10 x 14-1/2
	D	13AF - 10 x 22
	E	14AF - 15-1/2 x 24-1/2
	F	15AF - 19-1/2 x 19-1/2
	G	16AF - 19-1/2 x 29-1/2
	H	Commercial - 20 x 25

Link:	Code	Link data
	N	NA
	S	Short
	L	Long
	X	Square

Link #:	Code	# of Links
	1	1
	2	2
	3	3
	4	4
	Use # of links required	

Example: AA59319-5C2S3

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

a. Title, number, and date of this CID.
b. CID PIN (see 7.1).
c. Packaging requirements (see 6).

7.3 Source of documents.

7.3.1 UL Standards are available from Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062 or http://www.ul.com/.

7.3.2 Military Standards are available from the Department of Defense Single Stocking Point for Specifications and Standards (DoDSSP), Standardization Document Order Desk, 700 Robbins Avenue, Bldg. 4D, Philadelphia, PA 19111-5094 or http://assist2.daps.dla.mil/quicksearch/ or www.dodssp.daps.mil.

7.3.3 ASHRAE Standards are available from American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 1791 Tullie Circle, N.E., Atlanta, GA 30329 or http://www.ashrae.org/.

7.4 Subject term (key word) listing.
Air conditioning
Disposable filter
Filter
Heating
HVAC
Ventilating system

MILITARY INTERESTS:

Custodians:
Army – CR4
Navy – SH

Review activities:
Navy – YD
DLA – IS
CIV – 7FLE

CIVIL AGENCY COORDINATING ACTIVITY:
GSA-FSS

Preparing activity:
Navy – SH
(Project 4130-0014)