GGG-M-125G/GEN
14 October 1985
SUPERSEDING
GGG-M-125F/GEN
September 20, 1982

FEDERAL SPECIFICATION

RESPIRATOR AND RESPIRATOR ASSEMBLIES: AIR LINE; NON-POWERED AIR-PURIFYING AND POWERED AIR-PURIFYING (GENERAL SPECIFICATION)

This specification is approved for use by the Naval Facilities Engineering Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers the general requirements for air-line, non-powered air-purifying, and powered air-purifying respirators, which provide respiratory protection against airborne contaminants that are not immediately dangerous to life or health and are not intended to be used for respiratory protection against toxic warfare agents. The specific requirements for particular respiratory protective systems and their types, styles, models, and sizes are covered by the applicable detailed specification (see 6.4).

1.2 Classification. Types, styles, models, and sizes of respirators shall be designated in the detailed specification for each respirator protective system.

1.2.1 Specification part number (SPN). Specification part number for items described in this general specification and the associated detail specifications will be formulated as shown in 6.2.2.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

Federal Specifications

L-P-378 - Plastic Sheet and Strip, Thin Gauge, Polyolefin
PPP-B-636 - Boxes, Shipping, Fiberboard

FSC 4240

Federal Standard

FED-STD-123 - Marking for Domestic Shipment (Civil Agencies)

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions as outlined under General Information in the Index of Federal Specifications, Standards, and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification and other Federal specifications and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specification documents, and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

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(Federal Government activities may obtain copies of Federal Specification documents, and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

Military Specification

MIL-P-116 - Preservation, Methods of

Military Standards

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-147 - Palletized Unit Loads
MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

(Copies of military specifications and standards required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

Federal Regulations

Code of Federal Regulations

Title 30 - Mineral Resources.

Part 11 - Respiratory Protective Devices, Tests for Permissibility; Fees.

"(The Code of Federal Regulations (CFR) and the Federal Register (FR) are for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. When indicated, reprints of certain regulations may be obtained from the Federal agency responsible for issuance thereof.)"

2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of the documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the colicitation.

American National Standards Institute, Inc. (ANSI)

Z89.1 - Requirements for Protective Headware for Industrial Workers.

(Application for copies should be addressed to the American National Standards Institute, Inc., 1430 Broadway, New York, NY 10018.)

American Society For Testing And Materials (ASTM)

ASTM D3951 - Standard Practice for Commercial Packaging

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

(Nongovernment standards and other publications are normally available from the organizations which prepare or which distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specifications sheets or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Detail specifications. The individual item requirements shall be as specified herein and in accordance with the applicable detail specifications.

3.2 Approval and certification. The various types, styles, models, and sizes respiratory protective systems with their respective cartridges and/or filters specified in the detailed specifications shall be approved and certified by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, and the Mine Safety and Health Administration (MSHA), Department of Labor, as provided under the applicable parts of 30 CFR, Part 11.

3.3 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification unless otherwise specified.

3.4 Sanitization. When subjected to the sanitation test specified in 4.5.1, reusable facepiece assemblies, hood assemblies, helmet assemblies, and reusable accessory items shall show no visible signs of deterioration.

3.5 Lenses. Lenses shall be glass, laminated glass and plastic, or plastic with smooth finished edges and corners. Lenses shall be free from inclusion, striae, waves, or other visible defects which may impair their optical quality. No visible distortion shall be exhibited when lenses are tested as specified in 4.5.2.1. When tested as specified in 4.5.2.2 lenses shall transmit not less than 85 percent of the incident visible light. After subjection to the impact test of 4.5.2.3, lenses of glass, laminated glass and plastic, or plastic shall not fracture or chip; lenses of laminated glass and plastic shall show no separation of the glass from the plastic inner layer.

3.6 Design. The design for the various respirator types, styles, models, sizes, and air cleaners shall be as specified in the detailed specifications (see 6.4).

3.7 Interchangeability. All respirator systems of the same classification furnished with similar options under a specific contract of the same manufacturer shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, and accessories so as not to void the NIOSH/MSHA certification as per 30 CFR, Part 11.

3.8 Instructions. Each respirator system furnished under this specification shall be provided with instructions covering the use, care and operation of the respirator protective system, and a list of the component parts.

3.9 Marking. A reproduction of the NIOSH/MSHA approval label including the approval number shall appear on each respirator assembly or the container for the assembly as required by NIOSH/MSHA. Part numbers shall appear on respirator components as required by NIOSH/MSHA. Facepieces, helmets, hoods, filters, and cartridges shall bear a distinctive marking by which the manufacturer may be readily identified. Reusable elastomeric facepieces shall be marked with the month or quarter and the year of manufacture.

3.10 Breathing tube leakage. When a breathing tube is specified in the detailed specification, the breathing tube shall not leak when subjected to the water immersion test specified in 4.5.3.

3.11 Helmet impact and penetration protection. When a helmet is specified in the detailed specification, the helmet shall meet the acceptance criteria specified in 4.5.4.

3.12 Workmanship. The quality of the workmanship shall be such as to produce respiratory assemblies that are in accordance with the requirements of this specification and the detail specification, and insure proper functioning of all parts of respirator assemblies.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Certification. The contractor shall submit to the contracting officer evidence of compliance with the applicable approval and certification specified in 3.1. Certification shall include a current NIOSH approval number for the item furnished.

4.3 Sampling for quality conformance inspection. Sampling and inspection procedures shall be in accordance with MIL-STD-105.

4.3.1 Unit of product. The unit of product shall be one respirator assembly.

4.3.2 Inspection lot. All respirators assemblies of the same type, style, model, and size offered for delivery at one time shall be considered a lot for the purpose of inspection.

4.3.3 Inspection of resubmitted lots. If an inspection lot is rejected, the disposition of the rejected lot (i.e., complete rejection, acceptance of nonconforming material, screening out defective units, reworking the lot to correct the defects, etc.) shall be in accordance with the contract or purchase order. If the rejected lot is resubmitted for acceptance as conforming material, the resubmitted lot shall be reinspected using tightened inspection procedures of MIL-STD-105. If the rejected lot was screened, reinspection shall be limited to the defect causing rejection. If the lot was reprocessed, reinspection shall be performed for all defects. Lots previously rejected shall be separate from new lots and shall be clearly identified as reinspected lots.

4.3.4. Sampling for examination. Sampling for examination shall be in accordance with MIL-STD-105. Examination shall be based on inspection level II and the Acceptable Quality Level (AQL) shall be 2.5 for major defects and 6.5 for minor defects.

4.3.5 Sampling for tests.

4.3.5.1 Sanitization test. When specified in the detail specification, one respirator shall be selected at random from the lot. Failure to pass the assembly sanitization test specified in 4.5.1 shall be cause for rejection of the entire lot.

4.3.5.2 Lens test. When specified in the detail specification, a random sample of respirators shall be selected in accordance with MIL-STD-105 at inspection level S-2. Failure of any lens to pass the tests of 4.5.2 shall be cause for rejection of the entire lot.

4.3.5.3 Leakage test. All breathing tubes shall be tested for leakage in accordance with 4.5.3.

4.3.5.4 Helmet impact test. When specified in the detail specification, two helmet respirators shall be selected at random from the lot and tested as specified in 4.5.4.

4.4 Examination. Respirator assemblies shall be examined for visual defects in accordance with detail specifications.

4.5 Tests. When specified in the detail specification, tests specified herein shall be performed.

4.5.1 Sanitization test. The reusable facepiece assembly, mouthpiece/nose clamp, helmet assembly, hood assembly, and breathing tube of the specimen respirator, selected in accordance with 4.3.5.1, shall be subjected to one of the following cleaning and sanitizing tests:

a. Immerse for 10 minutes in an aqueous detergent solution maintained at a temperature of 110 $\pm$ 5 degrees Fahrenheit (°F). Immerse for 2 minutes in an aqueous sanitizing solution maintained at ordinary room temperature. Some suitable solutions are: a hypochlorite solution containing 50 parts per million (ppm) chlorine, an iodine

solution containing 50 ppm iodine, or a quaternary ammonium compound solution. Rinse for 2 minutes in clean water maintained at ordinary room temperature. Dry at ordinary room temperature.

b. Immerse for 10 minutes in an aqueous solution of a cleaner-sanitizer, containing a combination of a cleaning agent and a sanitizing agent, maintained at a temperature of 110° ± 5°F. Rinse for 2 minutes in clean water maintained at ordinary room temperature. Dry at ordinary room temperature.

c. For 10 minutes, each exterior and interior surface shall be sprayed with an aqueous solution of a cleaner-sanitizer or wiped with a sponge wetted with an aqueous solution of a cleaner-sanitizer, containing a combination of a cleaning agent and a sanitizing agent, at ordinary room temperature. For 5 minutes, all mentioned surfaces shall be sprayed with clean water or wiped by a sponge wetted with clean water at ordinary room temperature. Dry all items at ordinary room temperature.

The sanitization test shall be repeated for a total of 10 cleaning and sanitizing cycles. Any signs of deterioration of an item shall be cause for rejection.

4.5.1.1 Inner shroud sanitizing test. The inner shroud of a reusable hood assembly shall be removed and laundered 10 times by conventional laundering techniques. Any signs of deterioration shall be cause for rejection.

4.5.2 Lens tests. Lenses taken from sample respirators, selected in accordance with 4.3.5.2, shall be tested for optical quality, visible transmission, and impact resistance by methods specified in 4.5.2.1 through 4.5.2.3.

4.5.2.1 Optical quality. The normal viewing center for each eye in the lens(es) for "straight ahead horizontal line of sight" shall be determined and a circle of 25.4 millimeters (mm) (1 inch) diameter with its center at the normal viewing center of the lens(es) shall be marked with a nondamaging marker on the lens(es) for each eye. A person wearing the respiratory-inlet covering containing the lens shall view a high contrast chart containing a grid pattern of vertical and horizontal lines which shall be 3 mm (1/8 inch) apart with the chart 300 mm (approximately 12 inches) from the lens(es). Any visible distortion of the grid pattern viewed within the marked circles on the lens(es) shall be cause for rejection.

4.5.2.2 Visible transmission. The standard source of radiant energy used in the measurement of the transmission of visible radiation (light) by a lens shall be a 500-watt (or other high-powered) gas-filled tungsten filament electric incandescent lamp, operated at rated voltage. The visible radiation shall be determined photometrically by an observer, having normal color visions, as determined by the Holmgren test for color visions, or with a physical photometer consisting of a thermopile (or other radiometer), and a luminosity solution having a spectral transmission curve which coincides with the visibility curve of the average eye. Transmittance of less than 85 percent of the incident visible radiation by the lens shall be cause for rejection.

4.5.2.3 Impact test. The lens shall be mounted in its normal seal including any lens clamping device normally used in the respirator. It shall be mounted on a suitable wooden block so that the outer surface of the lens faces upward. The block shall be shaped to support the lens seal and the lens clamping device but the block shall not support the lens. The whole assembly shall be on a flat horizontal surface. A 25.4-mm (1-inch) diameter steel ball weighing approximately 68 grams (2.4 ounces) shall be freely dropped from a height of 1.27 meters (50 inches) onto the center of the lens. Any cracking, fracturing, chipping, or dislodging of the lens from its seal shall be cause for rejection. Also any separation of glass from the inner plastic layer of a laminated glass and plastic lens shall be cause for rejection.

4.5.3 Leakage test. Each length of breathing tube and couplings shall be immersed in water and subjected to an internal air pressure of 5 pounds per square inch gage. No leakage shall occur while pressure is applied for a minimum of 10 seconds. Leakage of any breathing tube shall be cause for rejection of the lot.

4.5.4 Helmet impact and penetration tests. A specimen helmet of a respirator shall be tested for impact and another specimen helmet of another respirator shall be tested for penetration in accordance with provisions given in ANSI Z89.1. Failure of a helmet to pass either test shall be cause for rejection of the lot.

4.6 Preparation for delivery inspection. An examination shall be made to determine compliance with the requirements of section 5. The sample unit shall be one unit prepared for shipment. Sampling shall be in accordance with MIL-STD-105. The inspection level shall be S-2 with an AQL of 4.0 percent defective.

5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging. Preservation and packaging shall be level A or commercial as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Methods of preservation. Cleaning processes, drying procedures, preservatives, and methods of preservation are listed in MIL-P-116 and shall conform to the requirements of MIL-P-116 and any applicable specifications.

5.1.1.2 Cleaning and drying. Prior to the application of preservative compounds or paint, surfaces shall be cleaned by process C-1 and dried by any applicable procedure of MIL-P-116.

5.1.1.3 Unit package quantity. The unit package quantity (or unit pack quantity) shall be one unit of issue quantity specified in the contract or purchase order.

5.1.1.4 Respirators. Each unit package quantity of respirators shall be wrapped or bagged with material conforming to L-P-378 or a nondusting barrier.

5.1.1.5 Component parts. Component parts for each unit package quantity of respirators shall be preserved method III.

5.1.1.6 Unit protection. Each unit package quantity of respirators and associated component parts shall be preserved method III in a fiberboard box conforming to PPP-B-636, class weather-resistant.

5.1.2 Commercial. Material shall be packaged in accordance with ASTM D3951.

5.2 Packing. Packing shall be level A, B, or commercial as specified (see 6.2).

5.2.1 Levels A and B. Packing shall be accordance with MIL-STD-794. Containers shall be selected from table II for the appropriate level.

5.2.2 Commercial. Material shall be packed in accordance with ASTM D3951.

5.3 Palletization. Material shall be palletized in accordance with MIL-STD-147 when the following criteria is met:

a. Load to consist of four or more unskidded containers; and,
b. Load shall utilize a minimum of 80 percent of the pallet base.

5.4 Marking.

5.4.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.4.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

6. NOTES

6.1 Intended use. (See detailed specification).

6.2 Ordering data. (See detailed specification).

6.2.1 Components and extra filters and cartridges. Component parts are not interchangeable between manufacturers nor are they always interchangeable with different models produced by the same manufacturer. Sufficient extra filters and/or cartridges are furnished with the respirator so that the facepiece can be discarded when the filters or cartridges are consumed. In the event that additional filters or cartridges are required, the contracting officer should go back to the same supplier with the exact model, style, size, and number.

6.2.2 Specification part number. The SPN is a definitive part number which will be formulated to identify each item covered by this general specification and the associated detail specifications. The SPN will be formulated by selecting from the requirement options available in the detail specifications as follows:

Respirator Assembly.

Specification Part Number	GGG-M-125/	XX-	X	X	X	X
General specification number	____					
Detail specification number		_____				
Type code number (see table 1)			_____			
Style code letter (see table 1)				_____		
Model code number (see table 1)					_____	
Size code letter (see table 1)						_____

6.3 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL) and invokes the provisions of DoD Federal Acquisition Regulations (FAR) Supplement 27.410-6, the data requirements will be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved CDRL (DD Form 1423) incorporated into the contract. When the provisions of DoD FAR 27.410-6 are not invoked, the data shall be delivered in accordance with the contract requirements.

6.4 Detail specifications. The following detail specifications form a part of this document:

Detail specification	Title
GGG-M-125/1	Respirator Assemblies: Air Line, with Facepiece (Supplied Air).
GGG-M-125/2	Respirator Assemblies: Air Line, with Helmet, (Supplied Air).
GGG-M-125/3	Respirator Assemblies: Air Line, with Disposable Hood, (Supplied Air).
GGG-M-125/4	Respirator Assembly: Half Mask, Air-Purifying, Chemical Cartridge (For Organic Vapors).
GGG-M-125/5	Respirator Assembly: Half Mask, Air-Purifying, Particulate-Filter (For Dusts, Fumes and Mists).
GGG-M-125/6	Respirator Assembly: Half Mask, Air-Purifying, Combination Chemical Cartridge and Filter (For Paint Spray and Organic Vapors).
GGG-M-125/7	Respirator Assembly: Half Mask, Air-Purifying, Combination Chemical Cartridge and Filter (For Pesticides and Organic Vapors).
GGG-M-125/8	Respirator Assembly: Half Mask, Air-Purifying, Particulate-Filter (For Dusts and Mists).
GGG-M-125/9	Respirator Assemblies: Air Line, Hood and Helmet, (For Abrasive Blasting Operations).
GGG-M-125/10	Respirator Assembly: Helmet with Powered Air-Purifying Unit.

GGG-M-125/11	Respirator Assembly: Helmet with Powered Air-Purifying Unit (Portable Back-Pack).

6.5 Code of Federal Regulations. The 30 CFR Part 11, supersedes the following Bureau of Mines schedules and approval numbers allowed by the schedules:

19B	Procedure for Testing Supplier-Air Respirators for Permissibility.
21B	Procedure for Testing Filter-Type Dust, Fume and Mist Respirators for Permissibility.
23	Procedure for Testing Non-Emergency Gas Respirators (Chemical Cartridge Respirators) for Permissibility.

MILITARY INTERESTS:

Custodians

Army - EA
Navy - YD
Air Force - 99

Review Activities

Army - MD, ME
DLA - GS

User Activities

Navy - SH, CG, MC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS
TVA
DCG

PREPARING ACTIVITY:

Navy - YD

DoD project 4240-0518

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

TABLE I. SPECIFICATION PART NUMBER CODES FOR TYPE, STYLE, MODEL AND SIZE.

Detail Specification Designator 1/	Type Code Number	Style Code Letter	Model Code Number	Size Code Letter
Type I	1			
Type II	2			
Type III	3			
Style A		A		
Style B		B		
Style C		C		
Model 1			1	
Model 2			2	
Model 3			3	
Model 4			4	
Size 1				S
Size 2				M
Size 3				L

1/ See 1.2 of associated detail specification for cross reference of type, style, model and size designators to noun name.