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* INCH-POUND *

XX-C-2867
December 27,1994

SUPERSEDING
MIL-C-82033B
10 August 1989

FEDERAL SPECIFICATION

CLEANER, STEAM OR HOT WATER, PRESSURE JET TRAILER-MOUNTED, GASOLINE OR DIESEL ENGINE

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE

1.1 Scope. This specification covers trailer-mounted, gasoline or diesel engine drive, oil-fired, 180 gallons per hour (gph) or 680 liters per hour (lph), steam or hot water pressure cleaners equipped with nonsparking cleaning guns.

1.2 Classification. Cleaners will be of the following types, styles, and classes as specified (see 6.2):

Type I - Steam cleaner.
Type II - Hot water cleaner.
Type III - Combination cleaner.

Style 1 - Two-wheel, vehicular-towed.
Style 2 - Four-wheel, vehicular-towed.

Class A - Gasoline engine drive
Class B - Diesel engine drive

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Beneficial comments (recommendations, additions, deletions) and any pertinent
*data which may be of use in improving this document should be addressed to: *
*Commanding Officer (Code 156), Naval Construction Battalion Center, *
*1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization *
*Document Improvement Proposal (DD Form 1426) appearing at the end of this *
*document or by letter. *
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AMSC N/A FSC 4940

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified (see 6.2), the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

Federal Specification

P-C-437 - Cleaning Compound, High Pressure (Steam) Cleaner

Federal Standard

FED-STD-595 - Colors Used in Government Procurement

Military Specification

MIL-V-173 - Varnish, Moisture and Fungus Resistant (for Treatment of Communications, Electronics, and Associated Equipment)

Military Standard

MIL-STD-209 - Slinging and Tiedown Provisions for Lifting and Tying Down Military Equipment

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.1.2 Other Government document. The following other Government document form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

Occupational Safety and Health Administration (OSHA):

OSHA 29 CFR 1910.95 - Occupational Noise Exposure

(Application for copies should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.)

(Copies of specifications, standards, handbooks, drawings, publications, and other Government documents required by contractors in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting activity.)

2.2 Other publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

ASTM:

ASTM A 106 - Seamless Carbon Steel Pipe for High-Temperature Service
ASTM D 396 - Fuel Oils
ASTM D 975 - Diesel Fuel Oils
ASTM D 1655 - Aviation Turbine Fuels
ASTM D 3699 - Kerosine
ASTM D 3951 - Commercial Packaging

(Application for copies should be addressed to ASTM, 1916 Race Street, Philadelphia, PA 19103.)

National Fire Protection Association (NFPA):

NFPA 70 - National Electrical Code

(Application for copies should be addressed to the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.)

Society of Automotive Engineers, Inc. (SAE):

SAE J534 - Lubrication Fittings

(Application for copies should be addressed to the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.)

Underwriters Laboratories Inc. (UL):

UL 1776 - High-Pressure Cleaning Machines

(Application for copies should be addressed to the Underwriters Laboratories Inc., 333 Pfingsten Road, Northbrook, IL 60062-2096.)

(Non-Government standards and other publications are normally available from the organizations that prepare or 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, specification sheets or MS standards), the text of this specification takes precedence. Nothing in this specification, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Description. The cleaners shall consist essentially of vehicle towed mounting, gasoline or diesel engine, combustion chamber, heating coil, pressure atomizing burner, blower, fuel and water tanks, pumps, cleaning gun, and operational and safety controls.

3.2 First article. When specified in the contract or purchase order (see 6.2), a sample shall be subjected to first article inspection (see 4.2.1 and 6.4).

3.3 Standard commercial product. The cleaner shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification but which are a part of the manufacturer's standard commercial product, shall be included in the cleaner being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale on the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.4 Interchangeability. All units of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to insure interchangeability of component parts, assemblies, accessories, and spare parts.

3.5 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. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this specification.

3.6 Performance. Each type cleaner shall be capable of continuous delivery of steam or hot water, as applicable, at no less than the rated capacity of 180 gph (680 lph), at the rated pressure and temperature as specified herein. The cleaner shall be able to reach its normal operating condition within 5 minutes of starting, with 60 degrees Fahrenheit (oF) or 16 degrees Celsius (oC) water supply to the coil. The thermal efficiency, based on the relation of cleaner output to fuel input shall be not less than 75 percent when the cleaner is operated at its rated capacity. The burner shall be capable of automatic operation by remote control from the nozzle shutoff valve on the cleaner gun.

3.6.1 Steam cleaner. The steam cleaner (type I) shall deliver the rated capacity at 100 pound-force per square inch gage (psig) or 690 kilopascals (kPa) and 325oF (163oC).

3.6.2 Hot water cleaner. The hot water cleaner (type II) shall deliver the rated capacity at 650 psig (4480 kPa) and 180oF (82oC).

3.6.3 Combination cleaner. The combination cleaner (type III) shall upon demand, operate as a steam cleaner or as a hot water cleaner. When switched to steam cleaner, the unit shall meet the performance requirements of 3.6.1, and when switched to hot water cleaner shall meet the performance requirements of 3.6.2.

3.7 Design and construction. The unit shall be designed in accordance with UL 1776 (as applicable) and the requirements as specified herein. The installation and location of components shall be such as to permit normal

servicing and maintenance of the cleaner. The cleaner shall be constructed in a manner to permit operation under adverse weather conditions. Individual components, including electrical controls and transformers, shall either be weatherproof or protected by weatherproof enclosures. When specified, (see 6.2), a housing that fully encloses the sides, top, and ends of the cleaner shall be furnished. When the housing is specified, doors or removable panels shall provide access to all interior components of the cleaner.

3.8 Engine drive. The gasoline or diesel engine drive shall be air-cooled, electric start from furnished 12-volt battery. The gasoline engine shall be a standard 4-cycle. The engine shall be furnished complete with all accessories normally supplied as standard equipment, including a governor, air cleaner, and muffler.

3.9 Heating coil. The heating coil shall be a continuous coiled seamless steel pipe conforming to ASTM A 106, grade A. After fabrication, the complete heating coil shall be capable of withstanding a hydrostatic test pressure of not less than 1,000 psig (6895 kPa). The heating coil assembly shall be designed and installed in a manner to permit its removal and replacement.

3.10 Combustion chamber. The combustion chamber shall be enclosed in an insulated sheet-metal jacket or casing. The products of combustion shall discharge from the top of the cleaner.

3.11 Burner. The burner shall be of the pressure-atomizing type with automatic electronic ignition (using the furnished 12-volt battery as the power source) and shall be capable of firing any of the following fuels:

a. Fuel oil conforming to ASTM D 396, grade 1 or 2.
b. Diesel oil conforming to ASTM D 975, grade 1-D or 2-D.
c. Kerosene conforming to ASTM D 3699, grade 1-K.
d. Aviation turbine fuel conforming to ASTM D 1655, type Jet A or Jet A-1.

3.12 System requirements.

3.12.1 Water circulating system. The water circulating system shall include a water reservoir tank with a float-controlled inlet valve, a positive displacement water pump, a blowdown valve, and a pump pressure relief device. The float-controlled water inlet valve shall be capable of operating within a range of supply pressures up to 125 psig (862 kPa). A manually operated shutoff valve with a 0.75-inch or 19-millimeter (mm) hose adapter shall be installed at the inlet side of the float valve.

3.12.2 Fuel system. The burner fuel system shall include a fuel tank, filter, fuel pump, manual control valve, solenoid shutoff valve, and fuel flow controls. The fuel tank shall have sufficient capacity for not less than 4 hours continuous operation of the cleaner.

3.12.3 Electrical system. Wiring shall conform to and be installed in accordance with applicable requirements of NFPA 70. Wire shall be moisture, heat, and oil-resistant. Control boxes and panels shall be furnished with drip-proof enclosures or shall otherwise be protected against moisture and weather.

3.12.4 Cleaning solution system. The cleaning solution system shall be suitable for handling mixed solution of cleaning compound conforming to P-C-437. The system shall include a compound mixing tank and a means for injecting cleaning solution into the pump suction or at the coil outlet. A device shall be provided for metering the feed rate of the cleaning solution. The metering device shall be adjustable and shall have a range of zero to no less than 12 gph (45 lph) of prepared solution. The tank for mixing and storing the solution shall have a capacity of not less than 15 gallons (57 liters). Means of agitating the solution inside the tank shall be provided.

3.13 Controls. The cleaner shall be equipped with all mechanical and electrical controls and devices necessary for safe and efficient operation, including but not limited to the following:

a. Temperature control to shut down the burner in the event the temperature of the heating coil exceeds a predetermined safe limit due to partial or total interruption of the water supply to the coil.

b. An automatic and manual fuel shutdown device to prevent flow of fuel to the burner in the event of ignition interruption or insufficient fuel pressure to insure proper atomization.

c. A control to automatically maintain the operating pressure in the heating coil to within +/- 10 percent of the specified operating pressure under varying rates of discharge from the cleaning gun.

d. A safety-relief valve that shall relieve the pressure in excess of the predetermined safe limit.

3.14 Components and accessories.

3.14.1 Gages. The following gages shall be provided and mounted in readily visible locations:

a. Heating coil inlet pressure gage.
b. Heating coil outlet pressure gage.
c. Burner fuel pressure gage.

Each gage shall have a scale range such that the normal operating pressure will register within 35 to 65 percent of the full-scale reading. Pulsation dampeners shall be included in the pump discharge gage connection.

3.14.2 Drain valves. Means shall be provided for complete draining of all liquid from the cleaner. The drain connections shall be readily accessible for manual operation of the drain valves. Drain outlets shall be so located that drainage does not impinge on other components of the cleaner.

3.14.3 Cleaning gun assembly. All metal parts of the cleaning gun, from the delivery hose to the end of the cleaning gun, including the nozzle, shall be fabricated of nonferrous, non-sparking materials of copper or aluminum alloy. A certificate of compliance (see 6.3) shall be provided as evidence that

non-sparking materials have been provided. Handles and heat guards may be fabricated of suitable plastic or other nonmetallic materials. The cleaner shall be equipped with a hanger, rack, or other appurtenance of stowing the gun and hose when in transit. The cleaning gun assembly shall be furnished with the following:

a. 1 - round nozzle.
b. 1 - 2-inch (51-mm) flat nozzle.
c. 1 - 4-inch (102-mm) flat nozzle.
d. 2 - 50-foot (15-meter (m)) lengths of 0.5-inch (12.7-mm) inside diameter high-pressure hose.

3.14.4 Hose. One 50-foot (15-m) length of 0.75-inch (19-mm) water supply hose shall be furnished with each cleaner. The ends shall terminate in standard hose connections, one female and the other suitable for connection to the water inlet valve hose adapter. The hose shall be yarn-reinforced, natural or synthetic rubber. The high-pressure hose shall be wire braided, suitable for the pressure and temperature for the specified type of cleaner, and with a burst strength of not less than 2250 psig (15 510 kPa).

3.14.5 Grounding strap. A grounding strap capable of preventing the accumulation of static charges shall be provided on the rear of the cleaner. The strap shall be copper and of sufficient length to insure positive contact with the ground.

3.14.6 Fire extinguisher. When specified (see 6.2), a fire extinguisher shall be furnished and mounted in a convenient location on the exterior of the cleaner. The extinguisher shall be of the dry chemical type, suitable for electrical or flammable liquid fires, and shall have a capacity of not less than 2.5 pounds (1.1 kilograms).

3.15 Mounting. The cleaner shall be mounted on a trailer-type undercarriage of the style specified herein. The tires shall be pneumatic, not less than four-ply rating, and in accordance with the standard commercial automotive type tires. The wheels shall be removable and rotate on antifriction ball or roller bearings. The trailer frame shall be supported on leaf springs designed for the intended application. The tow bar shall be equipped with a lunette eye and safety chain. The lunette eye shall be fabricated from 1-inch (25.4-mm) round stock with an inside diameter of 3 inches +/- 0.0625 inch (76.2 mm +/- 1.6 mm). The safety chain shall be anchored to the draw bar and will terminate in a safety hook or pin-type clevis. Reflectors shall be mounted on the rear corners of the unit. The unit shall be strong, durable, and capable of withstanding the conditions of being towed at speeds up to 15 miles per hour (mph) or 24 kilometers per hour (km/h) over improved and unimproved roads (see 4.4.4 and 6.5).

3.15.1 Style 1. The style 1 mountings shall have two wheels in a single axle. The trailer shall be equipped with a retractable and adjustable landing leg with caster. The landing leg shall be designed to support the trailer in a level position when uncoupled from the towing vehicle. A positive means shall be provided to secure the leg in the retracted position.

3.15.2 Style 2. Style 2 mountings shall have four wheels and two tandem axles.

3.16 Lubrication. Unless otherwise specified (see 6.2), means for lubrication shall be in accordance with the manufacturer's standard practice. The lubricating points shall be easily visible and accessible. Hydraulic lubrication fittings shall be in accordance with SAE J534. Where use of high-pressure lubricating equipment, 1,000 psig (6895 kPa) or higher, will damage grease seals or other parts, a suitable warning shall be affixed to the equipment in a conspicuous location.

3.17 Noise level. The cleaner's noise level (dBA) shall not exceed the value for an 8-hour exposure as defined in OSHA 29 CFR 1910.95.

3.18 Lifting and tiedown attachments. The cleaner shall be equipped with lifting and tiedown attachments. Lifting and tiedown attachments shall conform to type II or type III of MIL-STD-209. A nonferrous transportation plate shall be provided and mechanically attached to the cleaner. Transportation plates shall be inscribed with a diagram showing the lifting attachments and lifting slings, the capacity of each attachment, and the required length and size of each sling cable. A silhouette of the item furnished showing the center of gravity shall be provided on the transportation plate. Tiedown attachments may be identified by stenciling or other suitable marking. Tiedown marking shall clearly indicate that the attachments are intended for the tiedown of the cleaner on the carrier when shipped.

3.19 Cleaning, treatment, and painting. Surfaces normally painted in good commercial practice shall be cleaned, treated, and painted as specified herein. The color of the finish coat, conforming to FED-STD-595, shall be as specified (see 6.2). Surfaces to be painted shall be cleaned and dried to insure that they are free from contaminants such as soil, grease, welding slag and spatter, loose mill scale, water, dirt, corrosion product, or any other contaminating substances. As soon as practicable after cleaning, and before any corrosion product or other contamination can result, the surfaces shall be prepared or treated to insure the adhesion of the coating system. The painting shall consist of at least one coat of primer and one finish coat of acrylic-based enamel. The primer shall be applied to a clean, dry surface as soon as practicable after cleaning and treating. Painting shall be with manufacturer's current materials according to manufacturer's current processes and the total dry film thickness shall be not less than 2.5 mils (0.0635 mm) over the entire surface. The paint shall be free from runs, sags, orange peel, or other defects. The end item, allied equipment, and attachments shall be the same color.

3.20 Fungus resistance. When specified (see 6.2), electrical components and circuit elements, including terminal and circuit connections, shall be coated with varnish conforming to MIL-V-173, except that:

a. Components and elements inherently inert to fungi or in hermetically sealed enclosures need not be coated.
b. Current-carrying contact surfaces, such as relay contact points, shall not be coated.

3.21 Servicing and restoration. Each unit tested shall be serviced and restored to a condition equal to the original condition of the unit, excluding nominal wear incurred during the tests. The restoration shall include paint touchup or repainting, as required for delivery.

3.22 Special marking. The following notation shall be stenciled in a conspicuous location on the cleaner: USE KEROSENE, DIESEL OIL, LIGHT FUEL OIL, OR JP-5 FOR BURNER.

3.23 Identification plate. An identification plate will be furnished by the contracting officer for each cleaner. The contractor shall stamp all necessary data in the blank spaces of the plate provided for that purpose, and securely affix a plate to each cleaner in a conspicuous place with nonferrous screws, rivets, or bolts not less than 1/8-inch (3 mm) in diameter. The applicable nomenclature contained in the contract item description shall be placed in the top blank.

3.24 Workmanship.

3.24.1 Steel fabrication. The steel used in fabrication shall be free from kinks, sharp bends, and other conditions which would be deleterious to the finished product. Manufacturing processes shall not reduce the strength of the steel to a value less than intended by the design. Manufacturing processes shall be done neatly and accurately. All bends shall be made by controlled means to insure uniformity of size and shape.

3.24.2 Bolted connections. Boltholes shall be accurately punched or drilled and shall have the burrs removed. Washers or lockwashers shall be provided in accordance with good commercial practice, and all bolts, nuts, and screws shall be tight.

3.24.3 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be of sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.24.4 Castings. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the casting's ability to perform its intended function.

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 (examinations and tests) 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 ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not

relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 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 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2.1).
b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on one cleaner when a first article is required (see 3.2 and 6.4). This inspection shall include the examination of 4.3, and the tests of 4.4 and 4.5. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the tests of 4.5, and the packaging inspection of 4.6. This inspection shall be performed on each cleaner.

4.3 Examination. Each cleaner shall be examined for compliance with the requirements specified in section 3 of this specification. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 First article tests. Failure of the cleaner to pass any of the following tests shall constitute cause for rejection.

4.4.1 Performance test. This test shall be conducted using any of the fuels specified in 3.11. The duration of the test shall be not less than 4 hours. Combination cleaners (type III) shall be tested for not less than 2 hours on each operating mode. The following data shall be recorded at the end of the first 5 minutes of operation and at 30-minute intervals thereafter during the test:

a. Date.
b. Time.
c. Ambient temperature.

d. Type of fuel and British thermal unit heat content per pound (joule per kilogram).
e. Temperature of incoming water supply.
f. Weight of water supplied to the cleaner.
g. Temperature at heater outlet.
h. Pressure at heater outlet.
i. Weight of fuel burned.
j. Calculated thermal efficiency.
k. Calculated rate of discharge in gph (lph).

The solution feed system shall be checked during the test for compliance with 3.12.4. Failure to meet the requirements at any test time intervals shall constitute failure of this test.

4.4.2 Endurance test. When specified (see 6.2), the first article shall be subjected to an endurance test of not less than 8 hours. The test shall be conducted with the cleaner operating at the maximum rated pressure and flow rate. Combination cleaners shall be tested for no less than 4 hours on each operating mode. Failure of the cleaner to operate or the need for major repairs or replacement of parts shall constitute failure of this test.

4.4.3 Safety control tests. After the test of 4.4.1, the first article sample shall be tested to verify compliance with 3.13. The conditions which activate the safety controls shall be simulated by interruption of water and fuel flows, as applicable, and for the pressure control test, by throttling the discharge.

4.4.4 Road test. Nozzles, hoses, and any other accessories shall be stowed and the cleaner shall be coupled to a suitable towing vehicle. The cleaner shall be towed at a distance of not less than 10 miles (16 km) over improved and unimproved roads (see 6.5), 5 miles (8 km) over each or a combination of each, at speeds up to and including 15 mph (24 km/h). The unit shall satisfactorily meet the requirements of 3.15.

4.4.5 Lifting and tiedown attachment test. Attach the necessary lifting cables into the lifting attachments and raise the unit from the ground for at least 10 minutes. There shall be no evidence of structural damage to the unit.

4.5 Quality conformance tests. Failure to pass any of the following tests shall constitute cause for rejection.

4.5.1 Functional test. Each cleaner shall be operated not less than 1 hour on a steam cleaning cycle and 1 hour on a high-pressure/hot water cycle, as applicable, to verify the functional adequacy of operational components and controls. Any cleaner requiring frequent adjustment or which suffers flame or ignition failure or fails to maintain the specified operational pressure, shall constitute failure of this test.

4.5.2 Hydrostatic test. Each heating coil, after assembly and prior to installation, shall be hydrostatically tested at a pressure of not less than 1,000 psig (6895 kPa) for a period of not less than 1 minute. The coil shall not exhibit leakage or rupture.

4.6 Preparation for delivery inspection. The inspection of the preservation, packing, and marking shall be in accordance with the requirements of section 5.

5. PREPARATION FOR DELIVERY

5.1 Preservation, packing and marking. Preservation, packing and marking shall be in accordance with ASTM D 3951 or as specified (see 6.2).

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The cleaners covered by this specification are intended for bomb and mine disposal operations and cleaning of construction equipment.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification.
b. Type, style, and class as specified (see 1.2).
c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
d. When first article is required for inspection and approval (see 3.2).
e. When a fully enclosed sheet-metal housing is required (see 3.7).
f. When a fire extinguisher is required (see 3.14.6).
g. When lubrication is to be other than as specified (see 3.16).
h. Required finish coat color (see 3.19).
i. When treatment for fungus resistance is required (see 3.20).
j. When an endurance test shall be performed on the first article (see 4.4.2).
k. Level of preservation and level of packing required, if other than in accordance with ASTM D 3951 (see 5.1).

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements identified below shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the Contract Data Requirements List (DD Form 1423) incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 227.405-70 are invoked and the DD Form 1423 is not used, the data specified below should be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs:

Paragraph No.	Data requirement title	Applicable DID No.
3.15.3	Certificate of compliance	DI-E-2121

(DIDs related to this specification, and identified in section 6 will be approved and listed as such in DOD 5010.12-L, Acquisition Management Systems and Data Requirements Control List. Copies of DIDs required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.4 First article. When a first article inspection is required, the item will be tested and should be a first production item or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.5 Definitions.

6.5.1 Improved road. An improved road is a smooth, hard surfaced road, such as a concrete or asphalt paved highway.

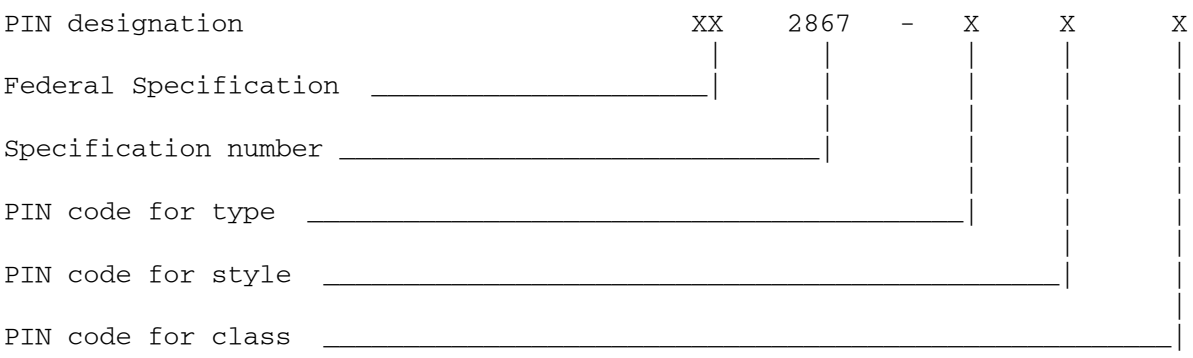
6.5.2 Unimproved road. An unimproved road is an unpaved, unstabilized road with an undulating surface having occasional chuckholes and exposed rocks.

6.6 Supersession data. This specification replaces military specification MIL-C-82033B dated 10 August 1989.

6.7 Classification cross reference. Cross reference of classification changes between this specification (see 1.2) and the superseded military specification, MIL-X-82033B, is as follows:

MIL-X-82033B	XX-C-2867
Type I	Type I
Type II	Type II
Type III	Type III
Style 1	Style 1
Style 2	Style 2
Not Applicable	Class A
Not Applicable	Class B

6.8 Part or identifying number (PIN). The PIN to be used for cleaners acquired to this specification are created as follows:



6.8.1 Cataloging data. For cataloging data purposes, code numbers are assigned to type, style, and class.

Classification	PIN Code
Type I	A
Type II	B
Type III	C
Style 1	1
Style 2	2
Class A	A
Class B	B

6.9 Subject term (key word) listing.

Combination cleaner
Non-sparking gun
Oil-fired
Vehicular-towed

MILITARY INTERESTS:

Custodian

Navy - YD1

Review Activity

DLA- CS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS

PREPARING ACTIVITY:

Navy - YD1

(Project 4940-0445)