Specification 5100-275b
August 1997
Superseding
Specification 5100-275a
May 1982

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

SPECIFICATION FOR

PUMP, PORTABLE, FLOATING

1. SCOPE.

1.1. Scope. The floating portable pump described in this specification is designed for use in direct attack, relay pumping and mop-up in wildland firefighting operations. The unit is self-contained consisting of a gasoline engine-driven pump with accessories. The pump is self-priming and floats on the surface of the water while in operation. The floating pump is lightweight and designed to be carried by one person. The thread series designation for the pump outlet shall be 1 inch 11-1/2 NPSH or 1-1/2 inch 9 NH.

2. APPLICABLE DOCUMENTS.

2.1. Government Documents. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issue of these documents are those in effect on the date of the invitation for bids or request for proposals (see 6.2).

USDA Forest Service Standards

5100-01 - Spark Arresters for Internal Combustion Engines

5100-190 - Threads, Gaskets, Rocker Lugs, Connections and Fittings, Fire Hose

U. S. Department of Labor

Federal Register Volume 37, Number 202, Part II - Occupational Safety and Health Administration, Safety and Health Regulations for Construction.

Copies of federal standards and test methods are available from General Services Administration, Federal Supply Service Bureau, Specification Section, Suite 200, 470 East L'Enfant Plaza SW, Washington DC 20407.

Beneficial comments, recommendations, additions, deletions and any pertinent data that may be used in improving this document should be addressed to: USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198 by using the Specification Comment Sheet at the end of this document or by letter.

Copies of USDA Forest Service Specifications and Standards are available from USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

2.2. Non-Government Publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those in effect on the date of the invitation for bids or request for proposals.

Society of Automotive Engineers (SAE)

J 1349 - Engine Power Test Code, Spark Ignition and Compression Ignition - Net Power Rating

Address requests for copies to the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096.

American National Standards Institute (ANSI) / American Society for Quality Control (ASQC)

S 1.4 - General Purpose Sound Level Meters

Z 1.4 - Sampling Procedures and Tables for Inspection by Attributes

Address requests for copies to the American National Standards Institute Inc., 11 West 42nd Street, New York, NY 10036.

American Society for Testing and Materials (ASTM)

E 380 - Practice for Use of the International System of Units

Address requests for copies to American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

2.3. Order of Precedence. In the event of conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS.

3.1. Qualified Products List Number. The bidder shall possess a currently valid notice of qualification with associated Qualified Products List (QPL) number obtained in accordance with 4.1. The date of issue on the QPL number shall precede the date on the invitation for bids.

3.2. Construction. The term pump or pump unit, when used hereafter, shall refer to a pump head and engine combination.

3.2.1. Buoyancy Unit. The pump unit shall be equipped with a floating collar or attachment designed to hold the engine above the water surface. The collar or attachment shall be designed so as to give the engine adequate protection from turbulent and splashing water. The entire unit shall be able to maintain buoyancy even after the outer surface of the collar or attachment has been damaged. The pump design shall provide enough clearance between the engine and floating section to avoid damage to the floating section from the heat produced by the engine.

3.2.2. Engine. The engine shall be gasoline-powered, air-cooled, with a magneto-type ignition system. Spark plugs shall be provided with protective caps. A 4-stroke cycle engine shall be capable of burning any commercial grade gasoline, and of operating with standard lubricating oils as recommended by the engine manufacturer. A 2-stroke cycle engine shall be capable of burning a mixture of any commercial grade gasoline, with an oil that is normally used in 2-stroke engines. The pump unit shall be designed to prevent leakage of oil and fuel during transportation on backpacks. The ignition system shall be moisture-proof.

3.2.2.1. Engine Controls. Suitable controls for engine throttle, choke, ignition, and starting shall be provided. A throttle control system shall be included. This throttle control system shall automatically maintain engine speed for normal pumping needs while the pump unit is in the water, and shall automatically reduce engine speed to idle when the water supply is exhausted or when the pump unit is removed from the water.

3.2.2.2. Spark Arrester Exhaust System. The engine shall be supplied with a spark arrester exhaust system. The spark arrester shall be qualified in accordance with USDA Forest Service Standard 5100-01.

3.2.2.3. Fuel System. A fuel tank with a minimum 1.0 gallon (3.8 liter) capacity shall be furnished. A flexible gasoline-oil and ozone resistant fuel line shall be provided. A fuel tank cap shall be able to vent air into the tank or a separate vent shall be provided. The vent shall have closing features to allow transportation by backpack without the leakage of fuel. The cap shall be adequately secured to the fuel tank with minimum No. 12 single jacket chain or other type chain of equal strength and flexibility. The cap shall be located in an easily accessible area with the filler neck positioned away from the exhaust system.

3.2.2.4. Carburetor. The carburetor shall be equipped with an external control for adjusting the fuel to air ratio. The air intake side of the carburetor shall be equipped with an air filter and a suitable rain cap.

3.2.2.5. Starter System. A mechanical rewind starter or a manual rope starter shall be furnished. A suitable guard shall be provided around any exposed drive belts or chains. The electrical system shall be moisture and weather proofed.

3.2.2.6. Engine Lubrication. A system of lubrication shall be provided and be sufficient to properly lubricate the engine for a minimum eight hours continuous operation. The engine oil fill pipe shall be readily accessible and easily serviced.

3.2.3. Pump Head. The pump shall be a centrifugal type with components indicated below.

3.2.3.1. Pump Connections. The pump shall have an inlet at the bottom of the pump so that the suction is located below the water surface when the pump unit is floating in the water. The pump outlet thread series designation shall be 1 inch 11-1/2 NPSH or 1-1/2 inch 9 NH conforming to requirements of USDA Forest Service Standard 5100-190.

3.2.3.2. Pump Suction Screen. A screen shall be installed at the suction side of the pump. It shall be made of a durable material and be corrosion resistant in an air-water atmosphere. Each hole in the screen shall not be greater than 0.25 inch (6.35 mm) in diameter or equal area, and the total amount of area openings shall be 125 percent or greater than the pump inlet which shall be sufficient enough to allow free unrestricted flow through the pump.

3.2.3.3. Pump Lubrication. A system of lubrication shall be provided and be sufficient to properly lubricate the pump for a minimum eight hours of continuous operation.

3.2.3.4. Carrying Handles. Carrying handles shall be provided for the possibility of transporting by one person. It shall be an integral part of the frame or floating collar.

3.2.3.5. Accessories. If special tools such as a packing gland wrench and grease gun are required, they shall be supplied with the pump unit. A starter rope or crank shall be furnished with the pump unit as applicable. A metric tool kit shall be supplied by the manufacturer if metric fasteners are used.

3.2.3.6. Operating and Maintenance Manual and Parts List. One set of operating and maintenance manuals and one parts list shall be supplied with the pump unit.

3.3. Material. Where more than one type of material is used in various components, there shall be no incompatibility between materials which may cause corrosion. All pump materials including fittings and adapters shall be of a material appropriate for an air-water atmosphere.

3.3.1. Paint. Exposed surfaces of the pump unit (except such surfaces as heated exhaust parts, plastic, glass, rubber, chrome, brass, etc., that should not be painted) shall be thoroughly cleaned of grease and other foreign material with a high quality surface preparation reducer. Bare metal parts shall be coated with a minimum two coats of high quality primer. Exposed galvanized surfaces shall be thoroughly washed with a surface etching solution then primed with a suitable galvanizing primer. Finish coating shall consist of two coats of top quality commercial gloss enamel. Painting shall be accomplished by spraying wherever practical. There shall be no runs, inadequate coverage, peeling, flaking, bubbling or other defects causing inferior coatings.

3.3.2. Recoverable Materials. The contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR), provided all performance requirements of this specification are met.

3.4. Dimensions and Weights.

3.4.1. Pump Unit. Prior to performance testing, the dry weight shall be measured. The pump unit shall be weighed as assembled with all component parts except fuel and water. The floating pump shall not weigh more than 60 pounds (27.2 kg).

3.4.2. Dimensional Tolerance. Unless otherwise noted, the following tolerances apply: one place (x.x) $\pm$ 0.1 inch (2.5 mm); two places (x.xx) $\pm$ 0.01 inch (0.25 mm) and three places (x.xxx) $\pm$ 0.010 inch (0.254 mm).

3.5. Workmanship. Workmanship shall be equal to the best commercial practices consistent with the highest engineering standards in the industry and shall be free from any defect which may impair serviceability or detract from the product’s appearance.

3.5.1. Symmetry. All metal part sections shall be symmetrical and concentric to 0.030 inch (0.762 mm).

3.5.2. Extruded Components. Extruded sections shall be free from laps, sharp die marks, cracks and other defects.

3.5.3. Cast Components. Cast parts shall be fine-grained, free from blowholes, pinholes, pits, porosity, hard spots, shrinkage, cracks or other defects.

3.5.4. Welding. All welds to include welds on the pump frame shall be thoroughly fused together with strength equal to or stronger than the adjacent material. All excess welds and splatters shall be cleaned.

3.5.5. Holes. Punched holes shall be used in lieu of drilled holes only when the punched holes are dimensionally equivalent to drilled holes. In addition, the material shall not become distorted from the punching process.

3.6. Threads, Waterways, Gaskets, Gasket Recesses and Rocker Lugs. All threads, waterways, gaskets, gasket recesses and rocker lugs shall be in accordance with USDA Forest Service Standard 5100-190.

3.7. Surface Treatment. Aluminum alloy threaded surfaces shall be hardcoated in accordance with USDA Forest Service Standard 5100-190.

3.8. Marking. A durable decal or corrosion resistant metal nameplate shall be permanently attached to the pump. The decal or nameplate markings shall include the manufacturer's name, model designation, serial number of the unit, and the letters "FSS". In addition, controls, such as on and off switches and choke, shall be clearly and permanently identified. Marking for the pump outlet threaded sections shall conform to requirements of USDA Forest Service Standard 5100-190.

3.9. Surface Finish. The finish for all threaded surfaces shall be in accordance with USDA Forest Service Standard 5100-190.

3.10. Performance.

3.10.1. Calibration of Equipment. In accordance with 4.7.2, all test equipment shall be calibrated.

3.10.2. Priming. When tested in accordance with 4.7.3, the pump priming system shall be capable of priming and pumping within 1.0 minute.

3.10.3. Drafting. When tested in accordance with 4.7.4, the pump shall be able to continue drafting at a minimum of 9 gpm (34.07 lpm) at 150 psig (1034 kPag) hydraulic pressure after establishing initial prime.

3.10.4. Pump Stability. When tested in accordance with 4.7.5, the pump shall not capsize or sink. This shall include the normal twisting of the hose of movement of the hose incidental to changing the direction of discharge from the nozzle.

3.10.5. Pump Performance Tests.

3.10.5.1. Pre-endurance Maximum Performance. When tested in accordance with 4.7.6.1, the pre-endurance maximum performance curve shall be plotted. Each of the points on this curve shall be corrected to standard sea level. Using these corrected points, a second curve shall be plotted. From this corrected curve, the maximum pump power, p_1f_1, shall be established.

3.10.5.2. 100-Hour Endurance Performance. When tested in accordance with 4.7.6.2, the pump performance rating, p_2f_2, shall be determined by establishing a curve at 85 percent of the corrected curve. The pump performance rating, p_2f_2, shall be the pressure and flow rate at which the 100-hour endurance test is run.

3.10.5.3. Post-endurance Maximum Performance. When tested in accordance with 4.7.6.3, the post-endurance performance curve obtained after subjecting the pump to the 100-hour endurance test, shall not be below the pre-endurance performance curve.

3.10.6. Sound Level. When tested in accordance with 4.7.7, the pump unit shall be tested the average maximum sound level shall not exceed 90 dBA at 13.0 foot (4m).

3.10.6.1. Hearing Safety Label. A warning label shall be permanently attached to the equipment and clearly visible to the operator. The label shall indicate that hearing protection is required when within 13 foot (4 m) of the equipment.

3.11. Metric Products. Metric dimensions are provided for information only, inch-pound units shall be the required units of measure for this specification. Thread series designations are indicated as 1 inch 11-1/2 NPSH and 1-1/2 inch 9 NH. Since these are thread series designations, not an indication of a specific dimension, the metric equivalent is not given. Products manufactured to metric dimensions will be considered on an equal basis with those manufactured using inch-pounds units, provided they fall within the tolerances specified using conversion tables contained in the latest revision of ASTM E380, and all other requirements of this standard are met.

4. SAMPLING, INSPECTION AND TEST PROCEDURES.

4.1. Qualification Testing.

4.1.1. Manufacturer Submission for Qualification Tests. The prospective contractor shall provide, without cost to the Government:

a. Five complete sets or one reproducible set of detailed dimensional drawings and specifications.

b. One sample pump unit with performance data and operating and maintenance instructions.

c. Certificates of Conformance (see 4.6).

d. The estimated test fee. Contact the Water Handling Project Leader at the USDA Forest Service, San Dimas Technology and Development Center (SDTDC), 444 East Bonita Avenue, San Dimas, CA 91773.

e. A signed collection agreement. Contact the SDTDC Water Handling Project Leader for a copy of the form.

f. All of the above items shall be delivered to SDTDC to the attention of the Water Handling Project Leader.

The Government shall not be responsible for the submitted test samples.

4.1.2. Qualification Test. Qualification inspection and tests shall be conducted by the Government and at the expense of the contractor at a fee to be determined by the Government. If requested by the contractor, the Government will inform the contractor of date and place of inspection and tests. The contractor may send a representative (who has been designated in writing) to be present and observe the inspection and tests, but they will not be permitted to be a participant. Upon completion of tests, the sample will be retained by the Government. The Government shall not be obligated to continue testing a defective item once it is known to be defective or when it is considered to be in the best interest of the Government.

4.1.2.1. Test Failure. Qualification testing shall stop on a single failure and the test sample rejected. If a component part fails during the test, it may be replaced by the manufacturer, but the sample must be run until the replacement part has completed 100 hours of operation. Replaced components failing twice will constitute disqualification of the pump. The contractor will be informed as to the nature of the failure.

4.1.3. Notice of Qualification. Notice of Qualification shall be issued to the contractor upon the successful completion of qualification tests. Copies of qualification notices shall be provided to the General Services Administration. A copy shall be retained in the SDTDC file.

4.1.4. Notice of Failure to Qualify. The contractor shall be notified by letter of a failure to qualify, if the submitted pump unit does not meet the requirements of this specification.

4.1.5. Re-qualification. After qualification, if any changes are made in the product or where it is manufactured, the contractor shall notify SDTDC immediately in writing. The need for re-qualification shall be determined by the Government when there are changes to the product or this specification.

4.2. General Inspection and Tests. Unless otherwise specified in the contract or purchase order, the contractor is responsible for performance of all inspection requirements prior to submission for Government acceptance inspection and tests. The contractor may utilize their own facilities or any commercial laboratory acceptable to the Government. Inspection records of the examination and tests shall be kept complete and available to the Government.

4.2.1. Inspection and Test Sites. The Government shall conduct lot acceptance inspection and tests to determine compliance with the specification. If lot acceptance and tests are conducted at locations other than the manufacturing facilities, the contracting officer will specify location and arrangements. In the case of on-site inspections at the contractor’s facility, the contractor shall furnish the inspector all reasonable facilities for their work. During any inspection, the inspector may take from the lot one or more samples and submit them to an independent test laboratory approved by the Government or to a Government test facility for inspection and tests.

4.2.2. Testing With Referenced Documents. The contractor is responsible for ensuring that components and materials used were manufactured, examined and tested in accordance with referenced specifications and standards. The Government reserves the right to perform any of the inspections or tests set forth in this section where such action is deemed necessary to assure supplies and services conform to prescribed requirements. All inspection or testing of a sample shall stop upon a single failure and the sample rejected. The contractor will be informed as to the nature of the failure. The Government shall not be obligated to continue testing a defective item once it is known to be defective or when it is considered to be in the best interest of the Government.

4.3. Responsibility for Compliance. All items shall meet all requirements of sections 3 and 4. 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 this 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.

4.4. Sampling for Inspection. When inspection is performed, sampling shall be in accordance with ANSI/ASQC Z 1.4.

4.4.1. Lot. All pump units of the same type, presented together in one delivery shall be considered a lot for the purpose of inspection. A sample unit shall be one pump unit.

4.4.2. Sampling for Visual and Dimensional Examination. Sampling for visual and dimensional examination shall be S-2, with an Acceptable Quality Level (AQL) of 1.0 percent defective.

4.4.3. Sampling for Lot Acceptance Tests. Sampling for lot acceptance testing shall be S-2 with an AQL of 1.0 percent defective.

4.5. Inspection and Tests.

4.5.1. Visual and Dimensional Examination. When selected in accordance with 4.4.2, each sample pump unit shall be visually and dimensionally examined to determine conformance with this specification. Visual or dimensional defects shall be classified as major or minor. A defect not listed in Table 1 shall be classified as a minor defect. If the number of defects in any sample exceeds the indicated AQL, the lot shall be rejected.

Table 1. Major and Minor Defects

Defect	Classification	
	Major	Minor
1. Engine and components not as required.	X	
2. Pump and components not as required.	X	
3. Frame and carrying handle not as required.	X	
4. Accessories not complete.	X	
5. Weight and dimensions not as required.	X	
6. Welding not as required.	X	
7. Threads dimensions not within specified dimensions and failure to pass thread tests.	X	
8. Markings not as required.		X
9. Painting not as specified.		X

4.5.2. Lot Acceptance Tests. Each of the samples selected in accordance with 4.4.3, shall be tested in accordance with 4.7, to determine conformance with requirements of this specification.

4.5.3. Quality Conformance Inspection. Unless otherwise specified, sampling for inspection shall be performed in accordance with ANSI/ASQC Z 1.4. The inspection level and AQL shall be as specified in 4.4.3.

4.6. Certificates of Conformance. Certificates of Conformance shall meet the requirements of USDA Forest Service Standard 5100-190. Where certificates of conformance are required, the Government reserves the right to verify test any such items to determine the validity of certification. These certificates shall be based on the testing of component materials and may be performed by the component material supplier. The contractor shall provide certificates of conformance for 3.3 and 3.7 (see 4.6.2 and 4.6.3).

4.6.1. Certificates of Conformance in Lieu of Testing. Unless otherwise specified, certificates of conformance may be acceptable in lieu of testing end items.

4.6.2. Pump Material. In accordance with 3.3, the pump shall meet the indicated material physical property requirements.

4.6.3. Surface Treatment. In accordance with 3.7, aluminum alloy threaded surfaces shall meet the indicated requirements, when tested to the defined test methods.

4.7. Performance Testing. Samples shall be subjected to the following tests to determine if the samples meet the requirements of the specification.

4.7.1. Fluid Medium. All testing requiring the use of a fluid medium shall be performed using municipally supplied potable water; this shall include, but is not limited to priming, drafting, stability and pump performance testing. If the contractor does not have access to a municipal water supply, the testing shall be performed using any clear fresh water normally available for firefighting. Testing performed by the Government will be conducted using municipally supplied potable water.

4.7.2. Pump Setup. The pump unit shall be equipped with necessary controls to conduct the pump performance tests below. The pump shall be subjected to a break-in period of a minimum 4 hours, of varying speeds and loads. A calibrated test pressure gage shall be installed on the discharge side of the pump. All test equipment shall be calibrated.

4.7.3. Priming Test. As required by 3.10.2, priming capabilities of the pump shall be determined. A 50 foot (15.24 m) length of 1 inch 11-1/2 NPSH or 1-1/2 inch 9 NH fire hose shall be connected to the pump discharge with the hose discharging into a weigh or measuring tank. The pump shall be started and placed in the water. The amount of time required for the pump to establish prime shall be measured.

4.7.4. Drafting Test. As required by 3.10.3, drafting capabilities shall be determined. After prime has been established, the pump shall be allowed to run while measuring the amount of water drafted per minute and the hydraulic pressure. A calibrated flow meter device or the weight versus time test method shall be used to measure flow.

4.7.5. Stability Test. As required by 3.10.4, the stability of the pump shall be determined. While the pump is drafting, the discharge nozzle shall be moved in various directions and placed in various positions. The pump shall be observed for signs of capsizing or sinking. The water source/tank used in stability testing shall be a minimum three times the maximum diameter of the floating pump.

4.7.6. Pump Performance Testing.

4.7.6.1. Pre-endurance Maximum Performance Test. As required by 3.10.5.1, the pump unit shall be tested for pre-endurance maximum performance. The pump shall be run at the maximum speed recommended by the manufacturer. The pump discharge shall be reduced in 25 psig (172 kPag) increments until complete shutoff. Pressure, flow and speed shall be recorded at each 25 psig (172 kPag) increment. From this information, the maximum performance curve shall be plotted on a graph. The maximum performance curve shall be corrected to standard sea level conditions at 29.92 inches Hg (102 kPa) vacuum and 60 °F (15.5 °C) in accordance with SAE J 1349. See Figure 1. The maximum pump power shall be the highest value obtainable by multiplying pressure (p_1) and flow rate (f_1) on the corrected curve.

4.7.6.2. 100-Hour Endurance Performance Test. As required by 3.10.5.2, the pump shall be tested for 100 hours endurance performance. The endurance testing does not need to be continuous, but each segment of the total 100 hours shall be a minimum of seven (7) hours of continuous operation. After plotting the corrected curve and determining the maximum pump power, p_1f_1, the endurance performance curve shall be plotted by using 85 percent of the corrected curve. For example, multiply $\sqrt{0.85}$ with each value of the corrected curve ($p_2 = p_1 \times \sqrt{0.85}$, $f_2 = f_1 \times \sqrt{0.85}$). After plotting the endurance performance curve, draw a straight line between p_1f_1 and the zero point on the graph (see figure 1). The intersection of the straight line with the endurance performance curve shall be indicated as the pump performance rating, p_2f_2, on the graph which shall be the pressure and flow rate values used in conducting the 100-hour endurance test.

4.7.6.3. Post-endurance Maximum Performance Test. As required by 3.10.5.3, the pump unit shall be tested for post-endurance maximum performance. The pump unit shall be run at maximum speed and the pump discharge reduced by 25 psig (172 kPag) increments until complete shutoff. The pressure and flow values shall be corrected to standard sea level conditions and plotted on the graph and compared with the pre-endurance curve.

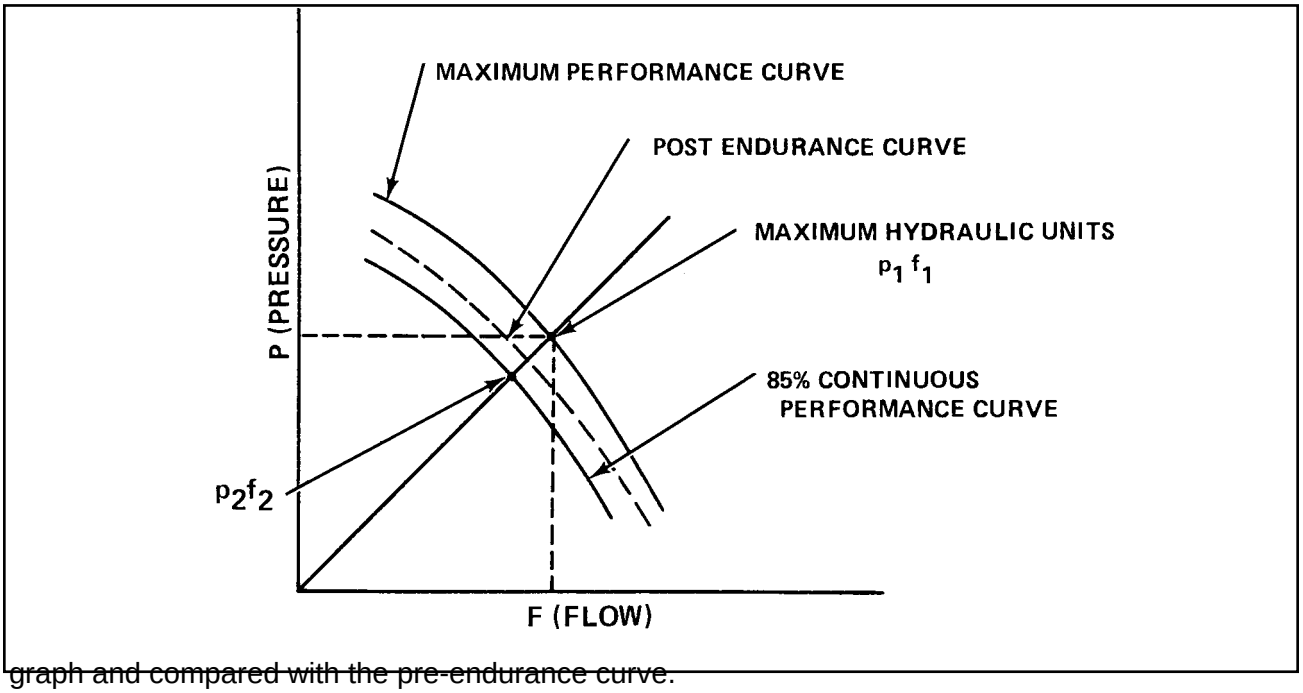

Figure 1. Pump Performance Curve.

4.7.7. Sound Level Test. As required by 3.10.6, the pump unit shall be tested for sound level. A warning label shall be permanently attached to the equipment and clearly visible to the operator. The label shall indicate that hearing protection is required when within 13 foot (4 m) of the equipment.

4.7.7.1. Test Site. The test site shall consist of a flat, smooth, outdoor area. The surface shall be covered with grass or turf not higher than 3.0 inches (76.2 mm), pavement, bare earth, gravel, or a similar substance. In addition, the surface shall be free of snow, loose dry grass or weeds, ashes, or other substances which might interfere with the accuracy of the test. There shall be no obstructions larger than the size of a person within 50.0 foot (15.2 m) and no obstructions at all within 13.0 foot (4.0 m) of the pump unit under test.

4.7.7.2. Test Instruments. A sound level meter meeting the requirements of ANSI Standard S 1.4-1983, Type 1 or 2 shall be used. The A-weighted scale shall be used during the measurements with the sound level meter set to slow response.

4.7.7.3. Test Method. The pump unit shall be operated at p_2 f_2. Measurements shall be taken at four equally dispersed points around the pump unit with the sound level meter microphone located at a horizontal distance of 13.0 foot (4.0 m) from the pump unit and 5 foot (1.5 m) above the ground. The sound level meter manufacturer's instructions shall be followed for proper orientation of the microphone. Note: A free field response microphone is generally pointed towards the sound source, and a pressure response microphone is generally oriented perpendicular to a line between the sound source and the microphone.

4.7.7.4. Limit and Report. The average of the four sound level readings shall be reported to the nearest whole decibel.

5. PACKAGING, PACKING AND MARKING.

5.1. Packaging, Packing and Marking. Each pump unit shall be packaged and crated one each per container. Additional requirements regarding packaging, packing and marking shall be as specified in the contract or order.

6. NOTES.

6.1. Intended Use. The floating portable pump described in this specification is designed for use in direct attack, relay pumping and mop-up in wildland firefighting operations. The unit is self-contained consisting of a gasoline engine-driven pump with accessories. The pump is self priming and floats on the surface of the water, while in operation. The floating pump is lightweight, designed to be carried by one person and for use in high altitude remote areas.

6.2. Acquisition Requirements. Acquisition documents should specify the following:

a. Title, number and date of this specification.

b. Thread series designation of pump outlet (see 3.2.3.1).

c. If certificates of conformance are acceptable in lieu of lot by lot testing (see 4.6).

d. Packaging, packing and marking (see 5.1).

e. Date of the invitation for bids or request for proposals (see 2.1)

6.3. Qualification. The contracting officer should verify that the bidder possesses a currently valid notice of qualification with associated Qualified Products List (QPL) number obtained in accordance with 4.1. This QPL shall have already been obtained with a date of issue prior to the date of invitation for bids.

6.4. Notice. When Government drawings, documents, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever.

6.5. Preparing Activity. USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91773-3198.

United States Department of Agriculture, Forest Service
Standardization Document Improvement Proposal

Instructions: This form is provided to solicit beneficial comments which may improve this document and enhance its use. Contractors, government activities, manufacturers, vendors, or other prospective users of this document are invited to submit comments to the USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, California 91773-3198. Attach any pertinent data which may be used in improving this document. If there is additional documentation, attach it to the form and place both in an envelope addressed to the preparing activity. A response will be provided when a name and address are included.

Note: This form shall not be used to submit request for waivers, deviation, or for 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(s) or to amend contractual requirements.

Standard Number and Title: **Specification 5100-275b, Pump, Portable, Floating**

Name of Organization and Address:

_____ Vendor _____ User _____ Manufacturer

1. _____Has any part of this document created problems or required interpretation in procurement use?

   _____Is any part of this document too rigid, restrictive, loose or ambiguous? Please explain below.

Give paragraph number and wording:

Recommended change(s):

Reason for recommended change(s):

Remarks:

Submitted by: (Print or type name and address—Optional)	Telephone number: (Optional)
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USDA Forest Service
San Dimas Technology & Development Center
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San Dimas, California 91773-3198

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