

INCH-POUND

MIL-B-81934B

3 May 1991

SUPERSEDING

MIL-B-81934A

24 September 1987

MILITARY SPECIFICATION

BEARINGS, SLEEVE, PLAIN AND FLANGED, SELF-LUBRICATING,
GENERAL SPECIFICATION FOR

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification covers plain and flanged sleeve bearings which are self-lubricating by incorporating polytetrafluoroethylene (PTFE) in a liner in the bore for use in a temperature range of -65° to +325°F.

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards and handbooks. The following specifications, standards and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, 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 (see 6.2).

SPECIFICATIONS

Federal

QQ-P-35	Passivation Treatments for Corrosion Resistant Steel.
QQ-P-416	Plating, Cadmium (Electrodeposited).
TT-S-735	Standard Test Fluids; Hydrocarbon.

Military

MIL-P-116	Preservation, Methods of.
MIL-B-197	Bearings, Anti-Friction, Associated Parts and Sub-Assemblies; Preparation and Delivery of

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, SESD (Code 53), Lakehurst, NJ 08733-5100, by using the Standardization Document Improvement Proposal - (DD Form 1426) appearing at the end of this document or by letter.

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SPECIFICATIONS (Continued)

Military (Continued)

MIL-C-5541	Chemical Conversion Coatings on Aluminum Alloys.
MIL-H-5606	Hydraulic Fluid, Petroleum Base, Aircraft, Missile and Ordnance.
MIL-T-5624	Turbine Fuel, Aviation, Grades JP-4, JP-5 and JP-5/JP-8ST.
MIL-L-7808	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number O-148.
MIL-A-8243	Anti-Icing and Deicing-Defrosting Fluids.
MIL-A-8625	Anodic Coatings, For Aluminum and Aluminum Alloys.
MIL-B-81820	Bearings, Plain, Self-Aligning, Self-Lubricating, Low Speed Oscillation.
MIL-H-83282	Hydraulic Fluid, Fire Resistant, Synthetic Hydrocarbon Base, Aircraft, Metric NATO Code Number H-537.
MIL-B-81934/1	Bearing, Sleeve, Plain, Self-Lubricating, +325°F.
MIL-B-81934/2	Bearing, Sleeve, Flanged, Self-Lubricating, +325°F.

STANDARDS

Military

DOD-STD-100	Engineering Drawing Practices.
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage.
MIL-STD-1599	Bearings, Control System Components and Associated Hardware Used in the Design and Construction of Aerospace Mechanical Systems and Subsystems.
MS14101	Bearing, Plain, Self-Lubricating, Self-Aligning, Low Speed, Narrow, Grooved Outer Ring, -65°F to +325°F.

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

2.2 Non-Government 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 are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

American National Standards Institute

ANSI/ASME B46.1	Surface Texture, Surface Roughness, Waviness and Lay.
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(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018 or to the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017.)

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American Society for Testing Materials

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| F-25 | Method for Sizing and Counting Airborne Particulate Contamination in Clean Rooms and Other Dust Controlled Areas Designed for Electronic and Similar Applications. |
| F-50 | Practice for Continuous Sizing and Counting of Airborne Particles in Dust Controlled Areas Using Instruments Based Upon Light Scattering Principles. |
| C-794 | Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants. |

(Copies of the above publications may be obtained from the American Society for Testing Materials, 1916 Race Street, Philadelphia, PA 19103, telephone 215-299-5400.)

Uniform Classification Committee

Uniform Freight Classification Rules

(Application for copies of the above publication should be addressed to the Uniform Classification Committee, 202 Chicago Union Station, Chicago, IL 60606.)

(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 document and the references cited herein (except for associated detail specifications, specification sheets, or MS standards), the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.4 Streamlining. This document has been streamlined. Appendix A to MIL-B-81934 lists those documents required for MIL-B-81934 acquisition and is a mandatory part of MIL-B-81934. Those documents listed in Appendix A have the same status as those referenced directly in MIL-B-81934 (first tier documents). All other documents, referenced through tiering, may be used as guidance and information to supplement MIL-B-81934. MIL-B-81934 is a streamlined document.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern.

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3.2 Qualification. Bearings furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time of award of contract (see 4.3, 6.3 and 6.3.1).

3.2.1 Product design change. Any change in product design, description, materials or processing procedures will require requalification of the product to an extent determined by the qualifying activity.

3.2.2 Product manufacture. Except for the bonding operations, the manufacturer is permitted to subcontract manufacturing operations without violating the requirements of 3.2.1. The bonding operations shall be performed in the plant listed on the Qualified Products List. Manufacture of the self-lubricating liner material may also be subcontracted. Any change in (1) the liner manufacturer, (2) the liner manufacturing procedures, or (3) the materials used in manufacture of the liner will require requalification to an extent determined by the qualifying activity.

3.3 Materials. Material for the sleeve and liner shall be in accordance with the applicable military specification sheet. PTFE shall be included in the liner in such a manner that the bearing will conform to all requirements of this specification.

3.3.1 Corrosion resistant steel finishes. Corrosion resistant steel (cres) sleeve bearings shall be finished by cadmium plating or passivating in accordance with the finish option in the part number.

3.3.1.1 Cadmium plating. When required by the part number, plating of the outside diameter of cres sleeve bearings shall be in accordance with QQ-P-416, Type II, Class 2, and the applicable military specification sheet. The 23 hour bake time of the plating specification shall be waived to prevent over-curing of the liner adhesive. Hydrogen embrittlement testing is not required.

3.3.1.2 Passivation. When required by the part number, exposed metallic surfaces of unplated cres sleeve bearings shall be passivated per QQ-P-35 after all metal removal operations, regrinding inclusive, have been completed. Passivation may be performed before or after bonding, at the bearing manufacturer's option.

3.3.2 Aluminum finishes. Aluminum sleeve bearings shall be anodized per MIL-A-8625, Type I or II or chemical film treatment per MIL-C-5541.

3.4 Design. Bearing design shall conform to that shown on MIL-B-81934/1 and MIL-B-81934/2.

3.5 Construction. The liner shall be so secured that all relative motion will be between the liner and the shaft. Except as otherwise specified on the applicable military specification sheet, the details of the design shall be optional.

3.5.1 Dimensions and tolerances. Dimensions and tolerances shall be as specified on the applicable military specification sheet. Dimensions not shown shall be at the option of the manufacturer.

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3.5.2 Surface texture. The surface texture shall be in accordance with the applicable specification sheet and ANSI/ASME B46.1. Bearings shall be free of any surface defects which may be detrimental to satisfactory installation, performance or bearing life as defined in this specification.

3.5.3 Lubrication. Initial grease or oil lubrication by the manufacturer will not be permitted.

3.5.4 PTFE liner condition and bond integrity.

3.5.4.1 Visual examination. The visual appearance of the bonded liner shall exhibit a degree of workmanship consistent with proper manufacturing process controls, as checked per 4.6.5.1. The liner shall be uniform in texture and shall contain no imbedded contaminants. The liner set-back shall meet the applicable drawing requirements. There shall be no separation or lifting of the liner at any of the edges. There shall be no unraveling or excessive fraying of the liner at any of the edges. Molded liners shall not contain embedded contaminants, cracks or bubbles.

3.5.4.2 Bond integrity and peel strength. When tested in accordance with 4.6.5.2, the liner shall be tightly adherent to the metallic substrate over at least 90 percent of the contact area and shall exhibit an average peel strength of 2.0 pounds per inch or greater. The adhesive remaining on the metal substrate shall have no void or unbonded area which cannot be included within a circumscribing circle with a diameter equal to 25 percent of the race width or 0.25 inch, whichever is smaller.

3.5.4.2.1 Processing controls. All fabrication of the PTFE liner involving application or mixing of adhesive, and all liner bonding procedures involving application of adhesive, shall be conducted in a controlled area.

3.5.4.2.1.1 Controlled area. The controlled area shall be maintained at a temperature of $75^{\circ} \pm 10^{\circ}\text{F}$ with a maximum relative humidity of 75%. The enclosed atmosphere of the work area shall be well ventilated and maintained so that the particle count is 2500 maximum 5.0 microns or larger when measured per ASTM F-25 or ASTM F-50. The particle count measurement shall be performed annually (minimum). There shall be no eating or smoking in the controlled area and no process which produces uncontrolled spray, dust, fumes or particulate matter.

3.5.4.3 Liner peelability. Each manufacturer shall establish during qualification testing whether the liner is peelable or non-peelable. If peelable, the manufacturer shall determine the mean and standard deviation peel strength values for the liner based upon a minimum of six peel strength tests conducted in accordance with 4.6.5.2. This data shall be recorded in the qualification test report. A liner originally qualified as peelable shall remain peelable in production. A liner originally qualified as non-peelable shall remain non-peelable in production.

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3.6 Performance.

3.6.1 Radial static limit load. After the radial static limit load listed in Table I has been applied as specified in 4.6.1, the permanent set shall not exceed 0.002.

TABLE I. Load values.

Part no.	Radial static limit load (lbs)	Oscillation load (lbs)	After test torque (in./lbs max)
M81934/1-08A012	6,900	6,300	79
M81934/1-08C012	10,800	6,300	79
M81934/1-16A016	20,000	16,500	410
M81934/1-16C016	31,400	16,500	410
M81934/1-24A016	30,000	22,500	840
M81934/1-24C016	47,100	22,500	840

3.6.2 Oscillation under radial load. The total liner wear of the bearing shall not exceed 0.0035 inch after 1000 cycles, 0.0040 inch after 5000 cycles and 0.0045 inch after 25,000 cycles when tested at room temperature in accordance with 4.6.2. Visual examination of the liner after test shall indicate no loss of bonding to the metal substrate in the loaded area.

3.6.3 Fluid compatibility. When tested in accordance with 4.6.3, the bearings shall be compatible with the fluids listed in 4.6.3 and the total liner wear shall not exceed 0.0060 inch. Visual examination of the liner after test shall indicate no loss of bonding to the metal substrate in the loaded area.

3.6.4 High temperature. When tested in accordance with 4.6.4, under the dynamic load specified in Table I, the total liner wear shall not exceed 0.0060 inch. Visual examination of the liner after test shall indicate no loss of bonding to the metal substrate in the loaded area.

3.7 Interchangeability. All parts having the same manufacturer's part number shall be directly and completely interchangeable with each other and with respect to installation and performance. The drawing number requirements of DOD-STD-100 shall govern documentation of and changes in the manufacturer's part numbers.

3.8 Identification of product. Each bearing shall be permanently and legibly marked with the manufacturer's identification. Where space permits, other information as specified on military specification sheet shall be marked. Metal impression stamping is prohibited.

3.9 Workmanship.

3.9.1 General requirements. All workmanship shall be such as to result in a first quality bearing which meets the requirements of this specification. The bearing shall be free from defects which may affect its durability and serviceability.

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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 this specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall 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 Qualification test records. The manufacturer shall maintain a record showing quantitative results for all tests required by this specification. This record shall be available to the purchaser and shall be signed by an authorized representative of the manufacturer or the testing laboratory, as applicable.

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

- a. Qualification inspection (4.3).
- b. Quality conformance inspection (4.4).

4.3 Qualification inspection.

4.3.1 Sampling instructions. Qualification test samples shall consist of 38 bearings conforming to M81934/1-08A012 plus 15 bearings of each of the additional bore diameters, widths and housing materials specified below for which qualification is desired. All bearings necessary for tests specified herein shall be furnished by the manufacturer. Samples shall be identified as required and forwarded to the activity designated in the letter of authorization (see 6.3 and 6.3.1).

When approved:

M81934/1-08C012 will qualify	M81934/1&/2-04C thru -09C
M81934/1-08A012 will qualify	M81934/1&/2-04A thru -09A
M81934/1-16C016 will qualify	M81934/1&/2-10C thru -18C
M81934/1-16A016 will qualify	M81934/1&/2-10A thru -18A
M81934/1-24C016 will qualify	M81934/1&/2-20C thru -32C
M81934/1-24A016 will qualify	M81934/1&/2-20A thru -32A

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4.3.2 Certified test report. The manufacturer shall furnish a certified test report showing that the manufacturer's product satisfactorily conforms to this specification (see 6.3.1). The test report shall include, as a minimum, actual results of the tests specified herein. When the report is submitted, it shall be accompanied by a dated drawing which completely describes the manufacturer's product by specifying all dimensions and tolerances, outer race material, coating or plating, and heat treatment. The manufacturer's part number for each size shall be included on the drawing.

4.3.3 Tests. Qualification tests shall include all the examinations and tests of this specification. The minimum number of samples per test shall be in accordance with Table II.

TABLE II. Qualification test samples.

Examination and tests	Paragraph number	Samples to be tested
Examination of product	4.5.1	5
Preparation for delivery	4.5.2	5
Radial static limit load 1/	4.6.1	3
Oscillation under radial load 1/	4.6.2	3
Fluid compatibility 1/	4.6.3	3 (M81934/1-08A012 only)
High temperature 1/	4.6.4	
Bond integrity	4.6.5	

1/ These tests are not required if the following conditions are all satisfied and certified:

- a. The bearing manufacturer is qualified to MIL-B-81820 for sizes MS14101- 5, -8 and -12.
- b. The liner materials and bonding procedures used in these sleeve bearings are the same as qualified to MIL-B-81820.

4.3.4 Retention of qualification. The continued listing of a product on the Qualified Products List is dependent upon a periodic verification of the manufacturer's continued compliance with the requirements of this specification and with standardization regulations. As part of that verification process, each manufacturer must complete DD Form 1718 during October of each odd numbered year. This form, supplied by the qualifying activity, is to be signed by a responsible official of management and sent to the Naval Air Development Center, Code 60611, Warminster, PA 18974-5000.

4.3.5 Periodic retest for retention of qualification. In addition to the certification requirement of 4.3.4, each manufacturer shall retest a sample of bearings from recent production at five year intervals beginning in 1992. The tests to be performed shall be as follows:

- a. 4.6.2 Oscillation Under Radial Load.
- b. 4.6.3 Fluid Compatibility, using MIL-H-83282 Hydraulic Fluid.

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- c. 4.6.4 High Temperature.
- d. 4.6.5 Bond Integrity.

The test bearings shall be a single size from normal production. The bearings shall be M81934/1-16A016 or M81934/1-16C016, at the manufacturer's option. Three samples each of tests (a) through (c), and six samples of test (d) are required. The test data shall be assembled in report form, certified by the Chief Engineer or other responsible official of management, and forwarded to the Qualifying Activity in October of the appropriate year. If the bearing manufacturer is qualified to MIL-B-81820 for sizes MS14101-5, -8 and -12, and the liner material and bonding procedures used in these sleeve bearings are the same as qualified to MIL-B-81820, the periodic retest for retention of qualification requirements of MIL-B-81820 will satisfy the requirements of this paragraph.

4.4 Quality conformance. The quality conformance tests of the bearings shall consist of the examinations and tests of Table III to determine conformance of the bearings to the requirements of this specification. The samples shall be selected in accordance with MIL-STD-105, Table II-A.

TABLE III. Quality conformance tests.

Examinations and tests	Paragraph numbers	AQL
(a) Dimensions	(3.5.1), (4.5.1)	4.0
(b) Identification of product	(3.8), (4.5.1)	1.0
(c) Workmanship	(3.5.4.1), (3.9), (4.5.1)	1.0
(d) Preparation for delivery	(4.5.2)	1.0
(e) Liner condition and bond integrity	(3.5.4.1), (3.5.4.2), (4.6.5)	10.0

4.4.1 Inspection lot. The inspection lot shall consist of finished bearings, having a single part number, manufactured according to same procedures as the parts originally qualified and produced as one continuous run or order or portion thereof.

4.4.2 Sampling.

4.4.2.1 Sample for quality conformance tests (a) through (d). The sample bearings shall be selected from each inspection lot in accordance with MIL-STD-105, inspection level II.

4.4.2.2 Sample for quality conformance test (e). The sample bearing shall be selected from each inspection lot in accordance with MIL-STD-105, inspection level S-2.

4.4.3 Quality assurance certification. For each inspection lot the manufacturer shall maintain and supply to the purchaser upon demand:

- a. Certified copies of all records of quality conformance tests specified in 4.4 and the purchase order.

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- b. Certification that the materials, manufacturing procedures and processes used in producing the bearings are the same as those of the bearings originally qualified.

These records and certifications shall identify the manufacturer of the bearings, the address of the plant where they were manufactured, the purchaser and the purchase order number.

4.4.4 Resubmitted inspection lots. Where the original acceptance number was zero, a sample size represented by the next higher sample size code letter shall be selected. A resubmitted inspection lot shall be inspected using tightened inspection. When an inspection lot is resubmitted, full particulars concerning the cause of previous rejection and the action taken to correct the defects found in the inspection lot, shall be furnished by the contractor to the procuring activity.

4.5 Examinations.

4.5.1 Examination of product. The bearings shall be examined to determine conformance to the requirements of this specification and the applicable military specification sheet for material, dimensions, finish, identification of product, workmanship and requirements not covered by tests.

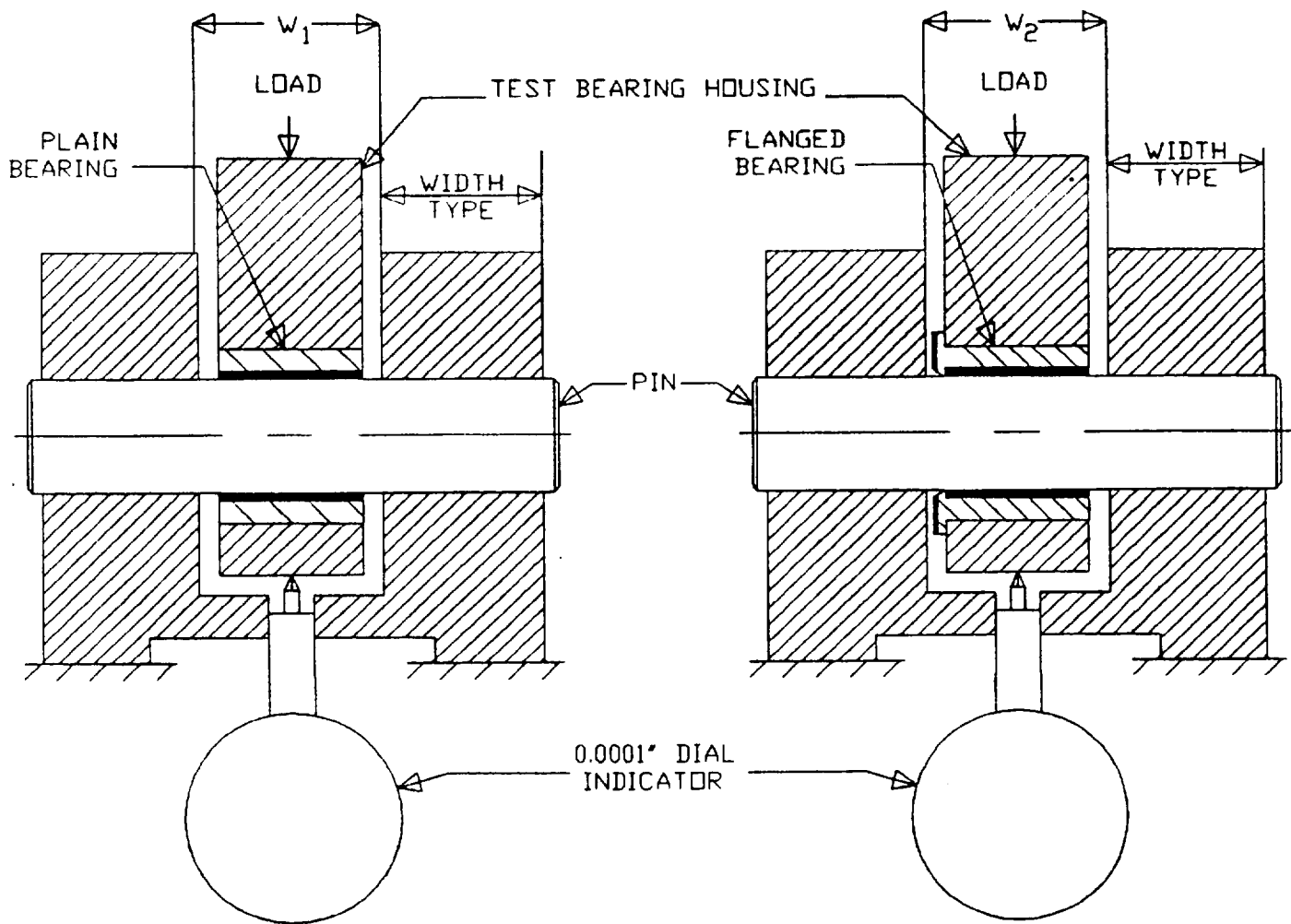
4.5.2 Preparation for delivery. Preservation, packaging, packing and marking shall be inspected to determine conformance to Section 5.

4.6 Test methods. Unless otherwise specified, all tests shall be conducted at room temperature.

4.6.1 Radial static limit load. The bearings shall be installed in a test fixture as shown on Figure 1, using 0.0001 to 0.0011 (CRES) and 0.0001 to 0.0016 (aluminum) interference fit with the housing and a 0.002 to 0.004-inch loose fit with the pin. A preload of 4 to 6 percent of the radial static limit load shall be applied to the bearing for 3 minutes, and the measuring device set at zero. The load shall then be increased at the rate of 1 percent of the specified load per second until it equals the radial static limit load listed in Table I. The load shall then be reduced at the same rate to the preload value. The permanent set shall be the reading at preload.

4.6.2 Oscillation under radial load. The bearing shall be installed in a steel housing, using a 0.0001 to 0.0011 (CRES) and 0.0001 to 0.0016 (aluminum) inch interference fit with the housing and a 0.000 to 0.001-inch loose fit with the pin. The bearing shall be so installed as to place the pin in double shear. A dial indicator or electronic pickup shall be so mounted that any radial movement of the pin or the bore of the bearing with respect to the bearing outside diameter can be measured. The oscillation load specified in Table I shall be applied and held statically for 15 minutes. At the end of this time, the indicating device shall be set at zero and the oscillating test shall be started. Wear readings shall include the wear from the first cycle on. The test shall be run in such a manner that the pin is oscillated ± 25 degrees (50 degrees total) at 10 cycles per minute for 25,000 cycles. One cycle shall consist of rotation from zero degrees to $+25$ degrees, return through zero degrees to -25 degrees and return to zero degrees. Sufficient

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Pin: Diameter = $B + 0.000 / -0.001$

Material = Steel 50 Rc min

Finish = 8 max and shall be honed, polished or similarly finished subsequent to grinding

Note: Taper one end 0.5" min length, tapered end to extend beyond support housing when assembled

Test Bearing Housing: Bore = $D - (0.0006 \text{ to } 0.0011)$
 Width = $L \text{ max} + 0.002 - 0.000$
 Length = $2D \text{ min}$

Support Housing: Bore = Pin dia max + $(0.0002 \text{ to } 0.0027)$
 Min support width = $L \text{ nominal}$
 Length = $(2) \text{ (pin dia min)}$
 $W1 = L + (0.025 \text{ to } 0.030)$
 $W2 = L + F + (0.025 \text{ to } 0.030)$

(L, F, and D may be obtained from the appropriate specification sheet)

FIGURE 1. Radial test fixture.

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readings during the test shall be recorded to plot a graph of wear (thousandths of an inch) vs life (cycles). Upon completion of the test, the loaded breakaway torque shall be as specified in Table I and liner wear and liner bond shall be as specified in 3.6.2.

4.6.3 Fluid compatibility. Fifteen bearings conforming to M81934/1-08A012 (3 for each fluid) shall be immersed for 24 hours in each of the following fluids at 160° ±5°F, except for (b) which shall be at 110° ±5°F:

- a. Skydrol 500B hydraulic fluid
- b. TT-S-735, type VII standard test fluid or MIL-T-5624, grade JP-4 or JP-5
- c. MIL-L-7808 lubricating oil
- d. MIL-H-5606 hydraulic oil
- e. MIL-A-8243 anti-icing fluid
- f. MIL-H-83282 hydraulic fluid

Within 1/2 hour after removal from the test fluid the bearing shall be tested in accordance with 3.6.3 and 4.6.2. The load for (e) shall be 75 percent of the oscillation load specified in Table I.

4.6.4 High temperature. Three bearings conforming to M81934/1-08A012 shall be subjected to the test of 4.6.2, except that the bearings shall be heated in such a way that the pin/liner interface is maintained at a temperature of 325°F minimum. The load shall be 100% of the oscillation load specified in Table I.

4.6.5 Bond integrity.

4.6.5.1 Visual examination. Visually examine the exposed liner surface for conformance to the applicable requirements of 3.5.4.1, 3.9 and the military specification sheet.

4.6.5.2 Bond integrity and peel strength. Peel the liner away from the metal substrate and evaluate the peel strength and adhesive bond appearance per 3.5.4.2. A blade or scribe may be used to initiate the peel. To determine peel strength, the liner shall be attached to a calibrated spring scale or tension testing machine of the type described in ASTM C-794 and the liner peeled back from the substrate at 140° ±40° angle to the bond surface at a speed of 0.5 to 1.0 inch per minute (see Figure 2). The average peel strength value shall be recorded and included in the test report. Where possible, the peel shall be conducted on the entire width of the bonded liner. When the peel is conducted on the entire width of the race, the width for calculating peel strength in pounds per inch shall be the machined width minus 0.050 inch to account for chamfers and edge effects. At the manufacturer's option, or when peeling of the full race width is impractical, the liner may be cut through to the metal substrate to form a peel sample with a minimum width of 0.500 inch. This peel sample may be cut either parallel to or perpendicular

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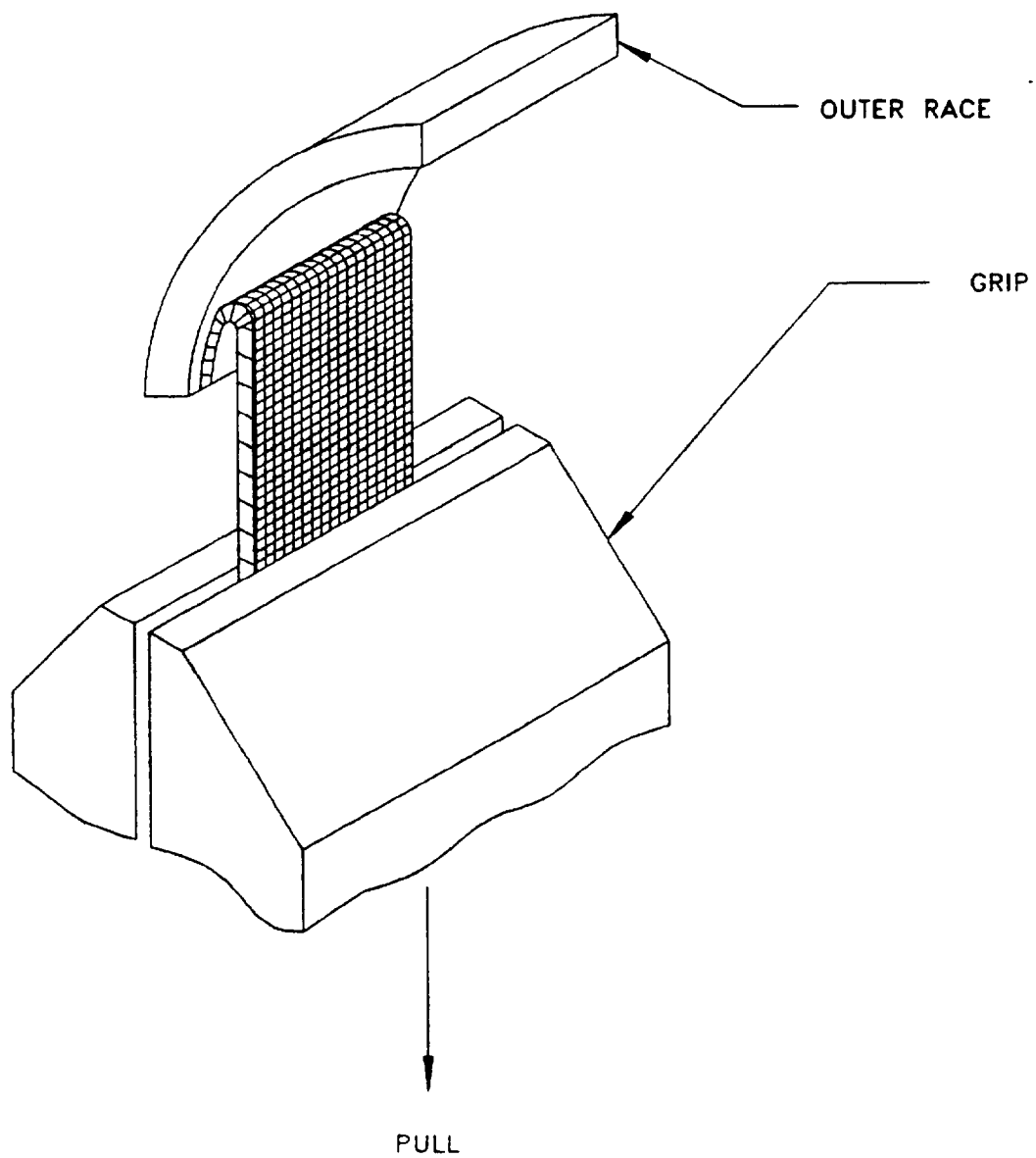


FIGURE 2. Example of peel test fixture.

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to the race side face. This sample shall be peeled as previously described. The peel strength test shall be waived for the -04 through -09 size bearings, but the liner shall be peeled by hand to permit visual examination of the bond line for voids.

Following liner peel, the adhesive bond appearance shall be evaluated to determine the location and size of any voids or unbonded areas as specified in 3.5.4.2. In the event the liner cannot be removed without employing chipping, scraping or abrasive techniques, the liner shall be considered to be properly bonded and free of voids and shall be classed as nonpeelable.

5. PACKAGING

5.1 Preservation. Preservation shall be Level A or C as specified in 5.1.1 and 5.1.2 (see 6.2). Cleaning solvent, grease, or oil shall not be used. Prior to packaging, bearings shall be cleaned in one of the following ways:

- a. Clean, dry compressed air per MIL-P-116.
- b. Wiping with soft, clean cloth per MIL-P-116.
- c. Manufacturer's established cleaning procedures for this bearing.

5.1.1 Level A. Packaging shall be in accordance with Level A of MIL-B-197. The manufacturer's lot control number shall be marked on each package.

5.1.2 Level C. Packaging shall be in accordance with the fabricator's commercial practice. The manufacturer's lot control number shall be marked on each package.

5.2 Packing.

5.2.1 Level A. Bearings packaged as specified in 5.1.1 shall be packed for overseas shipment and storage in accordance with MIL-B-197.

5.2.2 Level B. Bearings packaged as specified in 5.1.1 shall be packed for domestic shipment and storage in accordance with MIL-B-197.

5.2.3 Level C. Bearings packaged as specified in 5.1.2 shall be packed in a manner to insure carrier acceptance and safe delivery at destination. The containers shall be in accordance with the Uniform Freight Classification Rules or regulations of other carriers, as applicable to the mode of transportation.

5.3 Marking. Interior packages and exterior shipping containers shall be marked in accordance with MIL-STD-129. The nomenclature shall include:

Bearings, Sleeve, *(Plain or Flanged), Self-Lubricating

*Applicable data to be entered by contractor.

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6. NOTES

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

6.1 Intended use. These bearings are intended primarily for use in air-frame applications of high loads at low rotational oscillatory speeds. For specific design information on the capability of these bearings under particular load speed and wear/life conditions the user is referred to MIL-STD-1599.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number and date of this specification.
- b. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1).
- c. Military identifying part number.
- d. Applicable levels of preservation, packaging and packing (see 5.1 and 5.2).
- e. Quality assurance certification (see 4.4.2).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Products List QPL No. 81934 whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is the Naval Air Systems Command (Naval Air Engineering Center, Systems Engineering and Standardization Department, Code 5311, Lakehurst, NJ 08733-5100) and information pertaining to qualification of products may be obtained from that activity; however, information pertaining to the qualifying of products may be obtained from the Naval Air Development Center, Code 6061, Warminster, PA 18974-5000.

6.3.1 Authorization for submittal of samples. A manufacturer seeking qualification approval of his product will be authorized to submit samples for such approval only upon presentation of certified test reports and drawings indicating that his product conforms to this specification.

6.4 Definitions.

6.4.1 Processing procedures. All bonding, curing and postcuring procedures.

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6.4.2 Void. A void is an area where the metal substrate is smooth and shiny with no visible adhesive.

6.4.3 Unbonded area. An unbonded area is where the adhesive remaining on the metal substrate is smooth and shiny indicating a lack of bonding pressure.

6.5 Plating process caution. Caution should be taken during plating process. The contractor should be responsible for the safe reutilization and disposal of all material generated by this process in accordance with ASTM A380, Sections 8.2 and 8.7.

6.6 Streamlining. For MIL-B-81934 acquisitions, the required portions of all MIL-B-81934 tier reference documents shall be limited to the portions described in the "Applicability" column in Table IV in Appendix A.

6.7 Tailoring. When MIL-B-81934 is tailored in an acquisition, Appendix A must be tailored accordingly. In particular, when Appendix A is tailored, specific attention must be given to the chain of referencing. For example, if a first tier reference document in MIL-B-81934 is tailored out, all of the reference documents which are tiered to that first tier reference document must be tailored out.

6.8 Subject term (keyword) listing.

Bearings, self-lubricating
Bearings, sleeve

6.9 Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

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APPENDIX A

STREAMLINING INFORMATION

10. SCOPE

10.1 Scope. This appendix is a list of documents referenced in MIL-B-81934 or tiered to documents referenced in MIL-B-81934. These documents have the same status as those referenced directly in MIL-B-81934 (first tier documents). This appendix is a mandatory part of this specification. The information contained herein is intended for compliance.

10.2 Application. This appendix identifies the applicability of the documents referenced in MIL-B-81934 or tiered to documents referenced in MIL-B-81934 through the third tier. Only that portion(s) of a document listed in Table IV of this appendix, and described in the "Applicability" column, is pertinent in the use of MIL-B-81934. If MIL-B-81934 is tailored in acquisition, this appendix must also be tailored.

20. DOCUMENTS

20.1 Documents. The documents listed herein and corresponding applicability data have been identified as required. All other documents referenced through tiering are not considered required and may be used for guidance and information.

TABLE IV. Required documents and corresponding applicability data.

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
<u>First Tier (1 of 24 Documents)</u>			
QQ-P-35	Passivation Treatments for Corrosion Resistant Steel	Classification, requirements and quality assurance provisions	MIL-B-81934
<u>First Tier (2 of 24 Documents)</u>			
QQ-P-416	Plating, Cadmium (Electrodeposited)	Classification, requirements and quality assurance provisions	MIL-B-81934
<u>First Tier (3 of 24 Documents)</u>			
TT-S-736 <u>1</u> /	Standard Test Fluids, Hydrocarbon	Classification, requirements and quality assurance provisions for type VII	MIL-B-81934
<u>First Tier (4 of 24 Documents)</u>			
MIL-P-116	Preservation, Methods of	Due to the extensive number of variables associated with packaging, applicable sections of packaging documents cannot be identified prior to acquisition. All packaging requirements of the zero tier document must be met, unless otherwise specified in the contract.	MIL-B-81934

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
<u>First Tier (5 of 24 Documents)</u>			
MIL-B-197	Bearings, Anti-Friction, Associated Parts and Sub-Assemblies, Packaging of	Due to the extensive number of variables associated with packaging, applicable sections of packaging documents cannot be identified prior to acquisition. All packaging requirements of the zero tier document must be met, unless otherwise specified in the contract.	MIL-B-81934
<u>First Tier (6 of 24 Documents)</u>			
MIL-C-5541	Chemical Conversion Coatings on Aluminum Alloys	Classification requirements and quality assurance provisions	MIL-B-81934
<u>First Tier (7 of 24 Documents)</u>			
MIL-H-5606	Hydraulic Fluid, Petroleum Base; Aircraft, Missile and Ordnance	Any qualified products list (QPL) item.	MIL-B-81934
<u>First Tier (8 of 24 Documents)</u>			
MIL-T-5624 1/	Turbine Fuel, Aviation, Grades JP-4 and JP-5	Classification, requirements and quality assurance provisions for grade JP-4 and JP-5.	MIL-B-81934
1/ The applicable portion of either TT-S-735, type VII, or MIL-T-5624, grade JP-4 or JP-5, may be used.			
<u>First Tier (9 of 24 Documents)</u>			
MIL-L-7808	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number O-148	Any QPL item.	MIL-B-81934
<u>First Tier (10 of 24 Documents)</u>			
MIL-A-8243	Anti-Icing and Deicing-Defrosting Fluids	Classification, requirements and quality assurance provisions.	MIL-B-81934

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
<u>First Tier (11 of 24 Documents)</u>			
MIL-A-8625	Anodic Coatings, for Aluminum and Aluminum Alloys	Classification, requirements and quality assurance provisions for type I and II.	MIL-B-81934
<u>First Tier (12 of 24 Documents)</u>			
MIL-B-81820	Bearings, Plain, Self-Aligning, Self-Lubricating, Low Speed Oscillation, General Specification for	Any QPL item. Bearing manufacturer qualified to QPL items MS14101-5, -8 and -12.	MIL-B-81934
<u>First Tier (13 of 24 Documents)</u>			
MIL-H-83282	Hydraulic Fluid, Fire Resistant, Synthetic Hydro-Carbon Base, Aircraft, NATO Code Number H-537	Any QPL item.	MIL-B-81934
<u>First Tier (14 of 24 Documents)</u>			
MS14101	Bearing, Plain, Self-Lubricating, Self-Aligning, Low Speed, Narrow, Grooved Outer Rings, -65° to 320°F	Bearing manufacturer for QPL 81820 items MS14101-5, -8 and -12.	MIL-B-81934
<u>First Tier (15 of 24 Documents)</u>			
DOD-STD-100	Engineering Drawing Practices	Item identification and part numbering, changes requiring new identification, changes not requiring new identification.	MIL-B-81934

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
<u>First Tier (16 of 24 Documents)</u>			
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes	Table II-A, inspection level II, AQL 1.0% and AQL 4.0%, inspection level S-2 AQL 10.0%, resubmitted lots or batches.	MIL-B-81934
<u>First Tier (17 of 24 Documents)</u>			
MIL-STD-129	Marking for Shipment and Storage	Due to the extensive number of variables associated with packaging, applicable sections of packaging documents cannot be identified prior to acquisition. All packaging requirements of the zero tier document must be met, unless otherwise specified in the contract.	MIL-B-81934
<u>First Tier (18 of 24 Documents)</u>			
ASTM C794	Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants	Testing machine.	MIL-B-81934
<u>First Tier (19 of 24 Documents)</u>			
ASTM F25 2/	Standard Method for Sizing and Counting Airborne Particulate Contamination in Clean Rooms and Other Dust-Controlled Areas Designed for Electronic and Similar Applications	Entire document.	MIL-B-81934

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
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First Tier (20 of 24 Documents)

ASTM F50 <u>2/</u>	Standard Practice for Continuous Sizing and Counting of Airborne Particles in Dust-Controlled Areas Using Instruments Based Upon Light-Scattering Principles	Entire document.	MIL-B-81934
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2/ The applicable portion of either ASTM F25 or ASTM F50 may be used.

First Tier (21 of 24 Documents)

MIL-B-81934/1	Bearings, Sleeve, Plain, Self-Lubricating, 325°F	Entire document.	MIL-B-81934
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Second Tier

MIL-C-5541 <u>3/</u>	Chemical Conversion Coatings on Aluminum and Aluminum Alloys	Classification, requirements and quality assurance provisions.	MIL-B-81934/1
MIL-H-6875	Heat Treatment of Steel, Process for	Classification, requirements and quality assurance provisions for Class D, condition H-1150 (17-4PH).	MIL-B-81934/1
MIL-A-8625 <u>3/</u>	Anodic Coatings, for Aluminum and Aluminum Alloys	Classification, requirements and quality assurance provisions for type I or II.	MIL-B-81934/1
MIL-B-81934	Bearings, Sleeve, Plain and Flanged, Self-Lubricating, General Specification for	Entire document.	MIL-B-81934/1
AMS 5643	Steel Bars, Forgings, Tubing and Rings, Corrosion Resistant 16CR-4.0Ni-0.30(Cb+Ta)-4.0Cu, Solution Heat Treated	Composition, condition.	MIL-B-81934/1

3/ The applicable portion of either MIL-C-5541 or MIL-A-8625, type I or II, may be used.

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
QQ-P-35	Passivation Treatments for Corrosion Resistant Steel	Classification, requirements and quality assurance provisions.	MIL-B-81934/1
<u>Third Tier</u>			
MIL-C-5541	Chemical Conversion Coatings on Aluminum and Aluminum Alloys	Class IA, application (brush), chemical coatings, appearance.	MIL-A-8625
MIL-C-81706	Chemical Conversion Materials for Coating Aluminum and Aluminum Alloys	Any QPL item. Any QPL item using method B (for MIL-A-8625).	MIL-C-5541 MIL-A-8625
FED-STD-141	Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing.	Method 6192.1.	MIL-A-8625
QQ-A-200/3 <u>4/</u>	Aluminum Alloy 2024, Bar, Rod, Shapes, Tube and Wire, Extruded	Classification, requirements and quality assurance provisions.	MIL-B-81934/1
QQ-A-225/6 <u>4/</u>	Aluminum Alloy 2024, Bar, Rod, and Wire; Rolled, Drawn or Cold Finished	Classification, requirements and quality assurance provisions.	MIL-B-81934/1
QQ-P-416	Plating, Cadmium (Electrodeposited)	Classification, requirements and quality assurance provisions.	MIL-B-81934/1
ANSI/ASME B46.1	Surface Texture, Surface Roughness, Waviness and Lay	Roughness, average (Ra), roughness average value (Ra) from continuously averaging meter readings, designation of surface characteristics, stylus type instruments.	MIL-B-81934/1

4/ The applicable portion of either QQ-A-200/3 or QQ-A-225/6 may be used.

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
QQ-A-200	Aluminum Alloy 2024 Bar, Rod, Shapes, Structural Shapes, Tube and Wire, Extruded	Heat treatment, test procedures.	QQ-A-200/3
QQ-A-225	Aluminum and Aluminum Alloy Bar, Rod, Wire, or Special Shapes; Rolled, Drawn or Cold Finished; General Specification for	Heat treatment, test procedures.	QQ-A-255/6
MIL-S-5002	Surface Treatments and Inorganic Coatings for Metal Surfaces of Weapon Systems	Requirement for cleaning.	QQ-P-35 QQ-P-416
O-N-350	Nitric Acid, Technical	Requirements.	QQ-P-35
O-S-595	Sodium Dichromate, Dihydrate, Technical	Requirements.	QQ-P-35
MIL-STD-753	Corrosion-Resistant Steel Parts; Sampling, Inspection and Testing for Surface Passivation	Water immersion test method 100.	QQ-P-35
ASTM B117 (Replaces FED-STD-151, Method 811.1)	Standard Method of Salt Spray (Fog) Testing	Entire document except see MIL-A-8625 for position of significant surface (for MIL-A-8625).	MIL-A-8625 QQ-P-35

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
ASTM E3	Standard Methods of Preparation of Metallographic Specimens	Entire document.	MIL-H-6875
ASTM E8	Standard Methods of Tension Testing of Metallic Materials	Testing machines, test specimens, tensile strength.	MIL-H-6875
ASTM E18	Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials	General description and test procedure for Rockwell hardness tests.	MIL-H-6875
ASTM A255	Standard Method of End-Quench Test for Hardenability of Steel	Entire document.	MIL-H-6875
ASTM E384	Standard Test Method for Micro-hardness of Materials	Test procedure.	MIL-H-6875
ASTM B137 5/	Standard Method for Measurement of Weight of Coating on Anodically Coated Aluminum	Entire document.	MIL-A-8625

5/ The applicable portion of either ASTM B137 or MIL-A-8625 may be used.

The remaining third tier documents, tiered to MIL-P-81934/1, are for guidance and information.

First Tier (22 of 24 Documents)

MIL-B-81934/2	Bearings, Sleeve, Flanged, Self-Lubricating, 325°F	Entire document.	MIL-B-81934
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Second Tier

MIL-C-5541 6/	Chemical Conversion Coatings on Aluminum and Aluminum Alloys	Classification, requirements and quality assurance provisions.	MIL-B-81934/2
MIL-H-6875	Heat Treatment of Steel, Process for	Classification, requirements and quality assurance provisions for Class D, condition H-1150 (17-4 PH)	MIL-B-81934/2

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
MIL-A-8625 <u>6/</u>	Anodic Coatings, for Aluminum and Aluminum Alloys	Classification, requirements and quality assurance provisions for type I or II.	MIL-B-81934/2
<u>6/</u> The applicable portion of either MIL-C-5541 or MIL-A-8625, type I or II, may be used.			
MIL-B-81934	Bearings, Sleeve, Plain and Flanged, Self-Lubricating, General Specification for	Entire document.	MIL-B-81934/2
AMS 5643	Steel Bars, Forgings, Tubing and Rings, Corrosion Resistant 16CR-4.0Ni-0.30(Cb+Ta)-4.0Cu, Solution Heat Treated	Composition, condition.	MIL-B-81934/2
QQ-P-35	Passivation Treatment for Corrosion Resisting Steel	Classification, requirements and quality assurance provisions.	MIL-B-81934/2
QQ-A-200/3 <u>7/</u>	Aluminum Alloy 2024, Bar, Rod, Shapes, Tube and Wire, Extruded	Classification, requirements and quality assurance provisions.	MIL-B-81934/2
QQ-A-225/6 <u>7/</u>	Aluminum Alloy 2024, Bar, Rod and Wire; Rolled, Drawn or Cold Finished	Classification, requirements and quality assurance provisions.	MIL-B-81934/2
<u>7/</u> The applicable portion of either QQ-A-200/3 or QQ-A-225/6 may be used.			
QQ-P-416	Plating, Cadmium (Electrodeposited)	Classification, requirements and quality assurance provisions.	MIL-B-81934/2
ANSI/ASME B46.1	Surface Texture, Surface Roughness, Waviness and Lay	Roughness, average (Ra), roughness average value (Ra) from continuously averaging meter readings, designation of surface characteristics, stylus type instruments.	MIL-B-81934/2

MIL-B-81934B

TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
<u>Third Tier</u>			
MIL-C-5541	Chemical Conversion Coatings on Aluminum and Aluminum Alloys	Class IA, application (brush), chemical coatings, appearance.	MIL-A-8625
MIL-C-81706	Chemical Conversion Materials for Coating Aluminum and Alloys	Any QPL item. Any QPL item using method B (for MIL-A-8625).	MIL-C-5541 MIL-A-8625
FED-STD-141	Paint, Varnish, Lacquer and Related Materials: Methods of Inspection, Sampling and Testing	Abrasion resistance (taber resistance) method 6192.1.	MIL-A-8625
QQ-A-200	Aluminum Alloy 2024, Bar, Rod, Shapes, Structural Shapes, Tube and Wire, Extruded	Heat treatment, test procedures.	QQ-A-200/3
QQ-A-225	Aluminum and Aluminum Alloy Bar, Rod, Wire, or Special Shapes; Rolled, Drawn, or Cold Finished; General Specification for	Heat treatment, test procedures.	QQ-A-255/6
MIL-S-5002	Surfaces Treatments and Inorganic Coatings for Metal Surfaces of Weapons Systems	Cleaning.	QQ-P-35 QQ-P-416
O-N-350	Nitric Acid, Technical	Requirements.	QQ-P-35
O-S-595	Sodium Dichromate, Dihydrate, Technical	Requirements.	QQ-P-35
MIL-STD-753	Corrosion-Resistant Steel Parts, Sampling, Inspection and Testing for Surface Passivation	Water immersion test method 100.	QQ-P-35

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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
ASTM B117 (Replaces FED-STD-151, Method 811.1)	Standard Method of Salt Spray (Fog) Testing	Entire document except see MIL-A-8625 for position of significant surface (for MIL-A-8625).	MIL-A-8625 QQ-P-35
ASTM E3	Standard Methods of Preparation of Metallographic Specimens	Entire document.	MIL-H-6875
ASTM E8	Standard Methods of Tension Testing of Metallic Materials	Testing machines, test specimens, tensile strength.	MIL-H-6875
ASTM E18	Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials	General description and test procedure for Rockwell hardness tests.	MIL-H-6875
ASTM A255	Standard Method of End-Quench Test for Hardenability of Steel	Entire document.	MIL-H-6875
ASTM E384	Standard Test Method for Micro-hardness of Materials	Test procedure.	MIL-H-6875
ASTM B137 <u>8/</u>	Standard Method for Measurement of Weight of Coating on Anodically Coated Aluminum	Entire document.	MIL-A-8625

8/ The applicable portion of either ASTM B137 or MIL-A-8625 may be used.

The remaining third tier documents, tiered to MIL-B-81934/2, are for guidance and information.

First Tier (23 of 24 Documents)

ANSI/ASME B46.1	Surface Texture, Surface Roughness, Waviness and Lay	Roughness, average (Ra), roughness average value (Ra) from continuously averaging meter readings, designation of surface characteristics, stylus type instruments.	MIL-B-81934
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TABLE IV. Required documents and corresponding applicability data (continued).

DOCUMENT NUMBER:	DOCUMENT TITLE:	APPLICABILITY:	REFERENCED BY:
<u>First Tier (24 of 24 Documents)</u>			
	Uniform Freight Classification Rules	Due to the extensive number of variables associated with packaging, applicable sections of packaging documents cannot be identified prior to acquisition. All packaging requirements of the zero tier document must be met, unless otherwise specified in the contract.	MIL-B-81934

MIL-B-81934B

MIL-B-81934B

Custodians:

Navy - AS
Air Force - 99
Army - AV

Preparing activity:

Navy - AS
(Project No. 3120-0699)

Reviewer activities:

Navy - SH
Air Force - 84
Army - AR, AT, MI
DLA - IS

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or 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.

I RECOMMEND A CHANGE:		1. DOCUMENT NUMBER MIL-B-81934B	2. DOCUMENT DATE (YYMMDD) 3 May 1991
3. DOCUMENT TITLE BEARINGS, SLEEVE, PLAIN AND FLANGED, SELF-LUBRICATING, GENERAL SPECIFICATION FOR			
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)			
5. REASON FOR RECOMMENDATION			
6. SUBMITTER			
a. NAME (Last, First, Middle Initial)		b. ORGANIZATION	
c. ADDRESS (Include Zip Code)		d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON (if applicable)	7. DATE SUBMITTED (YYMMDD)
8. PREPARING ACTIVITY			
a. NAME Commanding Officer Naval Air Engineering Center		b. TELEPHONE (Include Area Code) (1) Commercial (908) 323-7705 (2) AUTOVON 624-7705	
c. ADDRESS (Include Zip Code) SESD, Code 53 Lakehurst, NJ 08733-5100		IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340	