

30 December 1950

Superseding  
USAF Specification  
No. 10302-A  
21 September 1948

## MILITARY SPECIFICATION

## ROD, WELDING, ZINC ALLOY

## 1. SCOPE AND CLASSIFICATION

1.1 Scope.- This specification covers requirements for zinc alloy rods for gas welding.

1.2 Classification.- The rods covered by this specification shall be of the composition and dimensions as specified herein.

## 2. APPLICABLE SPECIFICATIONS AND OTHER PUBLICATIONS

2.1 Specifications.- The following specifications, of the issue in effect on date of invitation for bids, form a part of this specification:

## Federal Specifications

QQ-M-151	Metals; General Specification for Inspection of
UU-P-268	Paper; Kraft, Wrapping

## Military Specifications

JAN-P-108	Packaging and Packing for Overseas Shipment - Boxes, Fiberboard, (V-Board and W-Board), Exterior and Interior
JAN-P-115	Packaging and Packing for Overseas Shipment - Compound, Sealing, Dipcoating
JAN-P-121	Barrier-Materials; Greaseproof
JAN-P-128	Packaging and Packing for Overseas Shipment - Tape; Water Resistant, Gummed

## U. S. Army Specifications

94-40645	Marking; Exterior, Domestic and Export Shipment, By Contractors
----------	--

(Air Force.- Copies of this specification, Federal, Military and U. S. Army specifications may be obtained upon application to the Commanding General, Air Materiel Command, Wright-Patterson Air Force Base, Dayton, Ohio. Both the title and identifying number or symbol should be stipulated when ordering copies.)

- 2 -

### 3. REQUIREMENTS

3.1 Chemical Composition.- The chemical composition of the rods shall conform to the requirements shown in Table I.

TABLE I  
Chemical requirements

<u>Element</u>	<u>Percent</u>
Aluminum	3.5 - 4.5
Copper	3.5 (Max.)
Magnesium	0.02 - 0.10
Iron	0.10 (Max.)
Lead	0.007 (Max.)
Cadmium	0.005 (Max.)
Tin	0.005 (Max.)
Zinc	Remainder

3.2 Dimensions.- The length of each rod shall not be less than 12 inches. The diameter shall be 1/8 inch or 3/16 inch as specified.

3.3 Weldability.- The rod shall demonstrate good weldability and shall flow smoothly without unusual bubbling. The deposited metal shall be free of defects as such as porosity, voids, and cracks.

3.4 Workmanship.- All rods shall be straight, uniform in quality and condition, free from pipes, seams, segregations, inclusions or other regularities which affect the weldability of the rod or the properties of the deposited metal.

### 4. SAMPLING, INSPECTION, AND TEST PROCEDURES

4.1 Unless otherwise specified, contractor's records of all inspection work and tests, giving the results of tests required to determine compliance with the requirements and tests specified herein, shall be kept complete and shall be available to the Government representative at all times. The tests shall be accomplished on articles to be supplied on the contract or order. The record of report of inspection and tests shall be signed or approved by a responsible person specifically assigned by the contractor. Contractors not having laboratory testing facilities satisfactory to the Government shall engage the service of a commercial testing laboratory acceptable to the Government inspector, capable of conducting tests to determine compliance with all specification requirements.

4.2 Previous Acceptance.- Previous acceptance or approval of material during course of manufacture shall in no case be construed as a guarantee of acceptance of the finished product.

**4.3 Inspection at Contractor's Plant.-** When inspection is made at the contractor's plant, all tests specified herein shall be performed by the contractor under the supervision of the Government Inspector to determine compliance with all requirements in the specification.

**4.4 Inspection.-**

**4.4.1 Inspection Sampling.-** The samples selected in accordance with Paragraph 4.4.1.2 shall be inspected for conformance to the requirements in 3.2, 3.3 and 3.4.

**4.4.1.1 Chemical Analysis.-** The samples for chemical analyses shall be taken in accordance with the procedure given in Specification QQ-M-151.

**4.4.1.2 Sampling Tests.-** The number of rods sampled for chemical composition shall not be less than one rod for every size in each 500 pounds or less. An equal number of samples shall be selected to determine conformance to the requirements in 4.4.1.

**4.5 Inspection Test Methods.-**

**4.5.1 Weldability Test.-** The weldability test shall consist of the manufacture of a butt weld approximately four inches long between two pieces of zinc base die casting alloys not less than 1/8 inch or more than 1/4 inch in thickness, or the filling in of holes and grooves in castings to give an inlay which forms a homogeneous mass with the base metal. The acceptability of the welding rod shall be determined from observations on its characteristics during the fabrication of the weld.

**4.6 Rejections.-** Failure of the rods selected in Paragraph 4.4.1.2 to meet the requirements of this specification shall be cause for rejection of the lot represented.

**4.7 Retests.-** Rejected rod, welding, zinc alloy shall not be resubmitted for inspection without furnishing full particulars concerning previous rejection and measures taken to overcome the defects.

**5. PREPARATION FOR DELIVERY**

**5.1 General.-** The requirements specified herein apply only to direct purchase by or direct shipments to the Government.

**5.2 Unit Packaging.-** Five (5) lbs. of rods shall be wrapped in grade "A" paper conforming to Specification JAN-B-121 and overwrapped in grade "C" paper conforming to Specification JAN-B-121 and dip coating sealing of unit package with Specification JAN-P-115 compound. The unit package shall be over-wrapped in kraft paper conforming to Specification UU-P-268 and all closures sealed with tape conforming to Specification JAN-P-128.

**5.2.1 Intermediate Packaging.-** Five (5) unit packages shall be packed in a corrugated or solid fiberboard box (regular slotted type) in accordance with Specification JAN-P-108. The fiberboard box shall have a minimum Mullen Test of 275 lbs.

5.3 Packing.- Unless otherwise specified, all items shall receive domestic packing. Shipping containers shall contain the same number of packages, shall be uniform in size and snugly packed. The gross weight of the fully packed exterior container shall not exceed 200 pounds.

5.3.1 Domestic Packing.- Unless otherwise specified, packages shall be over-packed in substantial commercial shipping containers constructed to insure acceptance by common or other carrier for safe transportation at the lowest rate to the point of delivery. Except as specified herein, the container shall conform to the requirements of the Consolidated Freight Classification Committee in effect at the time of shipment, except that fiberboard, when used, shall have a minimum Mullen Test of 275 pounds. Containers shall be able to withstand storage, rehandling, and reshipment without the necessity for repacking.

5.3.2 Overseas Packing.- Unless otherwise specified, the packages shall be packed in cleated plywood shipping boxes or nailed wood shipping boxes, conforming to Specification JAN-P-105 or JAN-P-106 respectively.

#### 5.4 Marking and Labeling.-

5.4.1 Unit Packages.- Each unit package shall be durable and legibly marked with the following information in such a manner that it shall be possible to identify unit package before wax dip and after wrapping with draft paper. Each unit package shall be marked in such a manner that the inner markings shall not be damaged when the packages are opened.

Rod, Welding, Zinc Alloy  
 Specification No. MIL-R-4208  
 Stock No.  
 Size (diameter)  
 Name of Manufacturer  
 Name of Contractor (if different from Manufacturer)  
 Quantity  
 Contractor Order No.

5.4.1.2 The label shall be attached to unit package in such a manner that all markings will be visible through the dip-coating.

5.4.2 Intermediate Packages.- Each intermediate package shall be marked as specified for unit packages.

5.4.3 Shipping Containers.- Each exterior shipping container shall be marked as specified for unit packages; shipment for the Air Force shall be marked in accordance with applicable requirements of U. S. Army Specification No. 94-40645.

## 6. NOTES

6.1 Intended Use.- The rods covered by this specification are intended for use in the repair welding of zinc alloy die casting.

6.2 Ordering Data.- The invitation for bids should specify the size and quantity of rods. Special packing or packaging not covered in Section 5 should be specified also.

- 5 -

**PAT ENT NOTICE:** When Government drawings, specifications, 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; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.