

Administrative Changes to OC-ALCI21-443, *Identification of Welding Material*

OPR: 76 MXSS/MXDTAA

Certified by: “76 MXSG/DD (Mr. David Goss)” is hereby changed to “76 MXSG/DD (Bruno Morf)”.

References throughout to “AFI 21-101\_AFMCSUP1,” are hereby changed to “AFSCMANI21-102\_OC-ALCSUP”.

13 January 2017

**BY ORDER OF THE COMMANDER  
OKLAHOMA CITY AIR LOGISTICS  
COMPLEX**

**OKLAHOMA CITY AIR LOGISTICS  
COMPLEX INSTRUCTION 21-443**

**24 SEPTEMBER 2014**



**Maintenance**

**IDENTIFICATION OF  
WELDING MATERIAL**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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Certified by: 76 MXSG/DD  
(Mr. David Goss)

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This instruction implements and extends the guidance of AFI 21-101\_AFMCSUP1, *Aircraft and Equipment Maintenance Management*, procedures governing identification of welding material responsibilities within the Oklahoma City Air Logistics Complex (OC-ALC). This OC-ALC instruction establishes procedures and responsibilities for submission of welding wire and welding rod to the 76th Maintenance Support Squadron, Analytical Chemistry Section (76 MXSS/MXDtaa) for chemical analysis. This instruction applies to the 76th Aircraft Maintenance Group (76 AMXG), the 76th Propulsion Maintenance Group (76 PMXG), the 76th Commodities Maintenance Group (76 CMXG), and 76 MXSS/MXDtaa. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed IAW the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at <https://www.my.af.mil/afirms/afirms/afirms/rims.cfm> or as required by Title V operating permit. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional's chain of command.

**SUMMARY OF CHANGES**

This instruction has been updated to reflect administrative changes of 76 MXW to OC-ALC nomenclatures. AFMC Form 137, *Routed Order (Project Directed)*, is obsolete and AFMC Form 127, *Routed Order*, is used in its place. This publication should be read in its entirety.

**1. Scope.** This instruction covers definitions, references, responsibilities, and color coding for welding wire and welding rod identification. Precious metals are excluded from this instruction.

**2. Definitions.**

2.1. **Tab Marking.** A plastic label bearing the specification number, including type, class and or grade designation, and the prefix indicating the source of the specification. Tab marking is commonly referred to as flag tagging.

2.2. **Permanent Marking.** Marking which will ensure identification during the normal service life of the item.

2.3. **Temporary Marking.** Marking which will ensure identification during ordinary handling and storage of items prior to use.

2.4. **Color Code.** The identification and marking of material by a series of color bands where a color represents a number.

**3. Responsibilities.**

**3.1. Production Maintenance Groups (76 AMXG/76 PMXG/76 CMXG) will:**

3.1.1. Check all welding wire and welding rods upon receipt from the supplier. Each welding wire spool shall be permanently and legibly marked on the outer face of one or both flanges with not less than the following information: Alloy name, specification number, size, quantity or weight, heat number (if applicable), and manufacturer's identification. Welding rods shall be suitably packaged to ensure against damage during shipment and be legibly marked so as to be visible from the outside of each unit package with not less than the following information: specification number, manufacturer's identification, size/weight, and lot, control, or heat number. Welding wire and rod not conforming to this requirement shall have the entire lot marked as non-conforming, segregated, and returned to the supplier.

3.1.2. Submit samples of welding wire/rod to the Analytical Chemistry Section (76 MXSS/MXDTAA) for chemical analysis, when:

3.1.2.1. Identification markings are not legible or not present.

3.1.2.2. A non-conformance is suspected.

3.1.2.3. Quality verification is desired. Properly completed Air Force Materiel Command (AFMC) Form 127, *Routed Order*, must be attached to the sample.

3.1.3. Upon receipt of laboratory report from 76 MXSS/MXDTAA, each spool of welding wire shall be permanently and legibly marked on the outer face of one or both flanges with not less than the following information: Alloy name, specification number, "76 MXSS/MXDTAA TESTED," and laboratory report date. Each package of welding rods shall be permanently and legibly marked with not less than the following information: Specification number, "76 MXSS/MXDTAA TESTED," and laboratory report date. A copy of the 76 MXSS/MXDTAA laboratory report that the material was tested will be maintained by the using organization.

3.1.4. Identify individual storage bins of welding wire/rod with the nomenclature and specification number.

3.1.5. Store in a separate area marked “unknown material,” when material is found for which correct identification is uncertain. Unknown material shall be marked with the date it is placed in unknown material area and shall be properly disposed of within 30 days. A completed, Department of Defense (DD) Form 1577, *Unserviceable (Condemned) Tag Material*, or DD Form 1577-1, *Unserviceable (Condemned) Tag-Material*, shall be affixed to the unknown welding material.

3.1.6. Return material to supplier in cases where material is found to be misidentified or unsuitable for use. Identify any non-conforming material using laboratory report from 76 MXSS/MXD TAA and mark as “Non-conforming Material.”

**3.2. The Analytical Chemistry Section (76 MXSS/MXD TAA) will:**

3.2.1. Perform chemical analysis to determine the positive identification of the welding material to applicable specification requirements.

3.2.2. Prepare a written laboratory report in memorandum format with the proper identification of the welding material and notify the customer when the report is completed. A completed copy of AFMC Form 127 will be attached. Requesting organization will pick up report and sample from 76 MXSS/MXD TAA, building 3001, post I-63. When priority testing is requested, 76 MXSS/MXD TAA will telephone requesting organization that report is ready for pickup. Reports will be mailed using base distribution upon request.

**4. Color Coding for Identification.**

4.1. Individual cut lengths of bare welding wire shall be marked using color bands as per Aerospace Material Specification (AMS) 2819B, *Identification, Welding Wire Direct Color Code System*, tab marked per AMS 2816W, *Identification Welding Wire, Tab Marking Method*, or permanently marked per AS 478N, *Identification Marking Methods*. Welding wire presently on hand and identified by using the previous color code or individually tabbed or permanently marked will be consumed as is, without re-identification. Each color represents a number that is used to designate the AMS specification. The first color band shall be approximately ¼ inch from one end of the wire and shall be ½ inch wide. Each succeeding band shall be ¼ inch wide with a ¼ inch space between bands representing succeeding numbers of the AMS specification in the proper order. The total length of the color code shall not exceed 2 ¼ inches from one end of the wire. Only one set of color bands shall be applied to each length of wire. The bands shall extend completely around the circumference of the wire. Numbers used in the marking code represent a color as indicated in Table 4.1. below.

**Table 1. Marking Code**

0- Yellow	4- Gray	8- Red
1- Black	5- Green	9- White
2- Blue	6- Orange	
3- Brown	7- Violet	

4.2. Spools of welding wire will not be color marked, but shall be permanently and legibly marked on the outer face of one or both flanges as described in paragraph 4.1.

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Commander, Oklahoma City Air Logistics Complex

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 21-101\_AFMCSUP1, *Aircraft and Equipment Maintenance Management*, 26 April 2012

AFMAN 33-363, *Management of Records*, 1 March 2008

AS 478N, *Identification, Marking Methods*, July 2007

AMS 2816W, *Identification Welding Wire, Tab Marking Method*, June 2008

AMS 2819B, *Identification, Welding Wire, Direct Color Code System*, February 2008

ARP 4926A, *Alloy Verification and Chemical Composition Inspection of Welding Wire*, April 2005

76 MXSGI 61-200, *Quality Instructions for Chemical Testing Functions*, 14 April 2014

***Prescribed Forms***

None

***Adopted Forms***

DD Form 1577, *Unserviceable (Condemned) Tag Material*

DD Form 1577-1, *Unserviceable (Condemned) Tag-Material*

AF Form 847, *Recommendation for Change of Publication*

AFMC Form 127, *Routed Order*

***Abbreviations and Acronyms***

**76 AMXG**—76th Aircraft Maintenance Group

**76 PMXG**—76th Propulsion Maintenance Group

**76 CMXG**—76th Commodities Maintenance Group

**76 MXSG**—76th Maintenance Support Group

**76 MXSS/MXDTAA**—76th Maintenance Support Squadron, Analytical Chemistry Section

**76 MXSS/MXDTAE**—76th Maintenance Support Squadron, Lab Support Section

**AF**—Air Force

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFMC**—Air Force Materiel Command

**AFMCI**—Air Force Materiel Command Instruction

**AFMCSUP**—Air Force Materiel Command Supplement

**AFRIMS**—Air Force Records Information Management System

**AMS**—Aerospace Material Specification

**AS**—Aerospace Standard

**DD**—Department of Defense (when used with forms)

**IAW**—In Accordance With

**OC**—ALC —Oklahoma City Air Logistics Complex

**OC**—ALCI —Oklahoma City Air Logistics Complex Instruction

**OPR**—Office of Primary Responsibility

**RDS**—Records Disposition Schedule

*Terms*

**Production Maintenance Groups**—76 AMXG/76 PMXG/76 CMXG