BY ORDER OF THE COMMANDER
OKLAHOMA CITY AIR LOGISTICS
COMPLEX

OKLAHOMA CITY AIR LOGISTICS
COMPLEX INSTRUCTION 21-143

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Maintenance

IDENTIFICATION OF WELDING MATERIAL

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements and extends the guidance of Air Force Materiel Command Instruction 21-100 Volume 2_Air Force Sustainment Center Supplement Oklahoma City Air Logistics Complex Supplement (AFMCI 21-100V2_AFSCSUP_OC-ALCSUP), *Depot Maintenance Production* procedures governing welding material responsibilities within the Oklahoma City Air Logistics Complex (OC-ALC). This instruction establishes procedures and responsibilities for submission of welding wire and welding rod to the 76th Maintenance Support Squadron/Physical Sciences Flight (76 MXSS/MXDTA), performed in the Analytical Chemistry Section, 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/MXDTA. This publication may be supplemented at any level, but all supplements must be routed to OPR for coordination prior to certification and approval. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) using the Department of the Air Force (DAF) Form 847, *Recommendation for Change of Product*; route DAF Forms 847 from the field through appropriate functional's chain of command. Requests for waivers must be submitted to the OPR listed above for consideration and approval. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Instruction 33-322, *Records Management and Information Governance Program*, and disposed of IAW the Air Force Disposition Schedule, which is located in the Air Force Records Information Management System.

SUMMARY OF CHANGES

This instruction has been substantially revised and must be reviewed in its entirety. Changes include implementing instructions, office symbols, forms, and references.

Chapter 1

RESPONSIBILITIES

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

1.1.1. Check all welding wire and welding rods upon receipt from the supplier. Each welding wire spool must be permanently and legibly marked on the outer face of one or both flanges with no less than the following information: Alloy name, specification number, size, quantity or weight, heat number (if applicable), manufacturer's identification, and EESOH-MIS label. Welding rods will be suitably packaged to ensure against damage during shipment and be legibly marked to be visible from the outside of each unit package with no less than the following information: specification number, manufacturer's identification, size/weight, and lot, control, or heat number. If new lots of welding wire and rod are received as not conforming to this requirement, then the entire lot must be marked as non-conforming, segregated, and returned to the supplier.

1.1.2. Submit samples of welding wire/rod to the Analytical Chemistry Section (76MXSS/MXDTA) for chemical analysis; for items that have been accepted and are in use on base:

1.1.2.1. Identification markings are not legible or not present.

1.1.2.2. A non-conformance is suspected.

1.1.2.3. Quality verification is desired. Properly completed Air Force Sustainment Center (AFSC) Form 137, *Routed Order,* must be attached to the sample.

1.1.3. Upon receipt of laboratory report from the Analytical Chemistry Section (76 MXSS/MXDTA), each spool of welding wire will be permanently and legibly marked on the outer face of one or both flanges with no less than the following information: Alloy name, specification number, "Analytical Chemistry Section (76 MXSS/MXDTA)" and laboratory report date. Each package of welding rods will be permanently and legibly marked with no less than the following information: Specification number, "Analytical Chemistry Section (76 MXSS/MXDTA)," and laboratory report date. A copy of the Analytical Chemistry Section (76 MXSS/MXDTA) laboratory report that the material was tested will be maintained by the using organization.

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

1.1.5. Store in a separate area marked "unknown material," when material is found for which correct identification is uncertain. Unknown material will be marked with the date it is placed in unknown material area and must 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,* must be affixed to the unknown welding material.

1.1.6. 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 Analytical Chemistry Section (76 MXSS/MXDTA) and mark as "Non-conforming Material."

1.2. The Analytical Chemistry Section (76 MXSS/MXDTA) will:

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

1.2.2. 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 AFSC Form 137 will be attached. Requesting organization will pick up report and sample from Analytical Chemistry Section (76 MXSS/MXDTA), Building 3001, Post 2J-63. When priority testing is requested, Analytical Chemistry Section (76 MXSS/MXDTA) will telephone requesting organization that report is ready for pickup. Reports will be mailed using base distribution upon request.

Chapter 2

COLOR CODING FOR IDENTIFICATION

2.1. Individual cut lengths of bare welding wire must be: Marked using color bands per Aerospace Material Specification (AMS) 2819C*, Identification, Welding Wire Direct Color Code System;* tab marked per AMS 2816W, *Identification Welding Wire, Tab Marking Method;* or permanently marked per Aerospace Standard (AS) 478S, *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 will be approximately 1/4-inch from one end of the wire and will be 1/2-inch wide. Each succeeding band will be 1/4 inch wide with a 1/4-inch space between bands representing succeeding numbers of the AMS specification in the proper order. The total length of the color code will not exceed 2 1/4 inches from one end of the wire. Only one set of color bands will be applied to each length of wire. The bands will extend completely around the circumference of the wire. Numbers used in the marking code represent a color as indicated in **Table 2.1** below.

Table 2.1. Marking Code.

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

2.2. Spools of welding wire will not be: Color marked but will be permanently and legibly marked on the outer face of one or both flanges as described in **paragraph 2.1**.

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Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AS 478S, *Identification, Marking Methods*, 2 November 2022

AMS 2816W, *Identification Welding Wire, Tab Marking Method*, 21 October 2013

AMS 2819C, Identification*, Welding Wire, Direct Color Code System*, 12 January 2018

ARP 4926B, *Alloy Verification and Chemical Composition Inspection of Welding Wire*, 14 August 2018

AFI 33-322, *Records Management and Information Governance Program*, 23 March 2020

DAFMAN 90-161, *Publishing Processes and Procedures*, 18 October 2023

DAFMAN 32-7002_OC-ALCSUP, *Environmental Compliance and Pollution Prevention*, 20 November 2025

AFMCI21-100V2_AFSCSUP_OC-ALCSUP, *Depot Maintenance Production*, 27 March 2026

76 MXSGI 61-200, *Quality Instructions for Chemical Testing*, 18 January 2023

Prescribed Forms

None

Adopted Forms

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

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

DAF Form 847, *Recommendation for Change of Publication*

AFSC Form 137, *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/MXDTA—76th Maintenance Support Squadron/Physical Sciences Flight

AFI—Air Force Instruction

AFSC—Air Force Sustainment Center

AFSCSUP—Air Force Sustainment Center Supplement

AMS—Aerospace Material Specification

AS—Aerospace Standard

DAFMAN—Department of the Air Force Manual

DD—Department of Defense

IAW—In Accordance With

OC–ALC—Oklahoma City Air Logistics Complex

OC-ALCI—Oklahoma City Air Logistics Complex Instruction

OC-ALCSUP—Oklahoma City Air Logistics Supplement

OPR—Office of Primary Responsibility

Terms

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

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

Production Maintenance Groups—76 AMXG, 76 PMXG and 76 CMXG

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.

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