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AEROSPACE MATERIAL SPECIFICATION

SAE AMS 2813F

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Superseding AMS 2813E

Packaging and Marking of Packages of Welding Wire
Standard Method

1. SCOPE:

This specification covers spooling and packaging of bare welding wire to ensure cleanliness but with minimum environmental protection, spool sizes and weights of spooled wire, and package weights of cut lengths.

2. APPLICABLE DOCUMENTS:

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been canceled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 U.S. Government Publications:

Available from DODSSP, Subscription Services Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

MIL-W-10430 Welding Rods and Electrodes, Preparation for Delivery of

3. TECHNICAL REQUIREMENTS:

3.1 Preparation:

Prior to winding on spools or cutting to length, wire shall be uncoiled for cleaning and shall be rendered free of dirt, grease, oil, corrosion, and other surface contamination which would interfere with welding.

3.2 Packaging:

3.2.1 Spooled Wire:

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3.2.1.1 Spools shall be of such materials and construction as to provide sufficient strength and rigidity to prevent damage to, or distortion of, the wire during normal handling and use. The materials shall not induce corrosion of the wire and shall electrically insulate the wire from the spindle of the welding machine.

3.2.1.2 Configuration and dimensions of spools shall conform to Figure 1 and Table 1. The size of spool shall be selected on the basis of the alloy and quantity ordered. Each spool shall provide access to approximately 8 inches (203 mm) of wire at the inside end of the coil for sampling purposes; a groove in the outer face of one flange, adjacent to the barrel, is acceptable.

3.2.1.3 Unless otherwise specified in the material specification, wire on each spool shall be one continuous length from the same heat of alloy, except in the case of aluminum and magnesium alloys which are not restricted.

3.2.1.4 Wire shall be furnished on spools containing approximately the ordered spool net weight except that up to 20% of the net weight of any one combination of alloy, wire diameter, and spool size in a shipment may be on spools containing not less than 50% of the ordered spool net weight.

3.2.1.5 Wire shall be closely wound in layers but adjacent turns within a layer need not necessarily be touching; shall be wound so as to avoid producing kinks, waves, and sharp bends; and shall be free to unwind without restriction caused by overlapping or wedging. The outside end of the spooled wire shall be so treated that it may be readily located.

3.2.1.6 Net weight of wire on spools shall be as specified in Table 2 for the alloy type ordered.

3.2.2 Cut Lengths:

3.2.2.1 Containers shall be of such materials and construction as to provide sufficient strength and rigidity to prevent damage to, or distortion of, the wire during normal handling. The materials shall not induce corrosion of the wire.

3.2.2.2 Unless otherwise specified in the material specification, no package shall contain wire from more than one heat of alloy, except in the case of packages of aluminum and magnesium alloys which are not restricted.

3.2.2.3 Wire shall be furnished in standard packages of approximately 5, 10, 25, 50, or 100 pounds (2.3, 4.5, 11.3, 22.7, or 45.3 kg), as ordered.

3.3 Packaging:

3.3.1 Containers of wire shall be packed to ensure that the wire, during shipment and storage, will be protected against mechanical damage, corrosion, dirt, grease, oil, and other contamination detrimental to welding.

3.3.2 Exterior containers of spooled wire shall contain the ordered multiple of standard spool net weights up to a maximum net weight of 120 pounds (54.4 kg).

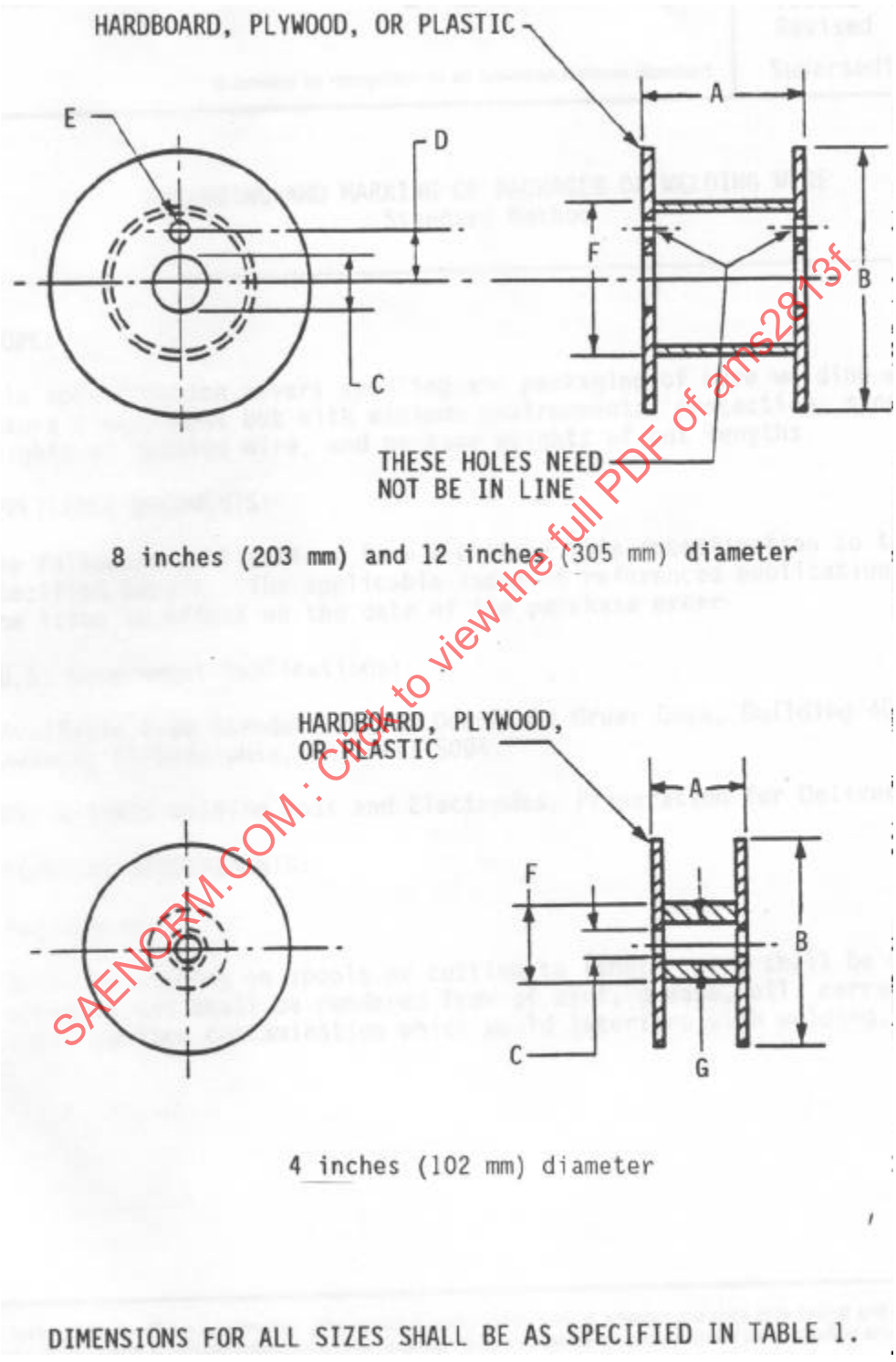

FIGURE 1 - Configuration of Spools

TABLE 1A - Spool Dimensions, Inch/Pound Units

Dimension	Nominal Diameter of Spool 4 Inches	Nominal Diameter of Spool 8 Inches	Nominal Diameter of Spool 12 Inches
(A) Spool Width	1-3/4 ± 1/32	2-1/8 ± 1/32	4 ± 1/16
(B) Flange OD	$4^{+0}_{-1/16}$	$8^{+0}_{-1/4}$	$12^{+0}_{-1/4}$
(C) Spindle Hole Diameter	$0.630^{+0.005}_{-0}$	$2\text{-}1/32^{+1/16}_{-0}$	$2\text{-}1/32^{+1/16}_{-0}$
(D) Peg Hole Placement	--	1-3/4 ± 1/64	1-3/4 ± 1/64
(E) Peg Hole Diameter	--	$7/16^{+0}_{-1/16}$	$7/16^{+0}_{-1/16}$
(F) Barrel OD	Note 1	Note 1	Note 1
(G) Barrel ID	Note 2	--	--

Note 1. Shall be such that swelling or misalignment of the barrel and flanges will not cause interference with the spindle hole.

Note 2. Shall be such as to promote smooth feeding of the wire.

TABLE 1B - Spool Dimensions, SI Units

Dimension	Nominal Diameter of Spool 102 Millimeters	Nominal Diameter of Spool 203 Millimeters	Nominal Diameter of Spool 305 Millimeters
(A) Spool Width	44.4 ± 0.8	54 ± 0.8	102 ± 1.6
(B) Flange OD	$102^{+0}_{-1.6}$	$203^{+0}_{-6.4}$	$305^{+0}_{-6.4}$
(C) Spindle Hole Diameter	$16.0^{+0.13}_{-0}$	$51.6^{+1.6}_{-0}$	$51.6^{+1.6}_{-0}$
(D) Peg Hole Placement	--	44.4 ± 0.4	44.4 ± 0.4
(E) Peg Hole Diameter	--	$11.1^{+0}_{-1.6}$	$11.1^{+0}_{-1.6}$
(F) Barrel OD	Note 1	Note 1	Note 1
(G) Barrel ID	Note 2	--	--

Note 1. Shall be such that swelling or misalignment of the barrel and flanges will not cause interference with the spindle hole.

Note 2. Shall be such as to promote smooth feeding of the wire.

TABLE 2A - Spooled Wire Weight, Inch/Pound Units

Alloy Base	Net Weight, Pounds
Aluminum	1, 5, 10, 12-1/2, 15
Magnesium	3/4, 1, 3, 10
Titanium	1, 5, 10, 15, 20
Copper	1, 10, 25, 50
Steel, Corrosion and Heat Resistant Alloys and Refractory Alloys	1-1/2, 2-1/2, 10, 12, 15, 25, 30 35, 44, 50, 60

TABLE 2B - Spooled Wire Weight, SI Units

Alloy Base	Net Weight, Kilograms
Aluminum	0.45, 2.3, 4.5, 5.7, 6.8
Magnesium	0.3, 0.5, 4.5
Titanium	0.5, 2.2, 4.5, 6.8, 9.1
Copper	0.45, 4.5, 11.3, 22.7
Steel, Corrosion and Heat Resistant Alloys and Refractory Alloys	0.7, 1.1, 4.5, 5.5, 6.8, 11.3, 13.6, 15.9, 20, 22.7, 27.2

3.3.3 Exterior shipping containers of cut lengths shall contain approximately 5, 10, 50, 60, or 100 pounds (2.3, 4.5, 22.7, 27.2 or 45.3), as ordered.

3.3.4 Containers of wire shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the wire to ensure carrier acceptance and safe delivery.

3.3.5 For direct U.S. Military procurement, packaging shall be in accordance with MIL-W-10430, Commercial Level, unless Level A is specified in the request for procurement.

3.4 Marking:

Interior containers of spools and cut lengths and all exterior shipping containers shall be marked as follows:

3.4.1 Interior Containers: Shall be permanently and legibly marked with not less than the following information; for containers of cut lengths, the information may appear on an attached label:

_____ WIRE, WELDING
WIRE SPECIFICATION NUMBER (and revision letter if any) _____
SIZE _____
QUANTITY _____
HEAT NUMBER (If applicable) _____
MANUFACTURER'S IDENTIFICATION _____