AERONAUTICAL
MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 6466

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Revised

STEEL WIRE
5Cr - 0.55Mo
Cold Drawn

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for use as filler metal for welding low alloy steels where response to heat treatment is required in the weld.

3. COMPOSITION:

		Check Analysis Under Min or Over Max	
Carbon	0.10 max	--	0.01
Manganese	0.60 max	--	0.03
Silicon	0.60 max	--	0.05
Phosphorus	0.030 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	4.50 - 6.00	0.10	0.10
Nickel	0.40 max	--	0.03
Molybdenum	0.45 - 0.65	0.05	0.05

4. CONDITION: Unless otherwise specified, wire shall be cold drawn, bright finish, as-drawn temper. Wire shall be furnished on disposable spools for machine welding and in cut straight lengths for manual or other welding operations.

5. TECHNICAL REQUIREMENTS: Material shall be capable of meeting the following requirements:

5.1 Welding: Material shall melt and flow smoothly and evenly during welding and be capable of producing acceptable welds.

5.2 Spooled Wire: Shall conform to the following unless otherwise agreed upon by purchaser and vendor.

5.2.1 Cast: Wire shall have imparted to it a curvature such that a specimen 6 - 8 ft in length, when cut from the spool and suspended freely from its approximate midlength, shall form a circle not less than 15 in. and not greater than 36 in. in diameter (see Fig. 1).

5.2.2 Helix: A specimen cut and suspended as in 5.2.1 and measured between adjacent turns shall show a separation not greater than 4 in. (see Fig. 1).

5.2.3 Layer Winding: 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.

5.2.4 Heat: Wire on each spool shall be of one continuous length from the same heat of material.

6. QUALITY: Wire shall be uniform in quality and condition, clean, sound, smooth, and free from foreign materials and from internal and external imperfections detrimental to welding properties, operation of welding equipment, or properties of the deposited weld metal.

7. SIZES AND TOLERANCES: Unless otherwise specified, wire shall be supplied in the following sizes and to the tolerances shown:

7.1 Diameter:

Form	Nominal Diameter Inch	Tolerance, Inch Plus and Minus
Straight Lengths	3/64, 1/16, 5/64, 3/32, 1/8, 5/32, 3/16	0.002
Spools	0.035, 0.045, 1/16, 5/64, 3/32	0.001

7.2 Length: Straight lengths shall be furnished in 36 in. lengths and shall not vary more than ± 1/4 in. from the length ordered.

8. REPORTS:

8.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report of the results of tests for chemical composition of each heat in the shipment and a statement that the product conforms to the technical requirements of this specification. This report shall include the purchase order number, heat number, material specification number, nominal size, and quantity from each heat.

8.2 Unless otherwise specified, when parts made of this wire or assemblies requiring the use of this welding wire are supplied, the part or assembly manufacturer shall inspect each lot of wire to determine conformance to this specification and shall furnish with each shipment three copies of a report stating that the wire conforms to the requirements of this specification. This report shall include the purchase order number, material specification number, part or assembly number, and quantity.

9. PACKAGING AND MARKING:

9.1 Packaging shall be accomplished in such a manner as to ensure that the wire, during shipment and storage, will be protected against mechanical injury and to ensure cleanliness and dryness of the wire.

9.2 Spools shall be of such materials and construction as to provide adequate strength and rigidity to prevent damage or distortion in normal handling and use and to insulate the wire from the spindle.

9.3 Unless otherwise specified, spool dimensions shall conform to the approximate dimensions shown in Fig. 2. Barrel diameter B shall be such as to permit proper feeding of the wire.

9.4 Unless otherwise specified, wire for machine welding shall be furnished on spools of approximately 20 - 25 lb net weight, except that up to 20% of the net weight of any lot in the shipment may contain spools of net weights as low as 12 lb; wire in straight lengths shall be furnished in standard containers of approximately 5, 10, or 25 lb net weight.

9.5 Each bundle and container and both sides of each spool shall be permanently and legibly marked with the following information:

STEEL WIRE
AMS 6466
SIZE _____
QUANTITY _____
HEAT NUMBER _____
PURCHASE ORDER NUMBER _____
MANUFACTURER'S IDENTIFICATION _____

10. REJECTIONS: Wire not conforming to this specification or to authorized modifications will be subject to rejection.

NOTE. SIMILAR SPECIFICATIONS: ASTM A371-53T, Classification ER 502 is listed for information only and shall not be construed as an acceptable alternate unless all requirements of this AMS are met.