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AEROSPACE MATERIAL SPECIFICATION

AMS 2811

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Submitted for recognition as an American National Standard

IDENTIFICATION
Aluminum and Magnesium Alloy Wrought Products

1. SCOPE: This specification covers procedures for identifying wrought products of aluminum and magnesium alloys.

2. APPLICABLE DOCUMENTS: None.

3. TECHNICAL REQUIREMENTS:

3.1 Bars, Rods, and Wire; Drawn, Rolled, or Cold Finished: Shall be identified as follows:

3.1.1 Each straight bar and rod 0.500 inch (12.70 mm) and over in nominal diameter or least width of flat surface shall be marked in a row of characters recurring at intervals not greater than 40 inches (one metre) with the alloy number, temper, AMS XXXX and applicable Federal (or Military) specification designation, and manufacturer's identification. The inspection lot number shall be included in the row marking or shall be marked near one end (See 3.1.4). The characters shall be legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the product or its performance.

3.1.2 Smaller straight bars, rods, and wire shall be bundled, boxed, or secured on lifts and identified by two durable tags marked with the information of 3.1.1, including the inspection lot number (See 3.1.4) and attached, not farther than 2 feet (610 mm) from each end, to the product in each bundle, box, or lift.

3.1.3 Coiled bar, rod, and wire and spooled wire shall be identified with the information of 3.1.1, including the inspection lot number (See 3.1.4) marked with a durable tag attached to each coil or directly on one flange of each spool.

3.1.4 Omit references to inspection lot number in specifications for all forms of wrought aluminum alloy products in all tempers of alloys other than 2014, 2024, 2124, 2219, 7049, 7050, 7075, 7079, 7175, 7178, and 7475 and for these named alloys not solution and elevated temperature precipitation heat treated, with or without intervening cold work or mechanical stress-relief.

3.2 Sheet and Plate: Shall be identified as follows:

3.2.1. Each sheet and plate shall be marked on one face, in the respective location indicated below, with the alloy number, temper, AMS XXXX and applicable Federal (or Military) specification designation, inspection lot number (See 3.1.4), manufacturer's identification, and nominal thickness. The characters shall be legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the product or its performance.

3.2.1.1 Flat Sheet and Plate Under 6 Inches (152 mm Wide): Shall be marked in one or more lengthwise rows of characters recurring at intervals not greater than 40 inches (one metre). The inspection lot number may appear in the row marking or may appear at only one location on each piece (See 3.1.4).

3.2.1.2 Flat Sheet and Plate 0.375 Inch (9.52 mm) and Under Thick, 6 - 60 Inches (152 -1524 mm), Incl, Wide, and 36 - 200 Inches (914 - 5080 mm) Incl, Long: Shall be marked in lengthwise rows of characters recurring at intervals not greater than 40 inches (one metre), the rows being spaced approximately 6 inches (152 mm) on centers across the width and staggered. Every third row shall show the manufacturer's identification and nominal thickness. The other rows shall show the alloy number, temper, and AMS XXXX and applicable Federal (or Military) specification designation. The inspection lot number may be included in the rows with the alloy number, temper, and specification designations or may appear at only one location on each piece (See 3.1.4).

3.2.1.3 Flat Sheet and Plate Over 0.375 Inch (9.52 mm) Thick, or Over 60 Inches (1524 mm) Wide, or Over 200 Inches (5080 mm) Long: Shall be marked as in 3.2.1.2 or, at vendor's discretion, shall be marked in one or two rows of characters recurring at intervals not greater than 40 inches (one metre) and running around the periphery of the piece. If one row is used, it shall show all information of 3.2.1 except that the inspection lot number may be omitted. If two rows are used, one row shall show the alloy number, temper, and AMS XXXX and applicable Federal (or Military) specification designation; the second row shall show the manufacturer's identification and nominal thickness. The inspection lot number may be included in the line with the manufacturer's identification and nominal thickness or may appear at only one location on each piece (See 3.1.4).

3.2.1.3.1 If peripheral marking is applied to the full piece as produced but partial sheets or plates are supplied, an arrow shall also be applied near one corner indicating the direction of rolling.

3.2.1.4 Coiled Sheet: Shall be marked near both the outside and inside ends of the coil; the markings shall be applied as in 3.2.1 or shall appear on a durable tag or label attached to the coil and marked with the information of 3.2.1. When the sheet is wound on cores, the tag or label may be attached to the core.

3.2.1.5 Circles: Shall be marked with the information of 3.2.1 if the circle is 24 inches (610 mm) or over in nominal diameter. Circles under 24 inches (610 mm) in nominal diameter shall be identified as agreed upon by purchaser and vendor.

3.2.2 If a specification covers only sheet or only plate, change dimensions in the titles of 3.2.1.1, 3.2.1.2, and 3.2.1.3 as appropriate.

3.2.3 Aluminum alloy sheet and plate clad on one face only shall be marked on the bare (unclad) face. The alloy number and temper shall include the words "alclad one side".

3.3 Aluminum Tubing, Drawn: Shall be identified as follows:

3.3.1 Straight Tubes 0.029 Inch (0.74 mm) and Over in Wall Thickness and 0.500 Inch (12.70 mm) and Over in OD, Minor Axis, or Least Width of Flat Surface: Shall be marked in a row of characters recurring at intervals not greater than 40 inches (one metre) with the alloy number, temper, AMS XXXX and applicable Federal (or Military) specification designation, and manufacturer's identification. The inspection lot number shall be included in the row marking or shall be marked near one end (See 3.1.4). The characters shall be legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the tubing or its performance.

3.3.2 Straight Tubes Under 0.029 Inch (0.74 mm) in Wall Thickness or Under 0.500 Inch (12.70 mm) in OD, Minor Axis, or Least Width of Flat Surface: Shall be securely bundled, boxed, or secured on lifts and identified by two durable tags marked with the information of 3.3.1, including the inspection lot number (See 3.1.4), and attached, not farther than 2 feet (610 mm) from each end, to the tubes in each bundle, box, or lift.

3.3.3 Coiled Tubing: Shall be securely bundled and identified with the information of 3.3.1, including the inspection lot number (See 3.1.4), by a durable tag attached to each coil or on the tape used to bind the coil.

3.3.4 In specifications for aluminum alloy hydraulic tubing (identified by inclusion of "HYDRAULIC" in the title), change "0.500 Inch (12.70 mm)" to "0.250 Inch (6.35 mm)" in the titles of 3.3.1 and 3.3.2 above and insert as the second sentence of 3.3.1 the following:

"If tubing is not marked with AMS XXXX, the Federal (or Military) specification designation shall include 'HYD'."

3.4 Extrusions: Shall be identified as follows:

3.4.1 Each straight bar, rod, and tube 0.500 inch (12.70 mm) and over in nominal OD or least width of flat surface and each straight shape with configuration allowing access to a flat surface at least 0.500 inch (12.70 mm) wide, recessed not more than 1/8 inch (3 mm) below the outline of the shape, shall be marked in a row of characters recurring at intervals not greater than 40 inches (one metre) with the alloy number, temper, AMS XXXX and applicable Federal (or Military) specification designation, and manufacturer's identification. The inspection lot number shall be included in the row marking or shall be marked near one end (See 3.1.4). The characters shall be legible, shall be applied using a suitable marking fluid, and sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the extrusions or their performance.

3.4.2 All straight extrusions other than those of 3.4.1 shall be securely bundled, boxed, or secured on lifts and identified by two durable tags marked with the information of 3.4.1, including the inspection lot number (See 3.1.4), and attached, not farther than 2 feet (610 mm) from each end, to the extrusions in each bundle, box, or lift.

3.4.3 Coiled bar, rod, wire, and tubing and spooled wire shall be identified with the information of 3.4.1, including the inspection lot number (See 3.1.4, marked on a durable tag attached to each coil or directly on one flange of each spool).

3.5 Structural Shapes: Shall be identified as follows:

3.5.1 Each shape shall be marked near one end with the alloy number, temper, AMS XXXX and applicable Federal (or Military) specification designation, manufacturer's identification, and inspection lot number (See 3.1.4). The characters shall be legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling. The markings shall have no deleterious effect on the product or its performance.

4. QUALITY ASSURANCE PROVISIONS: Not applicable.

5. PREPARATION FOR DELIVERY: Not applicable.

6. ACKNOWLEDGMENT: Not applicable.

7. REJECTIONS: Product not identified in accordance with this specification, or with modifications authorized by purchaser, will be subject to rejection.