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Standard Terminology Relating to Aluminum- and Magnesium-Alloy Products¹

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1. Scope

1.1 This terminology covers the principal terms and definitions relating to aluminum- and magnesium-alloy products. It is published to encourage uniformity of terminology throughout Committee B-7 product specifications.

1.2 Certain definitions and definitions of terms specific to a standard will remain in the individual standards and will not be included in this terminology. See 3.4.

2. Referenced Documents

2.1 ASTM Standards:

B 26/B 26M Specification for Aluminum-Alloy Sand Castings²

B 80 Specification for Magnesium-Alloy Sand Castings²

B 85 Specification for Aluminum-Alloy Die Castings²

B 90/B 90M Specification for Magnesium-Alloy Sheet and Plate²

B 91 Specification for Magnesium-Alloy Forgings²

B 92/B 92M Specification for Magnesium Ingot and Stick for Remelting²

B 93/B 93M Specification for Magnesium Alloys in Ingot Form for Sand Castings, Permanent Mold Castings, and Die Castings²

B 94 Specification for Magnesium-Alloy Die Castings²

B 107/B 107M Specification for Magnesium-Alloy Extruded Bars, Rods, Shapes, Tubes, and Wire²

B 108 Specification for Aluminum-Alloy Permanent Mold Castings²

B 179 Specification for Aluminum Alloys in Ingot and Molten Forms for Castings from all Casting Processes²

B 199 Specification for Magnesium-Alloy Permanent Mold Castings²

B 209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate²

B 210 Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes²

B 211 Specification for Aluminum and Aluminum-Alloy

Bar, Rod, and Wire²

B 221 Specification for Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes²

B 234 Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes for Condensers and Heat Exchangers²

B 236 Specification for Aluminum Bars for Electrical Purposes (Bus Bars)²

B 241/B 241M Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube²

B 247 Specification for Aluminum and Aluminum-Alloy Die Forgings, Hand Forgings, and Rolled Ring Forgings²

B 308/B 308M Specification for Aluminum Alloy 6061-T6 Standard Structural Profiles²

B 313/B 313M Specification for Aluminum and Aluminum-Alloy Round Welded Tubes²

B 316/B 316M Specification for Aluminum and Aluminum-Alloy Rivet and Cold Heading-Wire and Rods²

B 317 Specification for Aluminum Alloy Extruded Bar, Rod, Tube, Pipe, and Structural Profiles for Electrical Purposes (Bus Conductor)²

B 345/B 345M Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube for Gas and Oil Transmission and Distribution Piping Systems²

B 361 Specification for Factory-Made Wrought Aluminum and Aluminum-Alloy Welding Fittings²

B 373 Specification for Aluminum Foil for Capacitors²

B 403 Specification for Magnesium-Alloy Investment Castings²

B 404/B 404M Specification for Aluminum and Aluminum-Alloy Seamless Condenser and Heat-Exchanger Tubes with Integral Fins²

B 429 Specification for Aluminum-Alloy Extruded Structural Pipe and Tube²

B 479 Specification for Annealed Aluminum and Aluminum-Alloy Foil for Flexible Barrier, Food Contact, and Other Applications²

B 483/B 483M Specification for Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications²

¹ This terminology is under the jurisdiction of ASTM Committee B07 on Light Metals and Alloys and is the direct responsibility of Subcommittee B07.03 on Aluminum Alloy Wrought Products.

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² Annual Book of ASTM Standards, Vol 02.02.

- B 491/B 491M Specification for Aluminum and Aluminum-Alloy Extruded Round Tubes for General-Purpose Applications²
- B 547/B 547M Specification for Aluminum and Aluminum-Alloy Formed and Arc-Welded Round Tube²
- B 594 Practice for Ultrasonic Inspection of Aluminum-Alloy Wrought Products for Aerospace Applications²
- B 618 Specification for Aluminum-Alloy Investment Castings²
- B 632/B 632M Specification for Aluminum-Alloy Rolled Thread Plate²
- B 666/B 666M Practice for Identification Marking of Aluminum and Magnesium Products²
- B 736 Specification for Aluminum, Aluminum Alloy, and Aluminum-Clad Steel Cable Shielding Stock²
- B 807 Practice for Extrusion Press Solution Heat Treatment of Aluminum Alloys²

3. Terminology

3.1 *Definitions*—The definitions are grouped by subject and listed in alphabetical order.

- Alclad**, *adj*—having an aluminum or aluminum-alloy coating that is metallurgically bonded to either one side or both surfaces of an aluminum alloy product, and that is anodic to the alloy to which it is bonded, thus electrolytically protecting the core alloy against corrosion. (See also individual product type such as *Alclad plate*, *Alclad sheet*, etc.). **B 209, B 210, B 211, B 221, B 234, B 241/B 241M, B 313/B 313M, B 345/B 345M, B 404/B 404M, B 547/B 547M**
- bar**, *n*—solid wrought product that is long in relation to its cross section, is square or rectangular with sharp or rounded corners/edges (excluding plate and flattened wire), or is a regular hexagon or octagon, and in which at least one perpendicular distance between parallel faces is 0.375 in. or greater [over 10.00 mm]. **B 107, B 211, B 221, B 236, B 317, B 594, B 666/B 666M**
- bus bar*, *n*—rigid electric conductor in the form of a bar. **B 236, B 317, B 666/B 666M**
- extruded bar*, *n*—bar brought to final dimensions by hot extruding. **B 107/B 107M, B 221, B 236, B 317**
- rolled bar*, *n*—bar brought to final dimensions by hot rolling. **B 211, B 236**
- saw-plate bar*, *n*—bar brought to final thickness by hot or cold rolling and to final width by sawing. **B 236**
- bus conductor**, *n*—rigid electric conductor of any cross section. **B 236, B 317**
- casting**, *n*—metal object, at or near dimensions shape, produced by introducing molten metal into a mold or a die and allowing it to solidify. **B 666/B 666M**
- die casting*, *n*—casting produced by introducing molten metal under substantial pressure into a metal die and characterized by a high degree of fidelity to the die cavity. **B 85, B 94**
- investment casting*, *n*—casting produced by surrounding (investing) an expendable pattern (usually wax or plastic) with a refractory slurry that sets at room temperature, after which the pattern is removed through the use of heat, and the resultant cavity is filled with molten metal and allowed to

solidify.

permanent mold casting, *n*—casting produced by introducing molten metal by gravity or low pressure into a mold constructed of durable material, usually iron or steel, and allowing it to solidify. **B 403, B 618**

sand casting, *n*—casting produced by pouring molten metal into a sand mold and allowing it to solidify. **B 108, B 199**

semi-permanent mold casting, *n*—permanent mold casting which is made using an expendable core such as sand. **B 26, B 80**

circle, *n*—circular blank fabricated from plate, sheet, or foil. **B 108, B 199**

extrusion billet, *n*—solid or hollow form, commonly cylindrical, used as the final length of material charged into the extrusion press cylinder, and is usually a cast product, but may be a wrought product or sintered from powder compact. **B 666/B 666M**

extrusion ingot, *n*—solid or hollow cast form, usually cylindrical, suitable for extruding. **B 807**

extrusion log, *n*—starting stock for extrusion billet. Extrusion log is usually produced in lengths from which shorter extrusion billets are cut. **B 807**

foil, *n*—rolled wrought product, rectangular in cross section, and of thickness less than 0.006 in. [up through 0.15 mm]. **B 373, B 479, B 666/B 666M**

bright two-side foil, *n*—foil having a uniform bright specular finish on both sides. **B 373, B 479**

matte one-side foil, *n*—foil having a diffuse reflecting finish on one side and a bright specular finish on the other. **B 373, B 479**

forging, *n*—metal part worked to a predetermined shape by one or more processes such as hammering, upsetting, pressing, rolling, etc. **B 91, B 247, B 666/B 666M**

blocker-type forging, *n*—forging made in a single set of impressions to the general contour of a finished part. **B 247**

die forging, *n*—forging formed to the required shape and size by working in impression dies. **B 91, B 247, B 594, B 666/B 666M**

hammer forging, *n*—forging produced by repeated blows of a forging hammer. **B 91**

hand forging, *n*—forging, manually-manipulated, which is worked, through repeated strokes or blows, between flat or simply shaped dies. **B 247, B 594, B 666/B 666M**

rolled ring forging, *n*—cylindrical product of relatively short height, circumferentially rolled from a hollow section. **B 247, B 594**

forging stock, *n*—wrought or cast rod, bar or other section suitable for forging. **B 247**

ingot, *n*—cast form suitable for fabricating (rolling, forging, extruding, etc.) or remelting. **B 92/B 92M, B 93/B 93M, B 179, B 666/B 666M**

mill finish, *adj*—having a nonuniform finish which may vary from piece to piece and within a piece, and which may not be entirely free of stains or oil. See also *mill finish sheet*. **B 209, B 632**