SAE *The Engineering Society*
For Advancing Mobility
Land Sea Air and Space®

I N T E R N A T I O N A L

400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

SAE® **AMS-H-6088C**

Issued   JUL 1997
Revised   FEB 1999
Cancelled   JUL 2000

Superseding AMS-H-6088B

Heat Treatment of Aluminum Alloys

CANCELLATION NOTICE

This specification has been "CANCELLED" by the Aerospace Materials Division, SAE, as of July 2000, and has been superseded as noted below. The requirements of the latest issue of the following documents shall be fulfilled whenever reference is made to the cancelled AMS-H-6088. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications noting that it is superseded as shown below. Cancelled specifications are available from SAE upon request.

1. Raw Material (Mill Products): Shall be heat treated by producers in accordance with AMS 2772, "Heat Treatment of Aluminum Alloy Raw Materials". (Examples of raw materials are sheet, plate, wire, rod and bar, tubing, forgings, and extrusions.)

1.1   Conversion of Raw Material (Mill Products): To another temper, by an organization other than the producer, shall be performed in accordance with the technical requirements and quality assurance provisions of AMS 2770, "Heat Treatment of Wrought Aluminum Alloy Parts". In addition, the converted product shall be tested in accordance with the requirements of the applicable material specification.

2. Parts: Shall be heat treated in accordance with AMS 2770, "Heat Treatment of Wrought Aluminum Alloy Parts".

3. Castings: Shall be heat treated in accordance with AMS 2771, "Heat Treatment of Aluminum Alloy Castings" except it is permissible, for specific castings, to use equipment, practices, and test methods which were previously acceptable to the purchaser.

NOTICE

This document has been taken directly from Military Specification MIL-H-6088G, Amendment 1, and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards.

The original military specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, (b) the use of the existing government specification or standard format, and (c) the exclusion of any qualified product list (QPL) sections.

1. SCOPE AND APPLICATION:

This specification covers the requirements and recommendations for the heat treatment of aluminum alloy rolled, extruded, forged, drawn, and cast product (See 6.1 and 6.5.1). It does not cover the requirements for the heat treatment of aluminum alloy parts (See 3.4). Subjects covered are: process establishment and re-establishment (previously called "process qualification" and "process requalification"); periodic process surveys; periodic product monitoring; furnaces and operation controls; pyrometric equipment; quenching equipment, media, and operation controls; parameters and procedures for solution heat treatment, quenching, age hardening, and annealing (of certain product); requirements for inspections and record keeping; test methods; and limits of product acceptability.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The applicable issue of these publications shall be those in effect on date of invitation for bids or solicitation for offers.

2.1   U.S. Government Publications:

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

MIL-STD-1537   Electrical Conductivity Test for Measurement of Heat Treatment of Aluminum Alloys, Eddy Current Method

MIL-STD-45662   Calibration Systems Requirements

2.2   SAE Publications:

Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AMS 2750   Pyrometry

AMS 2770   Heat Treatment of Wrought Aluminum Alloy Parts

2.3   ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ASTM B 557   Tension Testing Wrought and Cast Aluminum and Magnesium Alloy Products

ASTM E 10   Brinell Hardness of Metallic Materials

ASTM E 18   Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials

ASTM E 103   Rapid Indentation Hardness Testing of Metallic Materials

2.4   ANSI Publications:

Available from ANSI, 11 West 42nd Street, New York, NY 10036-8002.

ANSI H35.1   Alloy and Temper Designation System for Aluminum

3.   REQUIREMENTS:

3.1   Process Establishment:

Prior to production, fully capable heat-treating equipment and procedures shall be in place and established as specified herein (See Table I). The Government reserves the right of review, verification, and approval of the results of process establishment or re-establishment derived from testing new equipment and equipment which has undergone major work or repair (See 3.1.2).

3.1.1   Notification of Authorized Government Representative: When an authorized government representative (See 6.5.6) finds it necessary to witness the process establishment tests, the representative shall be given at least 7 days notice prior to such tests. All process information shall be considered proprietary to the heat transfer, and its confidentiality shall be preserved.