



Designation: B945 – 06 (Reapproved 2014)

# Standard Practice for Aluminum Alloy Extrusions Press Cooled from an Elevated Temperature Shaping Process for Production of T1, T2, T5 and T10–Type Tempers<sup>1</sup>

This standard is issued under the fixed designation B945; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This practice establishes the controls necessary for production of extrusions cooled from an elevated temperature shaping (extrusion) process for the production of T1, T2, T5 and T10–type tempers (see ANSI H35.1).

1.2 This practice is for production of extruded product supplied in the alloys shown in [Table 1](#) in the T1, T2, T5 or T10–type tempers. It contains pertinent information to be used in establishing production practices and is descriptive rather than prescriptive.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

## 2. Referenced Documents

2.1 The following documents of the issue in effect on the date of material purchase form a part of this standard to the extent referenced herein:

2.2 *ASTM Standards:*<sup>2</sup>

[B557 Test Methods for Tension Testing Wrought and Cast Aluminum- and Magnesium-Alloy Products](#)

[B647 Test Method for Indentation Hardness of Aluminum Alloys by Means of a Webster Hardness Gage](#)

[E648 Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source](#)

[B881 Terminology Relating to Aluminum- and Magnesium-Alloy Products](#)

[B918 Practice for Heat Treatment of Wrought Aluminum Alloys](#)

[E10 Test Method for Brinell Hardness of Metallic Materials](#)  
[E18 Test Methods for Rockwell Hardness of Metallic Materials](#)

[E2281 Practice for Process and Measurement Capability Indices](#)

2.3 *ANSI Standard:*

[H35.1 Alloy and Temper Designation Systems for Aluminum](#)<sup>3</sup>

## 3. Terminology

3.1 *Definitions*—Refer to Terminology [B881](#) for Definitions of Product terms used in this specification.

## 4. Equipment

NOTE 1—Equipment includes billet preheating, extruding and quenching.

4.1 Prior to being extruded, aluminum alloys are heated to a temperature not to exceed the temperatures shown in [Table 1](#). Usual heating methods include, but are not limited to, induction, flame impingement, or forced air. Controls shall be adequate to ensure that the equipment can be operated in a manner which precludes metal overheating or deleterious contamination of the metal by the furnace environment.

4.1.1 Temperature control and recording devices used to measure temperature shall be calibrated as specified in [5.2](#).

4.2 *Quenching*—Quenching methods may consist of, but are not limited to, air, water or water/glycol mixture in forced air, water spray, fog or mist, standing wave, a quench tank or another pressurized water device, or a combination thereof. The quench equipment shall be used in a manner such that the quench parameters can be controlled and recorded.

## 5. Quality Assurance, Calibration and Testing

5.1 *Process Documentation:*

5.1.1 Extrusion thermal practices shall be established, documented, controlled and monitored so that shipped product meets order requirements.

<sup>3</sup> Available from the Aluminum Association, Inc., 1525 Wilson Blvd., Arlington, VA 22209, www.aluminum.org

<sup>1</sup> This practice 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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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.