



<b>AEROSPACE STANDARD</b>	<b>AS1990™</b>	<b>REV. D</b>
	Issued 1990-01 Revised 2003-01 Reaffirmed 2013-11 Stabilized 2016-01  Superseding AS1990C	
<b>Aluminum Alloy Tempers</b>		

#### RATIONALE

AS1990D stabilizes this document because equivalent technical requirements are contained in alternate documents.

#### STABILIZED NOTICE

AS1990D has been declared Stabilized by AMS D Nonferrous Alloys Committee. This document will no longer be updated and may no longer represent standard industry practice. This document was stabilized because equivalent technical requirements are contained in alternate documents. Previously this document was reaffirmed. The last technical update of this document occurred in January, 2003. Users of this document should refer to the cognizant engineering organization for disposition of any issues with reports/certifications to this standard, including exceptions listed on the certification.

**NOTE:** In many cases, the purchaser may represent a sub tier supplier and not the cognizant engineering organization. AMS Committee D recommends that the following technically equivalent document be used for future procurement. This listing does not constitute authority to substitute this standard for the Stabilized standard.

ANSI H35.1/H35.1M American National Standard Alloy and Temper Designation Systems for Aluminum

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## 1. SCOPE:

The purpose of this SAE Aerospace Standard (AS) is to provide a description of the temper nomenclature system for aluminum alloys used in the aerospace industry by combining information from different sources for the benefit of the user.

## 2. REFERENCES:

For further information on the tempers described in this document see:

### 2.1 Aluminum Association Publications:

Available from The Aluminum Association, Inc., 900 19th Street N.W., Washington, DC 20006-2168, or [www.aluminum.org](http://www.aluminum.org).

Aluminum Standards and Data  
Tempers for Aluminum and Aluminum Alloy Products ("Yellow Sheets")

### 2.2 ANSI Publications:

Available from ANSI, 25 West 43rd Street, New York, NY 10036, or [www.ansi.org](http://www.ansi.org).

ANSI H35.1/H35.1M American National Standard Alloy and Temper Designation Systems for Aluminum

### 2.3 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or [www.astm.org](http://www.astm.org).

ASTM E 29 Using Significant Digits in Test Data to Determine Conformance With Specification

### 2.4 European Committee for Standardization (CEN) Publications:

Available from CEN, 36 rue de Stassart, B-1050 Brussels, Belgium, or [www.cenorm.be](http://www.cenorm.be).

EN 515 Aluminum and aluminum alloys - Wrought products - Temper designations

### 2.5 International Organization for Standardization (ISO) Publications:

Available from ISO, 1 rue de Varembé, Case Postale 56, CH-1211 Geneva 20, Switzerland, or [www.iso.org](http://www.iso.org).

ISO 2107 Aluminum and aluminum alloys - Wrought products - Temper designations

## 3. GENERAL:

The temper designations used with aluminum alloys indicate the sequence of basic treatments (mechanical, thermal, or thermomechanical), as registered with The Aluminum Association and as used with AMS material specifications, for achieving the minimum specification properties for specific alloy-temper-product forms.

This document provides information as to the general rules used by The Aluminum Association for describing the alloy-temper system (see Section 4). This section is an extraction from ANSI H35.1/H35.1M, EN 515, and ISO 2107. This document also provides a list of alloy and tempers used in aerospace applications. The product form and the basic operations that determine the temper are shown (see Section 5). However, some of these alloy temper combinations are not currently used and may not be readily available.