



# AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
TWO PENNSYLVANIA PLAZA, NEW YORK, N. Y. 10001

## AMS 2370B

Superseding AMS 2370A

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### QUALITY ASSURANCE SAMPLING OF CARBON AND LOW-ALLOY STEELS Wrought Products Except Forgings and Forging Stock

1. **SCOPE:** This specification covers quality assurance sampling procedures which may be used to determine conformance to applicable specification requirements of wrought carbon and low-alloy steel products except forgings and forging stock.
2. **APPLICABLE DOCUMENTS:** The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply.
  - 2.1 **SAE Publications:** Available from Society of Automotive Engineers, Inc., Two Pennsylvania Plaza, New York, New York 10001.
    - 2.1.1 **Aerospace Material Specifications:**
      - AMS 2300 - Premium Aircraft-Quality Steel Cleanliness, Magnetic Particle Inspection Procedure
      - AMS 2301 - Aircraft-Quality Steel Cleanliness, Magnetic Particle Inspection Procedure
3. **TECHNICAL REQUIREMENTS:**
  - 3.1 **General:**
    - 3.1.1 Omission from this specification of confirmatory tests of certain material properties or attributes controlled by the applicable material specification does not relieve the vendor of responsibility for furnishing products which conform in all respects to the applicable specification.
    - 3.1.2 In the event of a conflict between the requirements specified herein and the requirements of a particular material specification, the following rules shall apply:
      - 3.1.2.1 When the requirements of the material specification are more stringent, they shall take precedence.
      - 3.1.2.2 When the requirements of this AMS are more stringent, they shall take precedence.
      - 3.1.2.3 If any tests mentioned in Table I are not required by the material specification, they shall not be considered a requirement.
      - 3.1.2.4 When instructions are issued by the purchaser regarding quality assurance sampling procedures, such instructions shall take precedence over the requirements of either this specification or the particular specification in which this specification is invoked.
  - 3.2 **Responsibility for Tests:** The vendor of the product shall supply all samples and shall be responsible for performing all required tests.
  - 3.3 **Detail Requirements:**
    - 3.3.1 **Inspection Lot:** An inspection lot shall be as defined in 3.3.1.1 or 3.3.1.2, the applicable definition being as specified in Table I for the type of test and type of product being tested.

- 3.3.1.1 An inspection lot shall consist of all material identifiable to a single heat or melt.
- 3.3.1.2 An inspection lot shall consist of a mill form of one composition, shape, condition, and nominal dimensions from a single heat or melt, heat treated as a batch or sequentially heat treated in a continuous furnace. In the case of sheet and strip produced on continuous mills and not subsequently heat treated, a lot shall be considered the individual coil or product thereof in straight lengths, prior to shearing to narrower widths or cutting to individual lengths.
- 3.3.2 **Location of Sample:** The location from which the sample is taken shall be as specified in 3.3.2.1, 3.3.2.2, 3.3.2.3, and/or 3.3.2.4, the applicable location being as specified in Table I for the type of test and type of product being tested. The orientation with respect to direction of predominant grain flow shall be as specified in the applicable material specification or, if not specified therein, shall be as agreed upon by purchaser and vendor.
- 3.3.2.1 The test samples shall be obtained during the pouring of steel from a ladle.
- 3.3.2.2 The sample shall consist of a section randomly selected from the product.
- 3.3.2.3 The sample shall consist of one or more sections of the product selected to represent a specific location or locations with respect to the order of pouring of the selected ingot or ingots and with respect to the location within the ingot, as agreed upon by purchaser and vendor.
- 3.3.2.4 The sample shall consist of material representing each consumable remelted ingot from the parent heat.
- 3.3.3 **Number of Samples:** Unless otherwise specified, sampling shall be in accordance with Table I; the numerals under "Number of Samples" represent the minimum number of units of product representing the inspection lot.
- 3.3.3.1 Only one value need be reported. For vacuum melted material, the chemical composition shall be checked and reported for carbon and manganese on each vacuum melted ingot and the balance of the composition shall be that of the parent air melt ladle analysis.
- 3.3.3.2 Only one value need be reported.
- 3.3.4 **Testing:** Test methods shall be in accordance with the requirements of the applicable material specification. If a test method is not specified, the method of test shall be as agreed upon by purchaser and vendor.
- 3.3.5 **Resampling and Retesting:** If any specimen used in the above tests fails to meet the specified requirements, disposition of the product may be based on the results of testing three additional specimens for each original nonconforming specimen, unless retesting is specifically prohibited by the purchaser. Except as permitted in 3.3.5.1 or 3.3.5.2, failure of any retest specimen to meet the specified requirements shall be cause for rejection of the product represented and no additional testing shall be permitted. Results of all tests, except as specified in 3.3.3.1 and 3.3.3.2, shall be reported.
- 3.3.5.1 Should resampling and retesting be required for the macrostructure test of specimens for aircraft-quality steel, specified to meet the requirements of AMS 2301, the additional specimens shall be taken from material representing the same position in each of the two available ingots most immediately adjacent in pouring sequence to that from which the failed specimen was taken and one from the original non-conforming ingot after additional discard; should the latter specimen be unacceptable, resampling and retesting of the nonconforming ingot may be repeated after as many consecutive discards as necessary and desired to obtain sound material.
- 3.3.5.2 Should resampling and retesting be required for the macrostructure test of specimens of premium quality steel specified to meet the requirements of AMS 2300, the additional specimen shall be taken from material representing the same remelt ingot after as many consecutive discards as necessary and desired to obtain sound material.