

**AEROSPACE
MATERIAL
SPECIFICATION**



AMS-S-11310B

Issued	NOV 1998
Noncurrent	FEB 2003
Cancelled	FEB 2005

Superseded by MIL-S-11310

**Steel Bars, Carbon, Hot Rolled, for Cold Shaping,
Including Cold Extrusion**

CANCELLATION NOTICE

This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of February, 2005, and has been superseded by MIL-S-11310. The requirements of the latest issue of MIL-S-11310 shall be fulfilled whenever reference is made to the cancelled AMS-S-11310. By this action, this document will remain listed in the Numerical Section of the Index of Aerospace Material Specifications, noting that it has been superseded by MIL-S-113105.

Cancelled specifications are available from SAE.

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NONCURRENT NOTICE

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of February 2003. It is recommended, therefore, that this specification not be specified for new designs.

"NONCURRENT" refers to those specifications which have previously been widely used and which may be required on some existing designs in the future. The Aerospace Materials Division, however, does not recommend these specifications for future use in new designs. Each of these "NONCURRENT" specifications is available from SAE upon request.

Similar, but not necessarily identical products, are covered by ASTM A 29, Steel Bars, Carbon and Alloy, Hot-Wrought and Cold Finished.

ASTM specifications are available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959 or www.astm.org.

This document has been taken directly from U.S. Military Specification MIL-S-11310E, Notice 2 and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-S-11310E, Notice 2. Any part numbers established by the original specification remain unchanged.

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, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualification requirements and associated qualified products lists are mandatory for DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this technical report.

1. SCOPE:

1.1 Scope:

This specification covers hot-rolled carbon steel bars and heat treated carbon steel bars which are to be used in cold shaping, including cold extrusion, of ammunition components.

1.2 Classification:

The steel shall be furnished in the compositions listed in table I, as specified.

2. APPLICABLE DOCUMENTS:

The following publications, of the issues in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

2.1 ASTM Publications:

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

ASTM E 10 Brinell Hardness Testing of Metallic Materials
ASTM E 30 Chemical Analysis of Steel, Cast Iron, Open Hearth Iron, and Wrought Iron
ASTM E 340 Standard Method of Macroetching Metals and Alloys

2.2 U.S. Government Publications:

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

FED-STD-48 Tolerances for Steel and Iron Wrought Products

FED-STD-151 Metals, Test Methods

MIL-STD-163 Preparation of Steel Products for Domestic Shipment (Storage) and Overseas Shipment

MIL-STD-1459 Macrograph Standards for Steel Bars, Billets and Blooms for Ammunition Components

3. REQUIREMENTS:

3.1 Process:

The steel shall be manufactured by either the open-hearth, basic oxygen, or the electric furnace process, at the option of the steel producer, unless one of the processes is specified. Unless otherwise specified, the steel shall be fully killed with any appropriate deoxidizing agent. Aluminum, however, shall be used in the killing operation to the extent necessary to control the grain size requirements of 3.4.

3.2 Condition:

Unless otherwise specified, the steel bars shall be furnished as hot-rolled. When specified, bars shall be furnished pickled or pickled and oiled, in which case the bars shall be free from scale. When approved, descaling may be done by methods other than pickling (see 6.6).

3.3 Chemical composition:

The chemical composition of the bars, shall meet the requirements in table I, subject to the permissible variations shown in table II, provided that in a lot of steel the individual determinations for any element shall not vary both above and below the range shown in table I. Commercial steels of compositions intermediate to those in table I may be furnished if approved by the procurement activity.

3.3.1 A heat analysis of each heat or lot of steel shall be furnished by the steel producer showing the percentages of the elements (except copper, nickel, chromium, and molybdenum) shown in table I. The heat analysis shall meet the chemical requirements of table I.

3.3.1.2 High-residual-aluminum steel: When a high-residual-aluminum type of steel is required, it shall be so specified (see 6.6). The amount of aluminum used shall be greater than that necessary for the control of austenitic grain size as required by 3.4. The residual aluminum required above refers to acid soluble aluminum.