

MIL-S-12505B
8 April 1970
SUPERSEDING
MIL-S-12505A
4 June 1962

MILITARY SPECIFICATION

STEEL: STRUCTURAL, HIGH-STRENGTH, LOW-ALLOY; SHAPES,
PLATES, AND BARS FOR WELDED, RIVETED, AND BOLTED STRUCTURES

This specification is mandatory for use by all Departments
and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification covers weldable, high-strength, low alloy structural-steel shapes, plates, and bars to be furnished in thicknesses from 3/16 inch to 4 inches, inclusive. Material in thicknesses over 4 inches shall be as approved by the procuring activity.

2. APPLICABLE DOCUMENTS

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

STANDARDS

MILITARY

MIL-STD-129 - Marking for Shipment and Storage

MIL-STD-163 - Steel Mill Products, Preparation for Shipment and Storage

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

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2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

American Society for Testing and Materials (ASTM) Standards

A 242 - High Strength Low Alloy Structural Steel.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103.)

UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification Rules

(Application for copies should be addressed to the uniform classification Committee, 202 Union Station, Chicago, Illinois 60606.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC.

National Motor Freight Classification

(Application for copies should be addressed to the American Trucking Association, 1616 P Street, N. W., Washington, D. C. 20036.)

3. REQUIREMENTS

3.1 Description. The structural shapes, plates, and bars shall be fabricated from steel conforming to the Standard Specification of the American Society for Testing and Materials (ASTM), Designation A 242, in thickness from 3/16 inch to 4 inches, inclusive. The structural shapes, plates, and bars shall be furnished either hot-rolled or cold-rolled, as specified (see 6.2), in the as-rolled, annealed, normalized, or stress-relieved condition, as specified (see 6.2). These steels have enhanced atmospheric corrosion resistance equal to or greater than carbon structural steels with copper.

3.2 Pickling. When pickling is specified (see 6.2), the structural shapes, plates, and bars shall be free from surface scale and oxide and shall be either oiled or dry as specified (see 6.2).

3.3 Sizes and lengths. Sizes and lengths of the structural shapes, plates, and bars shall be as specified (see 6.2).

3.4 Identification marking. Structural steel shapes, plates, and bars shall be marked for identification as specified in the contract or order.

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4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of inspection. Inspection shall be classified as follows:

- (a) Production inspection of material, shapes, plates, and bars.
- (b) Inspection of preparation for delivery.

4.3 Inspection procedure. Inspection shall be in accordance with ASTM Designation A 242.

4.4 Inspection of preparation for delivery. The preservation, packaging, packing, and marking of the material shall be inspected to determine compliance with the applicable requirements of section 5.

5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging. Preservation and packaging shall be level A or C as specified (see 6.2).

5.1.1 Level A. Cleaning, drying, preservation, and packaging shall be in accordance with MIL-STD-163.

5.1.2 Level C. Cleaning, drying, preservation, and packaging shall be in accordance with manufacturer's commercial practice.

5.2 Packing. Packing shall be level A or level C as specified (see 6.2).

5.2.1 Level A. Packing shall be in accordance with MIL-STD-163.

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5.2.2 Level C. Packing shall be in accordance with commercial practice adequate to insure acceptance and safe delivery by the carrier for the mode of transportation employed. Containers shall comply with the requirements of the Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable to the mode of transportation.

5.3 Marking. In addition to any special marking required by the contract or order, shipments shall be marked in accordance with the requirements of MIL-STD-129.

6. NOTES

6.1 Intended use. High-strength, low-alloy structural steel is intended for use in bridges and other items of equipment where relatively high mechanical properties are required. The steel is intended primarily for use in welded, riveted, or bolted construction as structural members where savings in weight or added durability are important. The steel has enhanced atmospheric corrosion resistance equal to or greater than carbon structural steels with copper.

6.2 Ordering data. Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Whether steel shall be hot or cold-rolled (see 3.1).
- (c) Condition of steel required (see 3.1).
- (d) Whether pickling is required (see 3.2).
- (e) Whether shapes, plates, and bars shall be oiled or dry (see 3.2).
- (f) Sizes and lengths required (see 3.4).
- (g) Level of preservation, packaging, packing, and marking required (see section 5).

6.3 Weldability. Welding of the high-strength, low-alloy steel covered by this specification is not to be performed in temperatures lower than 60°F. without special welding precautions.

Custodians:

Army - MR
Navy - YD
Air Force - 84

Preparing activity:

Army - MR

Project No. 9520-0020

Review activities:

Army - ME, MI
Air Force - 85
DSA - IS

User activities:

Army - WC
Navy - SE