



## Standard Specification for Ladders, Fixed, Vertical, Steel, Ship's<sup>1</sup>

This standard is issued under the fixed designation F 840; 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.

<sup>ε1</sup> NOTE—Keywords were added editorially in November 1998.

### 1. Scope

1.1 This specification covers fabrication details for fixed, vertical, steel ladders for personnel access on ships.

1.2 Nonferrous ladders and special-purpose ladders are excluded from this specification.

1.3 The values stated in inch-pound units are to be regarded as the standard.

1.4 *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 *ASTM Standards:*

A 36/A36M Specification for Carbon Structural Steel<sup>2</sup>

2.2 *American Bureau of Shipping, Rules for Building and Classing Steel Vessels:*<sup>3</sup>

Section 43.3 Ordinary Strength Hull Structural Steel

Section 30 Welding

2.3 *American Welding Society Standard:*<sup>4</sup>

AWS D 1.1—Structural Welding Code

2.4 *Federal Standard:*<sup>5</sup>

TT-P-645 Primer, Paint, Zinc Chromate, Alkyd Type

### 3. Definition of Terms Specific to This Standard

3.1 *fixed ladder*—a ladder permanently attached by welding or bolting to ship's structure or equipment.

3.2 *pitch*—the included angle between the horizontal and the ladder, measured on the opposite of the ladder from the climbing side.

3.3 *vertical ladder*—a ladder which has an installed pitch range from 75 to 90° (vertical).

### 4. Classification

4.1 Ladders are furnished in three types as follows:

4.1.1 *Type I*—Normal duty (Fig. 1).

4.1.2 *Type II*—Punched stringers (Fig. 2) as an alternate to Type I.

4.1.3 *Type III*—Heavy duty (Fig. 3). This type may be specified in cargo holds where the cargo or equipment or vehicles used to handle cargo could be expected to damage a Type I or Type II ladder.

### 5. Ordering Information

5.1 Orders for material under this specification shall include the following:

5.1.1 Quantity,

5.1.2 Type (4.1), and applicable detail in Fig. 2,

5.1.3 Material (6.1),

5.1.4 Finish (8.2),

5.1.5 Dimensions *a* and *b* and *L* (Fig. 1, Fig. 2, or Fig. 3),

5.1.6 Number of rungs,

5.1.7 Welding specification (6.2),

5.1.8 Marking (Section 10), and

5.1.9 ASTM designation and date of issue.

### 6. Materials and Manufacture

6.1 Unless otherwise specified in ordering documents, steel shall conform to the requirements of Specification A 36/A 36M, ABS Section 43.3, or equal.

6.2 Unless otherwise specified in ordering documents, welding shall conform to AWS D 1.1 or ABS Section 30.

### 7. Dimensions

7.1 The dimensions shall be in accordance with Figs. 1-3.

7.2 Dimensions are given in inches with metric conversion in parentheses.

### 8. Workmanship, Finish, and Appearance

8.1 Ladders shall be free of splinters, sharp edges, burrs, and weld spatters.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee F-25 on Ships and Marine Technology and is the direct responsibility of Subcommittee F25.03 on Outfitting.

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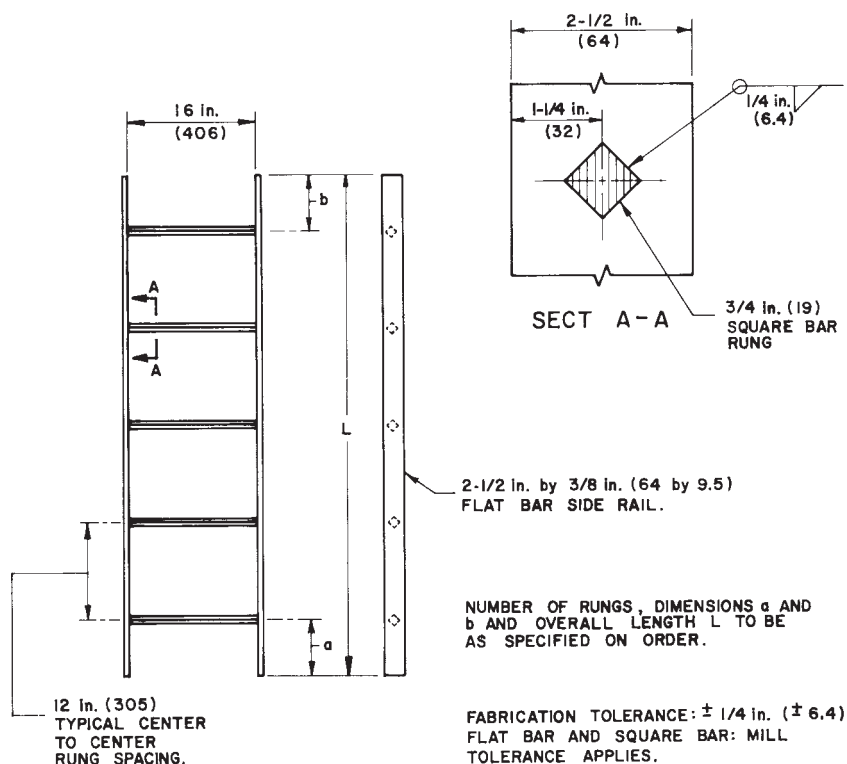
<sup>2</sup> *Annual Book of ASTM Standards*, Vol 01.04.

<sup>3</sup> Available from American Bureau of Shipping, 2 World Trade Center, 106th Floor, New York, NY 10048.

<sup>4</sup> Available from American Welding Society, 550 N. Lajuene Rd., Miami, FL 33135.

<sup>5</sup> Available from General Services Administration, Specifications Distribution Branch, Bldg. 197, Washington Navy Yard, Washington, DC 20407.

**ASTM F 840 – 83 (1998)<sup>e1</sup>**



**FIG. 1 Vertical Ladder Type I (Normal Duty)**

8.2 Finish—Unless otherwise specified in ordering documents, ladders shall, after fabrication, be sand or shot blasted to remove rust and scale and given a complete coat of zinc chromate primer, Federal Specification TT-P-645.

**9. Inspection**

9.1 Unless otherwise specified in ordering documents, all ladders shall be visually inspected for workmanship, finish, and appearance as defined in Section 8.

**10. Marking**

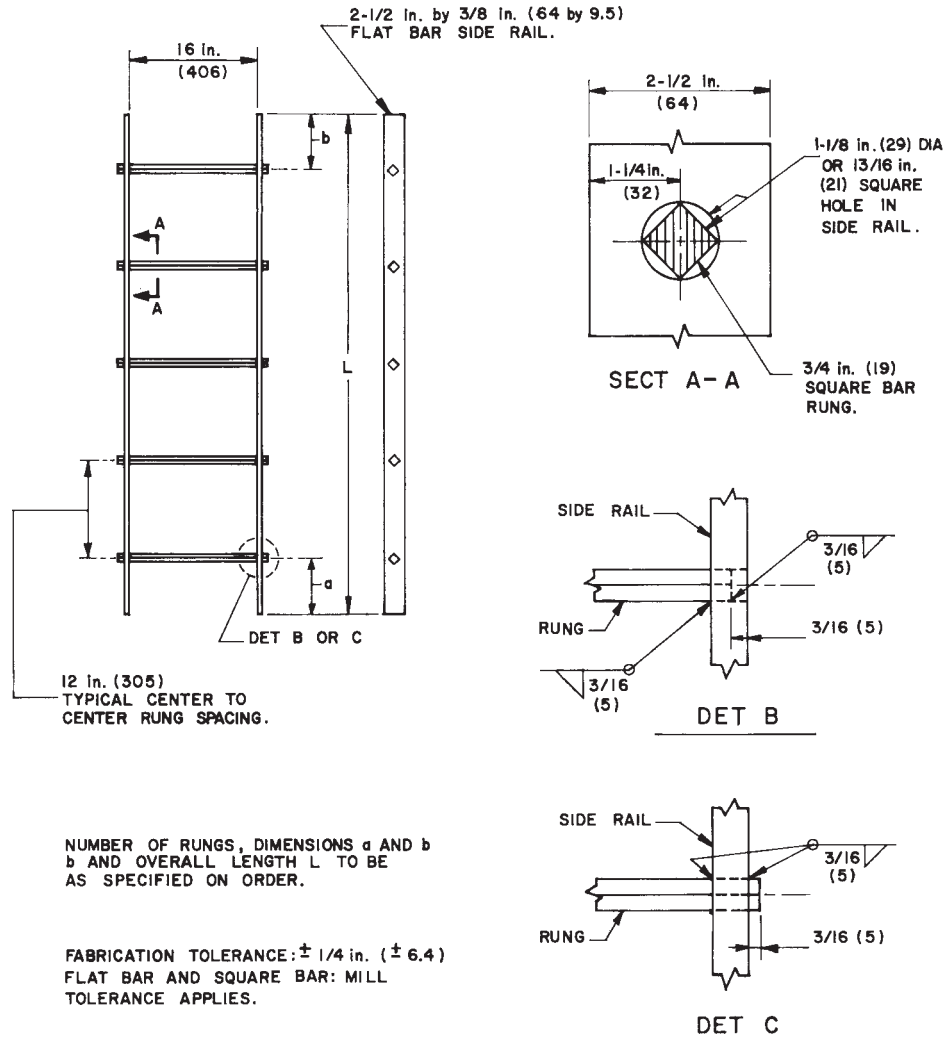
10.1 Unless otherwise specified in ordering documents, each ladder shall be marked with purchase-order number, item

number (from purchase order), ASTM designation number, and manufacturer's name. Marking may be by steel stamp, paint stencil, or weatherproof tag.

**11. Keywords**

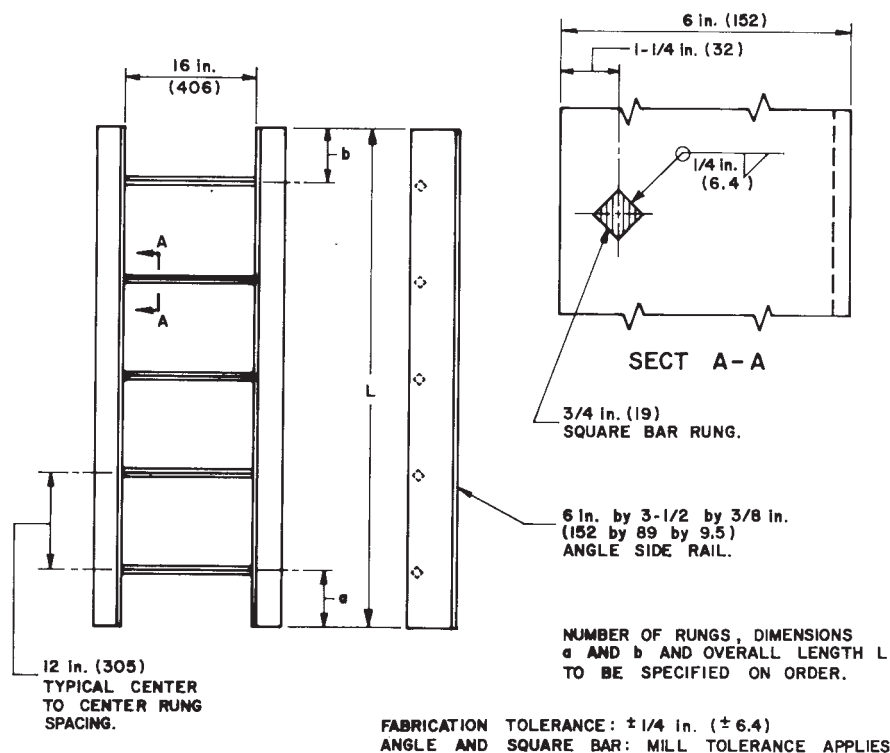
11.1 fixed ladders; ladders; marine; ship; steel ladders; vertical ladders

**ASTM F 840 - 83 (1998)<sup>e1</sup>**



**FIG. 2 Vertical Ladder Type II (Punched Stringers) as an Alternative to Type I**

**ASTM F 840 – 83 (1998)<sup>e1</sup>**



**FIG. 3 Vertical Ladder Type III (Heavy Duty)**

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