

RR-S-1862  
 March 24, 1975  
 SUPERSEDING  
 MIL-S-18363B (SHIPS)  
 January 25, 1960

## FEDERAL SPECIFICATION

### SHOES, SAFETY, LADDER AND LEVELING DEVICES, LADDER

This specification was approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

#### 1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers ladder safety shoes and leveling devices.

#### 1.2 Classification.

1.2.1 Types, classes, and styles. Ladder safety shoes and ladder leveling devices shall be of the following types, classes, and styles as specified (see 6.2).

Type I - Ladder safety shoe.

Class A - Aluminum.  
 Class B - Bronze or brass.  
 Class C - Steel.  
 Class D - Nonmetallic.

Style 1 - Nonslip pad, hinged, with safety spike and spike lock.  
 Style 2 - Nonslip pad, hinged, with safety spike.  
 Style 3 - Nonslip pad, hinged, without safety spike.  
 Style 4 - Nonslip pad attached to metal frame.  
 Style 5 - Nonslip boots.

Type II - Ladder leveling device.

Class A - Aluminum.  
 Class B - Bronze or brass.  
 Class C - Steel.

Style 6 - Bolt lock, manual adjustment.  
 Style 7 - Automatic adjustment and lock.  
 Style 8 - Manual adjustment with automatic lock and spring release return.  
 Style 9 - Screw thread adjustment.

#### 2. APPLICABLE DOCUMENTS

2.1 The following documents, 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.

##### Federal Specifications:

PPP-B-636 - Boxes, Shipping, Fiberboard.  
 PPP-B-665 - Boxes; Paperboard, Metal Stayed (Including Stay Material).  
 PPP-B-676 - Boxes, Setup.

##### Federal Standard:

Fed. Std. No. 123 - Marking for Domestic Shipment (Civil Agencies).

(Activities outside the Federal Government may obtain copies of Federal Specifications, Standards, and Handbooks as outlined under General Information in the Index of Federal Specifications and Standards and at the prices indicated in the Index. The Index, which includes cumulative monthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

RR-S-1862

(Single copies of this specification and other Federal Specifications required by activities outside the Federal Government for bidding purposes are available without charge from Business Service Centers at the General Services Administration Regional Offices in Boston, New York, Washington, DC, Atlanta, Chicago, Kansas City, MO, Fort Worth, Denver, San Francisco, Los Angeles, and Seattle, WA.

(Federal Government activities may obtain copies of Federal Specifications, Standards, and Handbooks and the Index of Federal Specifications and Standards from established distribution points in their agencies.)

Military Standards:

MIL-STD-105 - Sampling Procedures and Tables for Inspections by Attributes.  
MIL-STD-129 - Marking for Shipment and Storage.

(Copies of Military Specifications and Standards required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

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

National Motor Freight Traffic Association, Inc., Agent.

National Motor Freight Classification.

(Application for copies should be addressed to the American Trucking Associations, Inc., Tariff Order Section, 1616 P Street, N.W., Washington, DC 20036.)

Uniform Classification Committee, Agent:

Uniform Freight Classification.

(Application for copies should be addressed to the Uniform Classification Committee, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606.)

American Society for Testing and Materials (ASTM) Standards:

B 117 - Salt Spray (Fog) Testing.

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

3. REQUIREMENTS

3.1 General.

3.1.1 Material. Except as otherwise specified herein, the materials used in the manufacture of the standard product shall be of the quality used by the manufacturer in the production of his commercial product.

3.1.2 Standard product. Except as otherwise specified herein, the ladder safety shoe and ladder leveling device shall be the standard product of the manufacturer or his suppliers. The items furnished shall be new, unused, and in accordance with the provisions of this specification.

3.1.3 Nonslip pads. Nonslip pads shall provide a insulating base for ladders. They shall be made of natural rubber (NR), styrene butadiene rubber (SBR), or any suitable elastomer.

(a) Flat pads. Flat nonslip pads shall be grooved on the bottom. The grooves shall be at right angle to the longitudinal axis of the pad.

(b) Vacuum cup pads. Vacuum cup nonslip pads for type I safety shoes shall have two rows of vacuum parallel to the longitudinal axis of the pad.

RR-S-1862

3.1.4 Styles. Except as otherwise specified herein, styles shall conform to the basic design concept in accordance with paragraph 1.2.1.

### 3.2 Design.

3.2.1 Safety spike, styles 1 and 2 shoes. The shape of the safety spike on styles 1 and 2 shoes shall be blade or saw tooth toed at the option of the supplier.

3.2.2 Nonslip pads. The nonslip pads on styles 1, 2, 3, and 4 safety shoes and all leveling devices shall be of the replaceable type.

3.2.3 Style 4, metal frame. Metal frames of style 4 safety shoes shall be angle "L" or channel "U" shaped. The angle "L" shaped shoes shall have not less than 2 holes for attachment to the front side rails and not less than 1 hole for attachment to the rear legs. Channel "U" shaped shoes shall have not less than 1 hole for attachment to front side rails and rear legs. The minimum diameter of the holes shall be not less than 3/16 inch.

3.2.4 Type II, style 6 height adjustment bolts. Height adjustment bolts for type II, style 6 ladder leveling devices shall be furnished with wing nuts.

3.3 Antisplit device. Suitable devices for type I, styles 1 and 2 safety shoes shall be provided to prevent splitting of the side rails and rear legs, as applicable, unless mounting plates are provided.

3.4 Compression. Ladder safety shoes and leveling devices shall withstand the load imposed without damage to the safety shoe, leveling device and components, or test unit to which attached when tested as specified in 4.5.1.

3.5 Bending. Ladder leveling devices shall withstand the load imposed without damage to the leveling device and components or the test unit to which attached when tested as specified 4.5.2.

3.6 Finish. Except for corrosion-resisting steel, all exposed steel surfaces shall be cadmium plated or zinc coated or any coating passing a 48 hour salt spray test in accordance with ASTM B 117.

3.7 Workmanship. All exposed surfaces shall be free from sharp edges, burrs, and slivers. Welds shall be free from undercuts, cracks, and closely spaced inline surface porosity. All moving parts shall operate without evidence of binding.

## 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 that supplies and services conform to prescribed requirements.

### 4.2 Sampling for lot acceptance.

4.2.1 Lot. Unless otherwise specified (see 6.2), a lot shall consist of all items, in accordance with this specification, of the same type, class, and style offered for delivery at one time.

4.2.2 Sampling for visual examination of end item. Sampling for this examination shall be in accordance with level S-4 in MIL-STD-105. The acceptable quality levels (AQL's) for defects listed in table I shall be 2.5 defects per hundred units for major defects and 6.5 defects per hundred units for total defects.

4.2.3 Sampling for tests. Sampling for tests shall be in accordance with level S-1 in MIL-STD-105.

4.3 Examination. Ladder safety shoes and ladder leveling devices selected in accordance with 4.2.2 shall be examined for the defects listed in table I.

RR-S-1862

TABLE I. Classification of defects, end item

Defect	Major	Minor
Type, class, and kind not as specified	X	
Material not as specified	X	
Antisplit device not furnished	X	
Finish not as specified	X	
Sharp edges, burrs, or slivers		X
Welds show undercut, cracks, or close spaced inline porosity	X	
Moving parts bind	X	

4.4 Test unit. The test unit shall consist of a full size or short section of sufficient length, aluminum or wood extension or straight ladder, with safety shoes or leveling device, as applicable, attached in the normal manner.

#### 4.5 Test methods.

4.5.1 Compression test. Place the test unit in a vertical position and apply a downward load of not less than 970 pounds equally distributed on the ends of the side rails for one minute. At the end of the test period, the test unit shall be examined for compliance to 3.4.

#### 4.5.2 Bending test.

4.5.2.1 Preparation. The test unit, with the leveler legs fully extended, shall be mounted horizontally on two supports with the legs opposite each other horizontally and both legs resting on one of the supports. The point of support for the leveler legs shall be 3 inches from the extreme ends of the assembly. The point of support for the test unit side rails shall be adjusted for the center line of the leveler brackets to be equidistance from both supports. Where the ladder end of the test unit has a free overhang that is greater in length by 1/2 the distance between supports, additional supports shall be added to rest the overhang.

4.5.2.2 Application. Apply a downward load of not less than 250 pounds, equally distributed on both side rails, at the center line established in 4.5.2.1 and maintain for at least one minute. At the end of the test period, examine the test unit for compliance to 3.5.

4.6 Examination of preparation for delivery. An examination shall be made to determine that the packaging, packing, and marking comply with the requirements in section 5 of this specification. Defects shall be scored in accordance with table II. For examination of interior packaging, the sample unit shall be one shipping container fully prepared for delivery. The inspection level shall be S-2 in accordance with MIL-STD-105 and the AQL shall be 4.0 defects per hundred units.

TABLE II. Classification of preparation for delivery defects

Examine	Defects
Markings (interior and exterior)	Omitted, incorrect, illegible, of improper size, location, sequence, or method of application.
Materials	Any component missing, or damaged.
Workmanship	Inadequate application of components such as incomplete closure of container flaps, loose strapping, inadequate stapling. Distortion of container.

## 5. PREPARATION FOR DELIVERY

5.1 Packaging. Packaging shall be level A, B, or C, as specified (see 6.2).

### 5.1.1 Level A or B.

5.1.1.1 Safety shoes. Each pair of shoes shall be wrapped in kraft paper, secured with tape or packaged in a box conforming to PPP-B-566, PPP-B-665, or PPP-B-676.

5.1.1.2 Ladder levelers. Each pair of ladder levelers shall be packaged in a box conforming to PPP-B-636, class domestic.

RR-S-1862

5.1.2 Level C. Shoes or levelers, of one description, shall be packaged to afford adequate protection against damage during known favorable conditions of shipment and storage from the supply source to the receiving activity. The supplier may use his standard practice when it meets this requirement.

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

5.2.1 Level A.

5.2.1.1 Safety shoes. Safety shoes, of one description, shall be packed in a snug-fitting box conforming to PPP-B-636, class weather resistant. Closure shall be in accordance with the appendix to the box specification.

5.2.1.2 Ladder levelers. Ladder levelers, of one description, shall be packed in a box conforming to PPP-B-636, class weather resistant. Closure shall be in accordance with the appendix to the box specification.

5.2.2 Level B.

5.2.2.1 Safety shoes. Twenty-four (24) pairs of shoes, of one description, shall be packed in a box conforming to PPP-B-636, class domestic. Closure shall be in accordance with the appendix to the box specification.

5.2.2.2 Ladder levelers. Twelve (12) pairs of levelers, of one description, shall be packed in a box conforming to PPP-B-636, class domestic. Closure shall be in accordance with the appendix to the box specification.

5.2.3 Level C. Shoes or levelers, shall be packed to afford adequate protection against physical and environmental damage during shipment, handling, and limited storage. Containers shall be in accordance with National Motor Freight Classification Rules or Uniform Freight Classification Rules, as applicable.

5.3 Marking. In addition to markings required by the contract or order, interior packages and shipping containers shall be marked in accordance with Fed. Std. No. 123 or MIL-STD-129, as applicable.

6. NOTES

6.1 Intended use.

6.1.1 Ladder safety shoes. Safety shoes with nonslip bases, in accordance with this specification, are intended for use on metal or wood portable ladders to increase the holding quality of the ladder in the upright or working position on smooth or slippery surfaces.

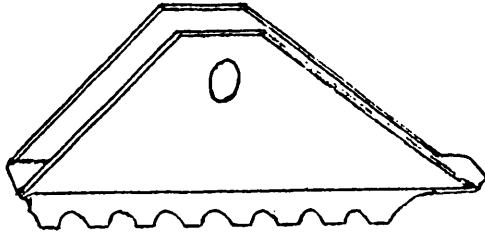
6.1.2 Ladder leveling devices. Ladder leveling devices, in accordance with this specification, are intended to increase the stability of metal or wood portable ladders placed in the upright or working position on an uneven surface.

6.2 Ordering data. Purchasers should select the preferred options permitted herein, and include the following information in procurement documents:

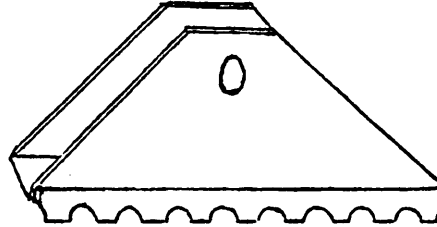
- (a) Title, number, and date of this specification.
- (b) Type, class, and style (see 1.2.1).
- (c) Size of lot, if different (see 4.2.1).
- (d) Selection of applicable levels of packaging and packing required (see 5.1 and 5.2).

RR-S-1862

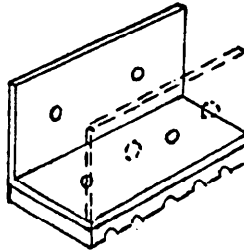
6.3 Illustrations. The illustrations contained herein are for the convenience of identification. They are not intended to preclude the purchase of ladder safety shoes or ladder leveling devices of similar design which are otherwise in accordance with the requirements of this specification.



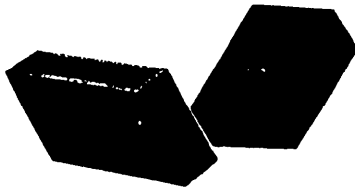
Style 1.



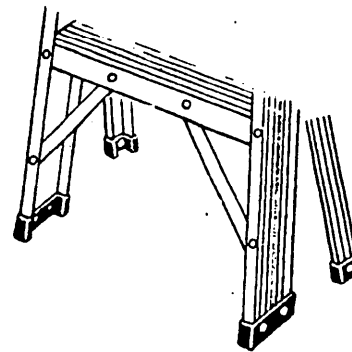
Style 2.



Style 3.



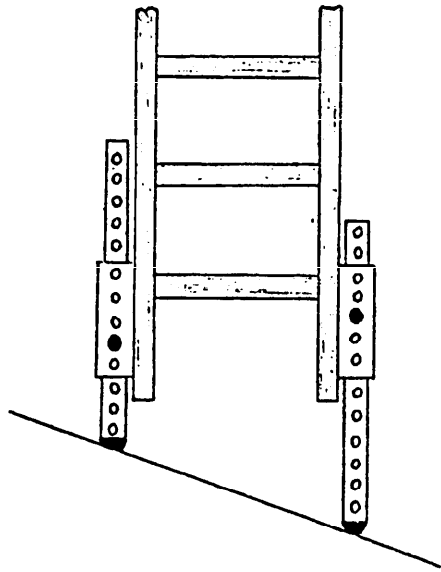
Style 4 (wood ladders).



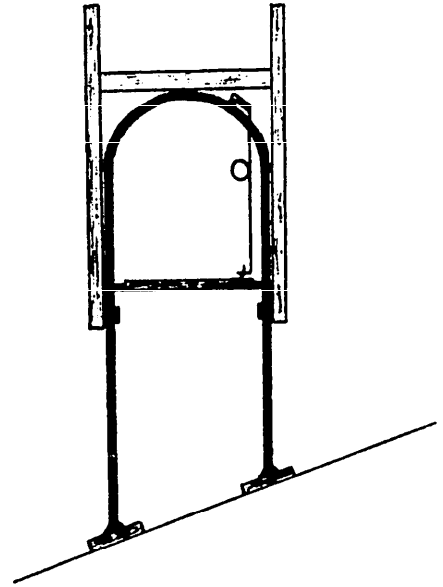
Style 4 (metal ladders).

FIGURE 1

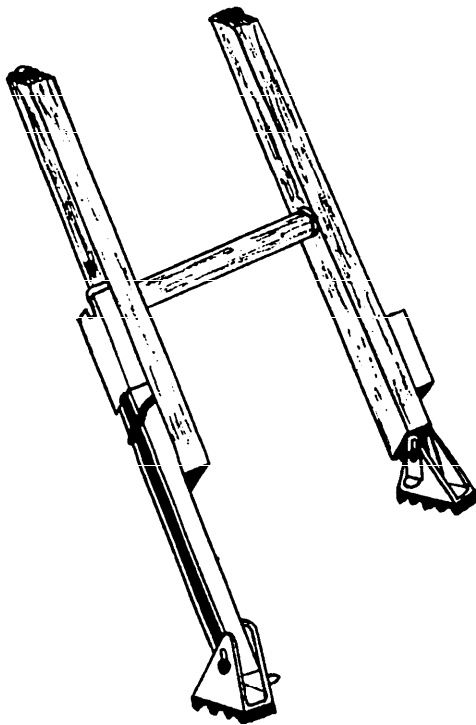
RR-S-1862



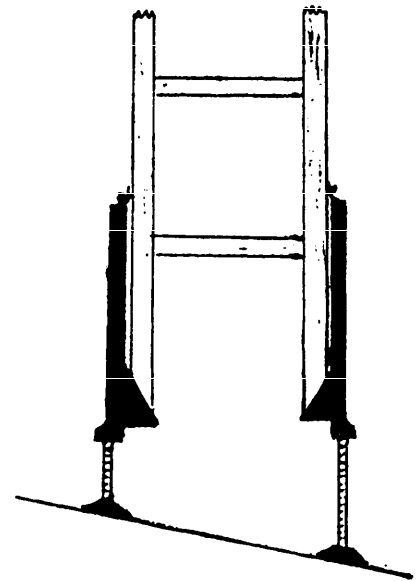
Style 5.



Style 6.



Style 7.



Style 8.

FIGURE 2

RR-S-1862

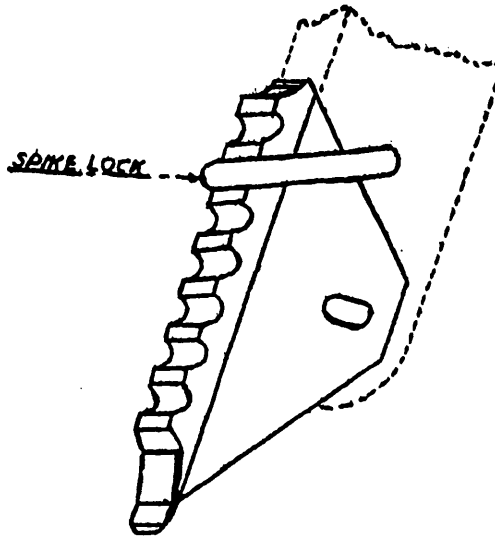


FIGURE 3

MILITARY CUSTODIAN:

Army - ME

Review activity:

Army - CS

User activities:

Army - CE, AV

Navy - YD

Preparing activity:

GSA - FSS

Civil Agency Coordinating Activity:

GSA - FSS

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Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See Section 2 of this specification to obtain extra copies and other documents referenced herein. Price 30 cents each.