

42 14C

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Underwriters Laboratories Inc.®



Subject 1123

12 Laboratory Drive
 Research Triangle Park, NC 27709
 October 14, 1996

TO: Consumer Advisory Council of Underwriters Laboratories Inc.,
 Marine Council of Underwriters Laboratories Inc.,
 Subscribers to UL's Standards Service for Marine Buoyant Devices
 Subscribers to UL's Listing Service for Commercial Special Use Devices (OPZY), Marine
 Near-Shore Buoyant Vests (OQFZ), and Life Preservers and Lifejackets (OTPS)

SUBJECT: Impact Speed Markings for Personal Flotation Devices

Currently, Underwriters Laboratories requires impact tests on Personal Flotation Devices (PFDs) to determine that no mechanical damage, such as tears, rips, loosening of seams, breakage or distortion of hardware occurs which is sufficient to affect the performance of the device. UL tests devices at 35, 50, 75, and 100 miles per hour, as requested by the manufacturers, for strength to determine whether the device can withstand the impact and still be serviceable for further use. Personal protection from impact at any speed is not evaluated.

UL is aware that "impact speed" markings, e.g., 35, 50, 75, 100 miles per hour are being used on Personal Flotation Devices in places other than on the UL Listing Mark along with product names or identifiers that have the potential to mislead users to believe that the Personal Flotation Device offers personal protection from impact at the indicated speed.

Paragraph 36.1.5 of UL 1123, the Standard for Marine Buoyant Devices, states "A device shall not have markings which modify or contradict the intent of the required markings." The "miles per hour" on the device (other than on the UL Listing Mark) may be construed to modify or contradict the intent of the impact class statement that is currently required by the standard UL Listing Mark on the inside of the device.

The public may be misled to think the devices which have "miles per hour" on the device other than on the UL Listing Mark will offer them protection from personal injury at the indicated speed. The advertising materials that have been reviewed may also mislead users to believe that those devices protect the user at the indicated speed while riding and/or skiing if they are wearing the device.

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In accordance with the current UL 1123 requirements noted above, UL is hereby notifying the PFD industry to remove all references to the "miles per hour" from the device (other than on the UL Listing Mark) and to eliminate any variations of "impact", "protect", "armor", or any other name that implies personal protection. Manufacturers must remove the inappropriate references and/or names which may imply impact protection for all devices no later than January 27, 1997. This requirement applies to publication materials, hang tags, and advertising materials. No fabric piece parts that bear any "miles per hour" marking (other than on the UL Listing Mark) or names which may imply impact protection will be accepted after the cutoff date.

Any markings which suggest or imply, through words or graphics, a coverage or use not consistent with the UL evaluation shall not be permitted. For example, a hang tag on a Type V device saying, "High Speed Protection" is not acceptable because personal protection is not part of UL's evaluation.

UL will be available to assist in the review of devices, publications, and advertising materials as needed. UL's Follow-Up Service Representatives will assist in bringing manufacturers into compliance. Should you have any questions, please contact Steve Winkler (919-549-1671) or Dan Ryan (919-549-1658). Thank you for your cooperation.

UNDERWRITERS LABORATORIES, INC.



SARA A. GRAHAM
Sr. Engineering Assistant
Follow-Up Services

Reviewed by:



BOB CRANE
Managing Engineering
Follow-Up Services

SR: BCA/SMB

Underwriters Laboratories Inc. (UL)
333 Pfingsten Road
Northbrook, IL 60062-2096

UL Standard for Safety
for
Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs, UL 14C
Sixth Edition, Dated December 13, 1993

Revisions: This Standard contains revisions through and including October 10, 1996.

A change is indicated by a note following the affected item. The note is preceded and followed by an asterisk.

The revisions dated October 10, 1996 include a reprinted title page (page 1) for this Standard.

As indicated on the title page (page 1), this UL Standard for Safety is an American National Standard. Attention is directed to the note on the title page of this Standard outlining the procedures to be followed to retain the approved text of this ANSI/UL Standard.

As indicated on the title page (page 1), this UL Standard for Safety has been adopted by the Department of Defense.

The master for this Standard at UL's Northbrook Office is the official document insofar as it relates to a UL service and the compliance of a product with respect to the requirements for that product and service, or if there are questions regarding the accuracy of this Standard.

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The requirements in this Standard are now in effect, except for those paragraphs, sections, tables, figures, and/or other elements of the Standard having future effective dates as indicated in the note following the affected item. The prior text for requirements that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.

New product submittals made prior to a specified future effective date will be judged under all of the requirements in this Standard including those requirements with a specified future effective date, unless the applicant specifically requests that the product be judged under the current requirements. However, if the applicant elects this option, it should be noted that compliance with all the requirements in this Standard will be required as a condition of continued Listing and Follow-Up Services after the effective date, and understanding of this should be signified in writing.

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This Standard consists of pages dated as shown in the following checklist:

Page	Date
tr1 – tr4	October 10, 1996
1	December 13, 1993 (Reprinted October 10, 1996)
2	October 10, 1996
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tr3

7	February 8, 1996
8 - 20	December 13, 1995
a1, a2	December 13, 1993
b1 - b4	December 13, 1995

No Text on This Page

DECEMBER 13, 1993

(Title Page Reprinted: October 10, 1996)

**1****UL 14C****Standard for**
**Swinging Hardware for Standard
Tin-Clad Fire Doors Mounted Singly and in Pairs**

First Edition – March, 1917

Second Edition – May, 1943

Third Edition – September, 1968

Fourth Edition – June, 1973

Fifth Edition – January, 1979

Sixth Edition**December 13, 1993**

Approval as an American National Standard (ANSI) covers the numbered paragraphs on pages dated December 13, 1993 and February 8, 1996. These pages should not be discarded when revised or additional pages are issued if it is desired to retain the ANSI approved text.

An effective date included as a note immediately following certain requirements is one established by Underwriters Laboratories Inc.

Approved as ANSI A133.1-1968, June 4, 1968

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Approved as ANSI/UL 14C-1978, October 4, 1978

Approved as ANSI/UL 14C-1978 (R1984), August 7, 1984

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The Department of Defense (DoD) has adopted UL 14C on October 29, 1984. The publication of revised pages or a new edition of this standard will not invalidate the DoD adoption.

Revisions of this standard will be made by issuing revised or additional pages bearing their date of issue. A UL Standard is current only if it incorporates the most recently adopted revisions, all of which are itemized on the transmittal notice that accompanies the latest set of revised requirements.

ISBN 0-55989-509-8**COPYRIGHT © 1979, 1996 UNDERWRITERS LABORATORIES INC.**

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**Underwriters Laboratories Inc.®**A not-for-profit organization dedicated to public safety
and committed to quality service**February 8, 1996****Revision pages for****Standard for****Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs****UL 14C, Sixth Edition**

Attached to this transmittal notice is a revision of the sixth edition of UL 14C.

A CHANGE ON A PAGE DATED FEBRUARY 8, 1996 IS INDICATED BY A SMALL PRINT NOTE FOLLOWING THE AFFECTED ITEM, PRECEDED AND FOLLOWED BY AN ASTERISK.

THIS REVISION IS BEING ISSUED TO CORRECT AN ERROR TO FIGURE 5.1 ON PAGE 7. THE REQUIREMENTS ARE NOW IN EFFECT.

Attention is directed to the note on the title page of this standard outlining the procedure to be followed to retain the Department of Defense approved text of UL 14C.

Revised and/or additional pages may be issued from time to time.

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1

UL 14C

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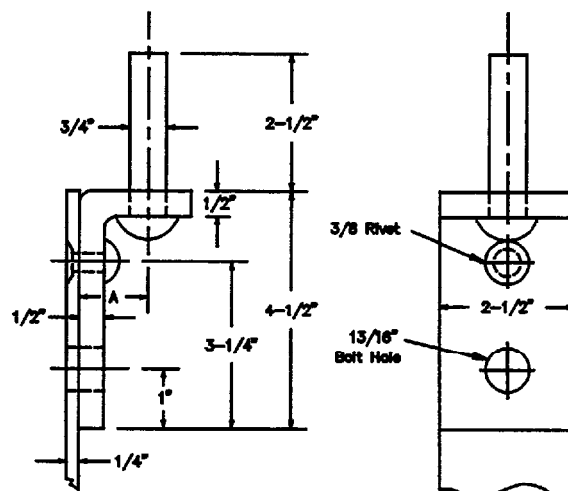
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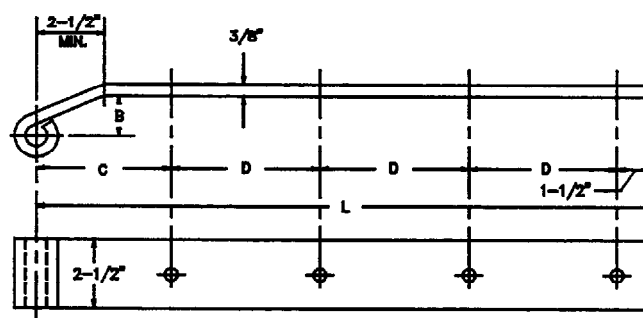
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Figure 5.1
Hinge strap and hinge bracket and bolt details



Hinge Bracket, Showing Attachment To Hinge Wall Strip

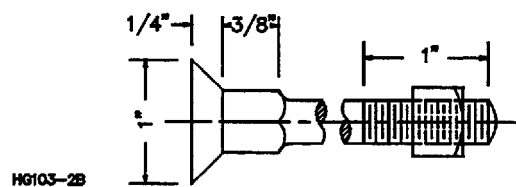


Hinge Strap

- | | |
|--|---------------------------------|
| $A = \begin{cases} 1-3/8 \text{ inches for 3-ply doors} \\ 1 \text{ inch for 2-ply doors} \end{cases}$ | $C = \text{Not over 8 inches}$ |
| $B = \begin{cases} 1-1/8 \text{ inches for 3-ply doors} \\ 3/4 \text{ inch for 2-ply doors} \end{cases}$ | $D = \text{Not over 12 inches}$ |
| | $L = \text{See Table 5.2}$ |

Hinge Strap and Hinge Bracket, Showing Attachment to Hinge Wall Strip.

Hinge Strap Bolt



Note: See Appendix A for SI Equivalents.

Figure 5.1 revised February 8, 1996

5.2.2 When hinge wall strips are included, the hinge brackets shall be riveted to the strips at the factory.

5.2.2 revised December 13, 1995

5.2.3 When hinge wall strips are not provided, the hinge brackets shall be provided with two 9/16 inch (14.3 mm) bolt holes. A bracket shall be at least 1-1/2 inches (38 mm) wide, and the vertical leg shall be not less than 4-1/2 inches (115 mm) long. The length of the horizontal leg varies according to the type of installation.

5.2.3 revised December 13, 1995

5.2.4 When hinge wall strips are not provided, a bolt for securing a hinge bracket to a steel frame shall not be less than 1/2 inch (12.7 mm) in diameter.

5.2.4 revised December 13, 1995

5.3 Hinge wall strips

5.3.1 A hinge wall strip shall be made of steel, 2-1/2 inches (64 mm) wide and 1/4 inch (6.4 mm) thick. The length shall be equal to the distance between the top edge of the top bracket and the bottom edge of the bottom bracket. Rivet holes 13/32 inch (10.3 mm) and wall bolts holes 13/16 inch (20.6 mm) in diameter shall be provided.

5.4 Hinge wall strip bolts

5.4.1 A wall bolt for attaching hinge wall strips and brackets to a wall shall be 3/4 inch (19.1 mm) in diameter, the length to depend on the wall thickness.

5.5 Bolts for attaching hinge straps to doors

5.5.1 A bolt for attaching a hinge strap to a door shall be a 3/8 inch (9.5 mm) countersunk-head carriage bolt with nut, 3-1/4 inches (83 mm) long for three-ply doors and 2-1/2 inches (64 mm) long for two-ply doors. For details, see Figure 5.1. The number of bolts used on each hinge strap depends on the size of the door, as shown in Table 5.2.

5.5.1 revised December 13, 1995

5.6 Washers

5.6.1 Washers for the above bolts shall be made of cast steel or of malleable iron. Those used with 3/4 inch (19.1 mm) bolts shall be 4 inches (102 mm) in diameter, 3/4 inch (19.1 mm) thick under the head, and not less than 1/2 inch (12.7 mm) thick at other points. Washers used with 1/2 inch (12.7 mm) bolts shall be 3 inches (76 mm) in diameter, 1/2 inch (12.7 mm) thick under the head, and not less than 3/8 inch (9.5 mm) thick at other points.

5.7 Hinge locations

5.7.1 Upper and lower hinge straps shall be spaced not less than 8 inches (203 mm) nor more than 14 inches (356 mm) from the top and bottom of the door.

5.7.2 The number of hinges is based on the door sizes, not on the size of the opening. See Table 5.1. For widths or heights involving fractions of an inch, the next higher full inch is to be used.

5.7.3 The length of a hinge and the number of holes for attachment are based on the door size, not on the size of the opening. See Table 5.2. For widths involving fractions of an inch, the next higher full inch is to be used.

**Underwriters Laboratories Inc.®**A not-for-profit organization dedicated to public safety
and committed to quality service**December 13, 1995****Revision pages for****Standard for****Swinging Hardware for Standard Tin-Clad Fire Doors Mounted Singly and in Pairs****UL 14C, Sixth Edition**

Attached to this transmittal notice is a revision of the sixth edition of UL 14C.

A CHANGE ON A PAGE DATED DECEMBER 13, 1995 IS INDICATED BY A SMALL PRINT NOTE FOLLOWING THE AFFECTED ITEM, PRECEDED AND FOLLOWED BY AN ASTERISK.

THIS REVISION IS BEING ISSUED TO MAKE EDITORIAL CHANGES. THESE REVISED REQUIREMENTS ARE NOW IN EFFECT.

Attention is directed to the note on the title page of this standard identifying that the Department of Defense has adopted the text of UL 14C.

Revised and/or additional pages may be issued from time to time.

With the inclusion of the accompanying material, the standard consists of pages dated as shown in the following checklist:

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FOREWORD

A. This Standard contains basic requirements for products covered by Underwriters Laboratories Inc. (UL) under its Follow-Up Service for this category within the limitations given below and in the Scope section of this Standard. These requirements are based upon sound engineering principles, research, records of tests and field experience, and an appreciation of the problems of manufacture, installation, and use derived from consultation with and information obtained from manufacturers, users, inspection authorities, and others having specialized experience. They are subject to revision as further experience and investigation may show is necessary or desirable.

B. The observance of the requirements of this Standard by a manufacturer is one of the conditions of the continued coverage of the manufacturer's product.

C. A product which complies with the text of this Standard will not necessarily be judged to comply with the Standard if, when examined and tested, it is found to have other features which impair the level of safety contemplated by these requirements.

D. A product employing materials or having forms of construction differing from those detailed in the requirements of this Standard may be examined and tested according to the intent of the requirements and, if found to be substantially equivalent, may be judged to comply with the Standard.

E. UL, in performing its functions in accordance with its objectives, does not assume or undertake to discharge any responsibility of the manufacturer or any other party. The opinions and findings of UL represent its professional judgment given with due consideration to the necessary limitations of practical operation and state of the art at the time the Standard is processed. UL shall not be responsible to anyone for the use of or reliance upon this Standard by anyone. UL shall not incur any obligation or liability for damages, including consequential damages, arising out of or in connection with the use, interpretation of, or reliance upon this Standard.

F. Many tests required by the Standards of UL are inherently hazardous and adequate safeguards for personnel and property shall be employed in conducting such tests.

INTRODUCTION

1 Scope

1.1 These requirements apply to hardware for swinging fire doors which have demonstrated in fire tests fire-resistive properties warranting their use with two-ply and three-ply tin-clad fire doors tested in accordance with the Standard for Fire Tests of Door Assemblies, UL 10B (ASTM E152, NFPA No. 252).

1.2 Requirements for the location and time rating required for fire doors are contained in codes such as the BOCA National Building Code, Standard Building Code (for SBCCI), and Uniform Building Code (for ICBO). Requirements for the installation of swinging two-ply and three-ply tin-clad fire doors are included in the Standard for Fire Doors and Windows, NFPA No. 80.

1.2 revised December 13, 1995

1.3 The hardware included in these requirements is intended for mounting standard two-ply and three-ply tin-clad swinging fire doors for protection of openings not exceeding the dimensions for the hourly classifications indicated in Table 1.1.

1.4 These requirements do not cover automatic releasing or closing mechanisms.

1.5 A product that contains features, characteristics, components, materials, or systems new or different from those covered by the requirements in this standard, and that involve a risk of fire, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the acceptable level of safety as originally anticipated by the intent of this standard. A product whose features, characteristics, components, materials, or systems conflict with specific requirements or provisions of this standard cannot be judged to comply with this standard. Where considered appropriate, revision of requirements shall be proposed and adopted in conformance with the methods employed for development, revision, and implementation of this standard.

1.5 revised December 13, 1995

Table 1.1
Limitations in types and dimensions

Type of door	Maximum area		Maximum width		Maximum height		Hourly rating or class designation
	square feet	m ²	feet	m	feet	m	
3 - ply, single	—	—	6	1.8	12	3.6	3, 1-1/2, 1, 3/4
3 - ply, in pairs	—	—	10	3.1	12	3.6	3, 1-1/2, 1, 3/4
2 - ply, single	—	—	6	1.8	10	3.1	1-1/2, 1, 3/4
2 - ply, in pairs	80	7.4	10	3.1	10	3.1	1-1/2, 1, 3/4

Table 1.1 revised December 13, 1995

Figure 1.1
Typical arrangement of hardware

Figure 1.1 deleted December 13, 1995

2 Units of Measurement

2.1 When a value for measurement is followed by a value in other units in parentheses, the second value is only approximate. The first stated value is the requirement. SI units as employed are in accordance with the Standard for Practice for Use of the International System of Units (SI) (the Modernized Metric System) ASTM E380-91a.

2.1 revised December 13, 1995

2.2 The tolerance for all dimensions shall be as specified with the dimension. Where no tolerance is shown, the tolerances specified in Appendix B shall apply. See Appendix B for specifications.

2.2 added December 13, 1995

3 Undated References

3.1 Any undated reference to a code or standard appearing in the requirements of this standard is to be interpreted as referring to the latest edition of that code or standard.

CONSTRUCTION

4 General

4.1 Each complete set of hardware for swinging tin-clad fire doors shall include:

- a) For Doors Mounted Singly – Wall strips, except for openings supplied with standard steel frames, hinge brackets, hinge straps, latch straps, latch catches, connecting bar, operating handle mechanism, latch spring, and required washers, rivets, and bolts to mount hardware on the door and wall.
- b) For Doors Mounted in Pairs – In addition to the above members, top and bottom bolts and top and bottom 1/2 keepers for standing doors.

4.2 All hardware parts shall be made of wrought or malleable iron or steel.

4.3 The number and spacing of hinges and latches depend on the door sizes. See Tables 5.1 and 5.2.

5 Hinges for Doors Mounted Singly and in Pairs

5.1 Hinge straps

5.1.1 A hinge strap shall be made of steel 2-1/2 inches (64 mm) wide and 3/8 inch (9.5 mm) thick, shall have an eye 13/16 inch (20.6 mm) in diameter in one end, and shall be provided with bolt holes 7/16 inch (11.1 mm) in diameter at not more than 12 inch (305 mm) centers. The first hole shall be located not more than 6 inches (152 mm) from the center of the hinge eye, and the last hole shall be located at not exceeding 1-1/2 inches (38 mm) from the opposite end and shall be offset at the hinge eye as shown in Figure 5.1.

5.2 Hinge brackets

5.2.1 A hinge bracket secured to a hinge wall strip shall be made of steel 2-1/2 inches (64 mm) wide by 1/2 inch (12.7 mm) thick, bent at right angles. The vertical leg shall be 4-1/2 inches (115 mm) long. Length of the horizontal leg depends upon the type of installation. The vertical leg shall be provided with a rivet hole 13/32 inch (10.3 mm) in diameter and a wall bolt hole 13/16 inch (20.6 mm) in diameter. The horizontal leg shall be provided with a round-shouldered steel pin 3/4 inch (19.1 mm) in diameter extending 2-1/2 inches (64 mm) from the bracket and riveted over as shown in Figure 5.1.