

UL 1177

Buoyant Vests



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

UL Standard for Safety for Buoyant Vests, UL 1177

Third Edition, Dated June 19, 2007

Summary of Topics

This new edition of ANSI/UL 1177 is a periodic re-issuance to ensure that UL's Standards remain up to date with regard to format and editorial issues such as numbering, pagination, and cross-referencing.

The new requirements are substantially in accordance with UL's Proposal(s) on this subject dated January 19, 2007 and May 4, 2007.

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.

The UL Foreword is no longer located within the UL Standard. For information concerning the use and application of the requirements contained in this Standard, the current version of the UL Foreword is located on ULStandardsInfoNet at: <http://ulstandardsinfo.net/ulforeword.html>

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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that have been revised and that have a future effective date are located after the Standard, and are preceded by a "SUPERSEDED REQUIREMENTS" notice.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
1-56	June 19, 2007

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ANSI/UL 1177-2007

UL 1177

Standard for Buoyant Vests

First Edition – January, 1982

Second Edition – July, 1999

Third Edition

June 19, 2007

The most recent designation of ANSI/UL 1177 as an American National Standard (ANSI) occurred on June 6, 2007.

This ANSI/UL Standard for Safety, which consists of the Third edition is under continuous maintenance, whereby each revision is ANSI approved upon publication.

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

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. Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <http://csds.ul.com>.

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INTRODUCTION

1 Scope

1.1 These requirements cover marine buoyant vests that use kapok, fibrous glass, or unicellular polyvinyl chloride or polyethylene foam flotation material, and are intended to be used in accordance with the applicable Regulations of the United States Coast Guard (USCG).

1.2 The devices covered by these requirements are intended for USCG approval under 46 CFR 160.047, 160.052, or 160.060.

2 Units of Measurement

2.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

3 Undated References

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

4 Components

4.1 Except as indicated in 4.2, a component of a product covered by this standard shall comply with the requirements for that component.

4.2 A component is not required to comply with a specific requirement that:

- a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or
- b) Is superseded by a requirement in this standard.

4.3 A component shall be used in accordance with its rating established for the intended conditions of use.

4.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

4.5 A component part of a buoyant vest shall also comply with the Federal and Mil Spec documents referenced in 46 CFR 160.047, 160.052, and 160.060.

5 General

5.1 A device for which the intended use is indicated as "General Purpose Vest," "Boating Vest," or the like, shall be considered to include "Skiing" unless this is specifically excluded in the marking provided with the device. Statements such as "Hiking" are not considered general use statements.

6 Glossary

6.1 For the purpose of this standard, the following definitions apply.

6.2 BUOYANT INSERT PAD COVERING – The water-protective cover of plastic film that encloses kapok or fibrous glass material.

6.3 BUOYANT MATERIAL – That part of a personal flotation device (PFD) that has inherent buoyancy and that complies with the component requirements for such materials specified in Sections 11 and 24, and the Standard for Components for Personal Flotation Devices, UL 1191.

6.4 BUOYANT PAD INSERTS – A quantity of buoyant material that has been cut or formed for insertion into a buoyant vest.

6.5 CLOSING SEAM – The final structural seam sewn on a device, resulting in the containment of the buoyant material.

6.6 CLOSURES:

- a) Primary – Means of securing the device on the body that causes the device to function in its intended manner without employing any other means of fastening the device to the body.
- b) Secondary – A closure that, when used alone, does not make the device appear to be donned as intended and is not required to be closed in order to comply with the requirements of this standard.

6.7 DEVICE – Any marine buoyant vest.

6.8 FOAM – Closed-cell foamed polymeric material.

6.9 FREEBOARD – A distance measured perpendicularly from the surface of the water to the lowest point where the wearer's respiration may be impeded.

6.10 LOCK STITCH – A stitch that will not unravel when a force is applied in the direction of the seam to any of the threads forming the stitch.

6.11 NONSTANDARD VEST – A buoyant vest that is assembled according to the manufacturer's drawings rather than according to the drawings in this standard, but determined to be equivalent to a standard vest.

6.12 OPTIONAL CONSTRUCTION – A construction element, the use or nonuse of which does not affect compliance of the device with the performance requirements of this standard.

6.13 REFERENCE VESTS – The standard USCG vests: Model AK-1 (adult); Model CKM-1 (child medium); and Model CKS-2 (child small).

6.14 SEAM – A joint consisting of a sequence or series of stitches uniting two or more pieces of material.

6.15 SERVICEABLE – Acceptable for continued intended use. Exhibits no signs of functional deterioration.

6.16 STANDARD VEST – A buoyant vest assembled according to the drawings in this standard.

6.17 STRUCTURAL SEAM – A seam that serves a functional purpose in the end product as distinguished from a decorative purpose.

6.18 TYPE II DEVICE – A device designed to turn an unconscious person from a face-down in the water to a position where the wearer's respiration is not impeded.

6.19 UNIVERSAL SIZE – A device sized for the 5th – 95th percentile of the adult U. S. population. This size shall include chest sizes 30 – 52 inches (0.76 – 1.3 m).

PART I – STANDARD KAPOK, FIBROUS GLASS, OR FOAM DEVICES

CONSTRUCTION

7 General

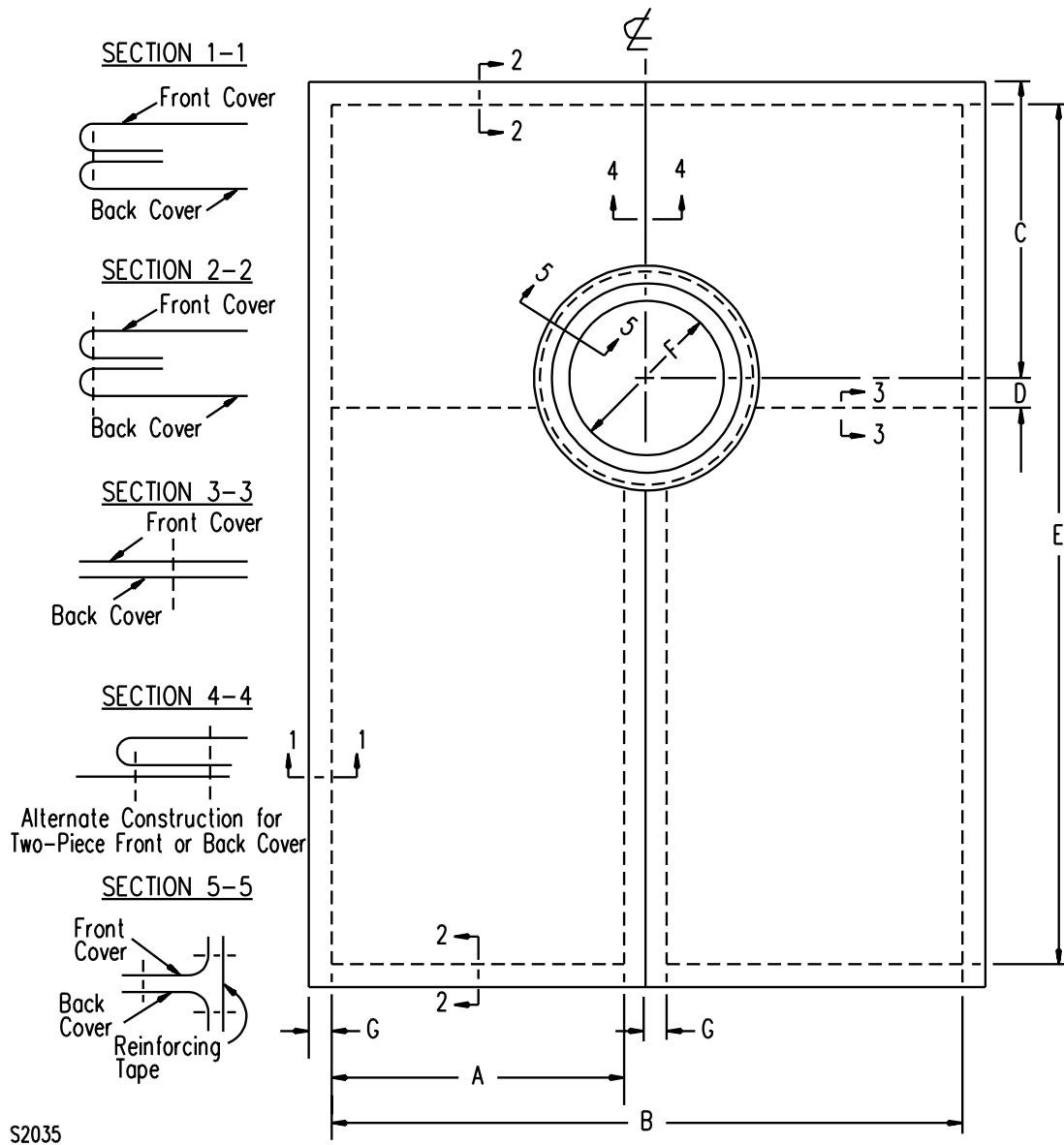
7.1 A standard device shall consist of a vest-cut envelope with collar and without a back panel, containing pads of buoyant kapok or fibrous glass material or inserts of buoyant foam material, arranged and equally distributed as illustrated in Figures 7.3 and 7.14. Standard devices shall comply with all the performance requirements specified in Part II of this standard.

7.2 A vest shall be fitted with tapes, webbing, and hardware to provide adjustment for close and comfortable fit to the bodies of various-sized wearers.

7.3 The construction and assembly of a kapok or fibrous glass vest shall be as illustrated in Figures 7.1 – 7.7.

7.4 The construction and assembly of a foam vest shall be as illustrated in Figures 7.4 – 7.14.

Figure 7.1
Kapok and fibrous glass vest cutting pattern and construction of cloth cover



Model	A	B ^a	C ^a	D ^a	E ^a	F ^a	G ^b
AK-1 and AF-1	9-1/4	18-1/2	8	1	26	4-1/2	1/2
CKM-1 and CFM-1	8-1/4	16-1/2	6-3/4	3/4	21-1/2	3	1/2
CKS-1 and CFS-1	7-1/4	14-1/2	5-7/8	5/8	18-1/2	2-1/4	1/2

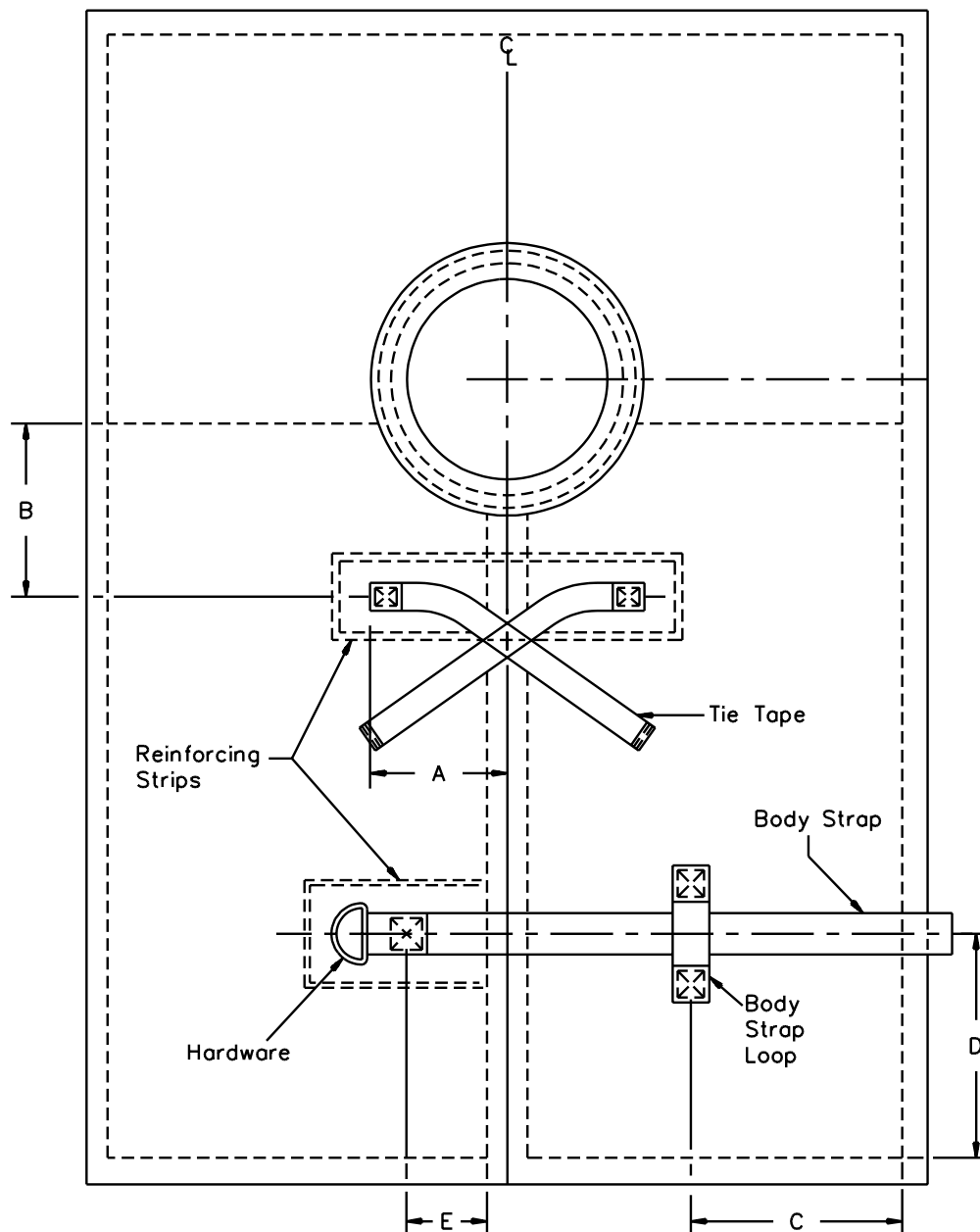
NOTE— Dimensions in inches (1 inch = 25.4 mm)

^a Dimensions plus 1/4 inch, minus 0 inch.

^b When 70 denier uncoated nylon fabric is used, pattern size shall be increased to allow for 3/8-inch (9.5 mm) minimum width.

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Figure 7.2
Kapok and fibrous glass vest locations for securing tie tapes, belt loops, and reinforcing strips to front cover



S2036

Model	A	B	C	D	E
AK-1 and AF	3	3-1/2	4-5/8	5-1/2	2
CKM-1 and CFM	3	3-1/2	4-1/8	5	2
CKS-1 and CFS	3	2-3/4	3-5/8	4-1/4	2

NOTE – Dimensions in inches (1 inch = 25.4 mm)

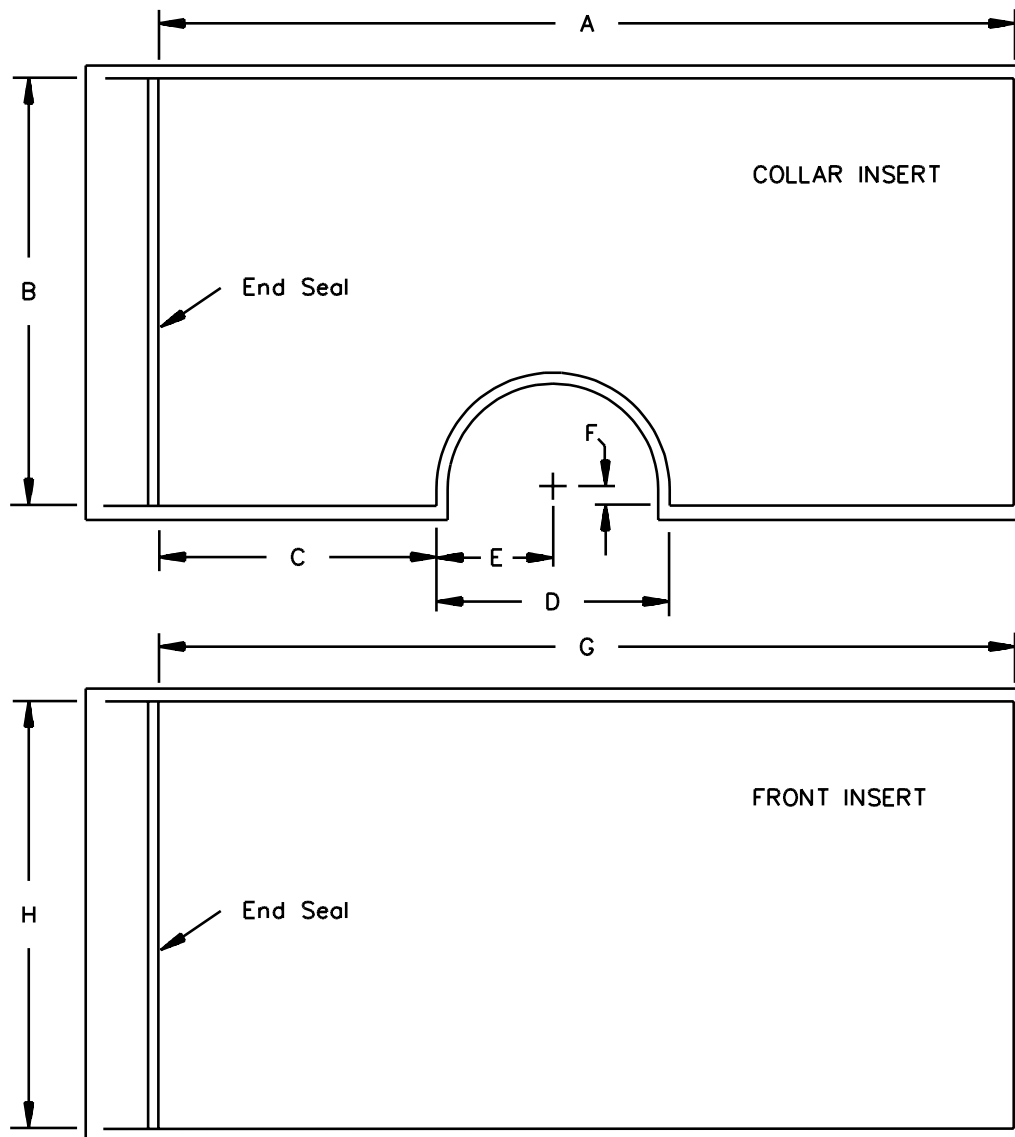
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Figure 7.3
Kapok and fibrous glass insert envelope dimensions

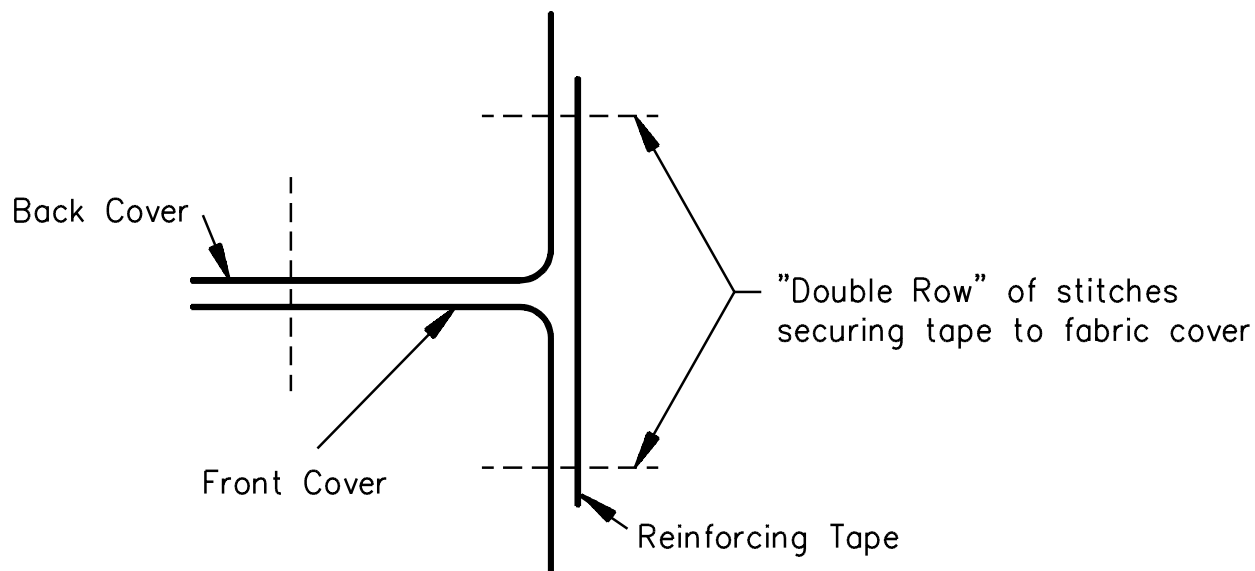


S2037

Model	A	B	C	D	E	F	G	H
AK-1 and AF	17-3/4	8-1/2	6-1/8	5	2-1/2	1-1/4	17	8
CKM-1 and CFM	15-3/4	5-7/8	3-1/2	1-3/4	1-3/4	3/4	14	7
CKS-1 and CFS	13-3/4	6	5-1/4	2-3/4	1-3/8	5/8	11-1/2	6

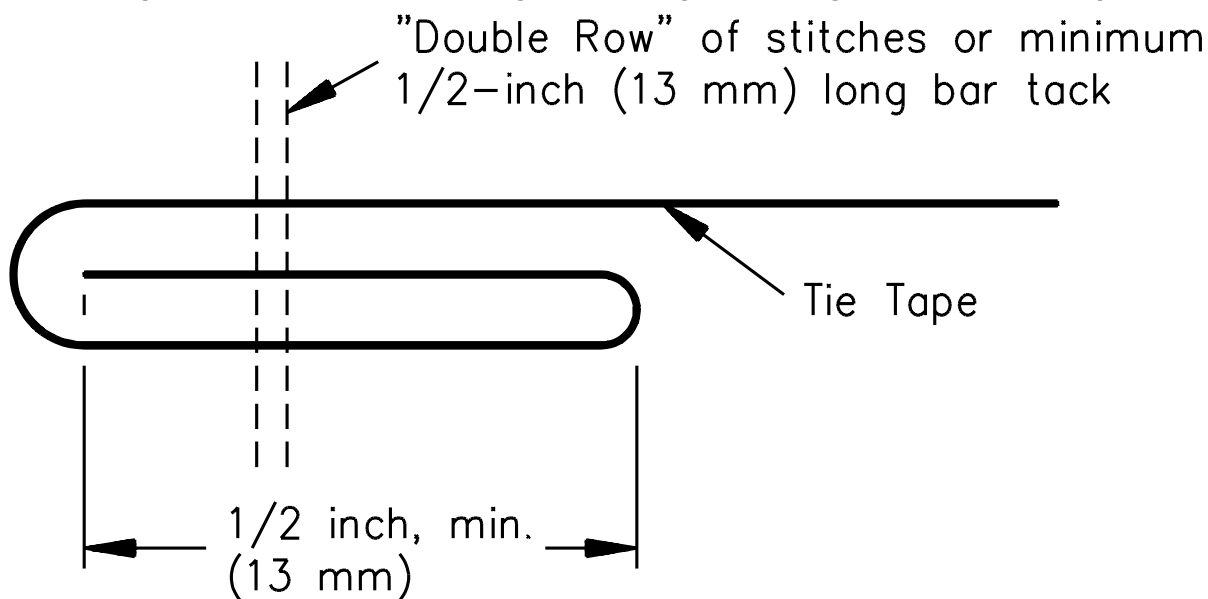
NOTE – Dimensions in inches (1 inch = 25.4 mm)

Figure 7.4
Stitching details - location of stitching and tape reinforcing to front and back cover joining at neck hole



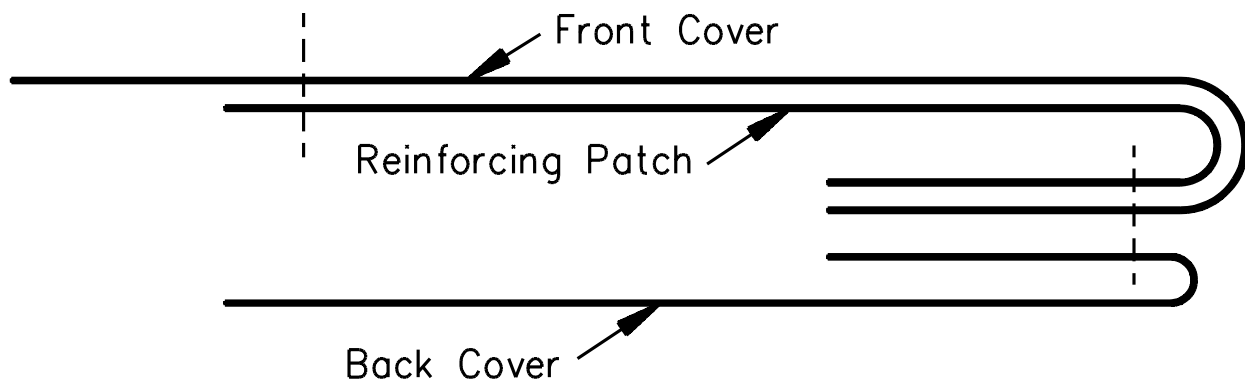
S2038

Figure 7.5
Stitching details - location of stitching and forming of webbing at free end of tie tapes



S2039

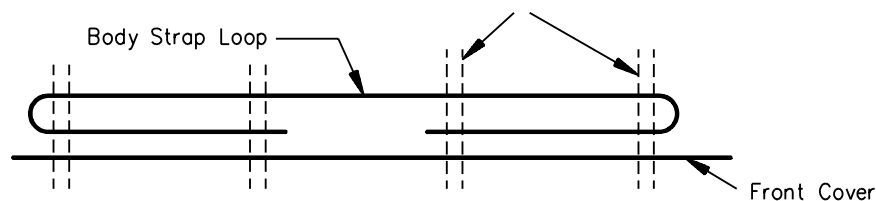
Figure 7.6
Stitching details - location of stitching and seam construction for securing reinforcing strips to front cover



S2040

Figure 7.7
Stitching details - location of stitching and seam construction for securing body strap loop to front cover

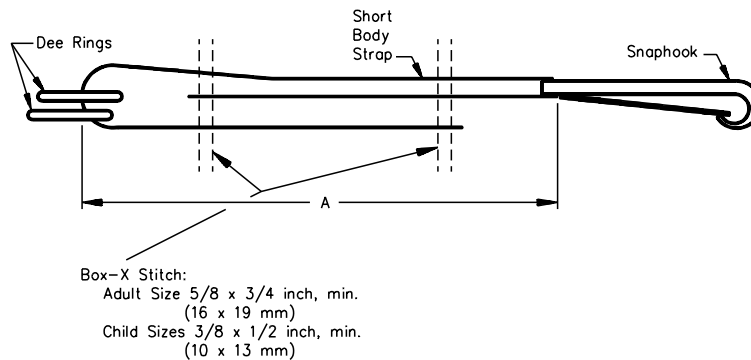
Box-X Pattern Stitch:
 Adult Size $\frac{5}{8} \times \frac{3}{4}$ inch, min.
 (16 x 19 mm)
 Child Sizes $\frac{3}{8} \times \frac{1}{2}$ inch, min.
 (10 x 13 mm)



S2041

Model	Length, inches (mm)			
	Cut		Finished	
Adult	4-1/2	(114)	3	(76)
Child, medium	4-1/2	(108)	2-3/4	(70)
Child, small	4-1/4	(108)	2-3/4	(70)

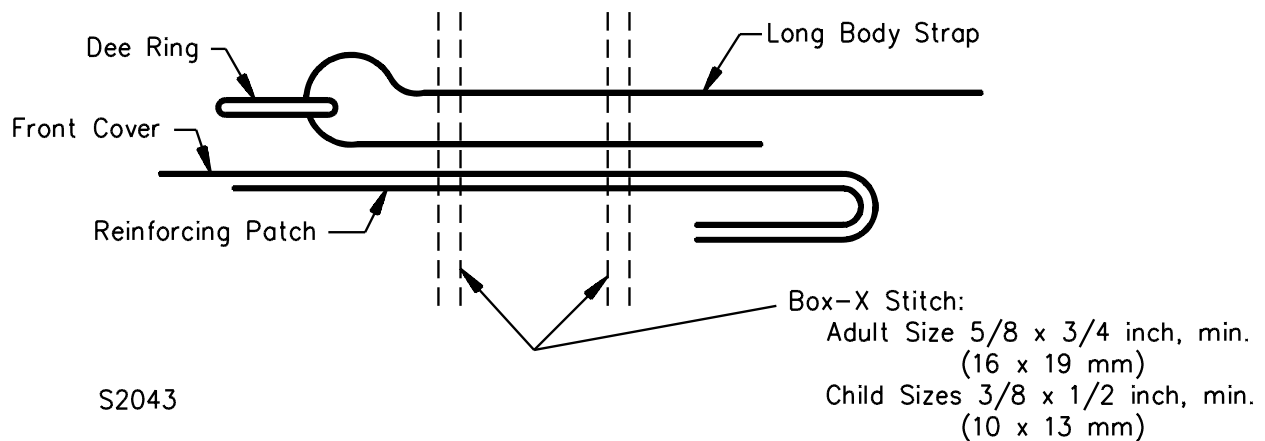
Figure 7.8
Stitching details - location of stitching and folding of webbing for securing hardware to body strap



S2042

Model	Dimensions, inches (mm) ^a	
	A	
All adult sizes	2-1/4	(57)
All child, medium	2	(51)
All child, small	2	(51)
^a ±1/4 inch, (±6 mm)		

Figure 7.9
Stitching details - location of stitching and folding of webbing for securing body strap to front cover



S2043