



Royal Canadian Mounted Police
Gendarmerie Royale du Canada

Doc. no: G.S. 1045-309
Date: 2018-03-22

Specification

Suspenders, Duty Belt

This document has 16 pages including the drawings.

This document was created in English.

The document is available in English and French.

English/Anglais
Français/French

The photograph on this page is for reference only.

RCMP VIEWING SAMPLE

A viewing sample, when available, will be supplied to the successful bidder.

This will be used for the guidance of the manufacturer in all factors not covered by this specification or referred to therein. Variation from the specification may appear in the sample in which case the specification must govern.

It may be obtained from:

Royal Canadian Mounted Police
ATTN: Uniform & Equipment Program
(440 Coventry Road, Warehouse Building)
1200 Vanier Parkway
Ottawa, Ontario
K1A 0R2

It will be sent “prepaid” and is to be returned “prepaid”.

The viewing sample must be returned to the RCMP in the same condition as received by the manufacturer. Lost or damaged viewing samples must be replaced by an identical item or the RCMP must be reimbursed for the cost of an acceptable replacement.

SPECIFICATION
SUSPENDERS, DUTY BELT

1. Definitions

- 1.1 This specification must govern the manufacture and inspection of Suspenders, Duty Belt, for use with Duty Belts. The specific item covered under this specification with stock number is as follows:
- i. 3494 Suspenders, Duty Belt / Bretelles pour ceinturon de service.
- 1.2 This specification, drawing, viewing sample, or other information issued in connection therewith, may only be used for specific enquiries, solicitations, or orders placed on behalf of the Royal Canadian Mounted Police.
- 1.3 This specification supersedes all previous specifications for Suspenders, Duty Belt.
- 1.4 This specification has been translated into French from this original English language document.

2. Applicable Specifications

- 2.1 The following publications are applicable to this specification and to the issues in effect on the date of the solicitation, unless otherwise specified.
- 2.2 **Canadian General Standards Board (CAN/CGSB);**
- | | |
|--------------------------|---|
| 4.2 No. 5.1-M90 (R2013) | Textile test methods – Unit mass of fabrics |
| 4.2 No. 6-2013 | Textile test methods – Woven fabrics count – Number of threads per unit length |
| 4.2 No. 9.1-M90 (R2013) | Textile test methods – Breaking strength of fabrics – strip method |
| 4.2 No. 12.1-M90 (R2004) | Textile test methods – Tearing strength – Single rip method |
| 4.2 No. 14-2005 | Textile test methods – Quantitative Analysis of fibre mixtures |
| 4.2 No. 26.2-94 (R2012) | Textile test methods – Determination of resistance to surface wetting (spray test) |
| 4.2 No. 26.3-2010 | Textile test methods – Determination of resistance to water penetration – Hydrostatic pressure test |

- 2.3 **US Government Mil-Spec;**
A-A-59826A Thread, Nylon.
- 2.4 **American Society for Testing and Materials (ASTM);**
D3776/D3776M-09a (2013) Standard Test Methods for Mass per unit Area (Weight) of Fabric
D5169-98 (2015) Standard Test Method for Shear Strength (Dynamic Method) of Hook and Loop Touch Fasteners
D5170-98 (2015) Standard Test Method for Peel Strength (“T” Method) of Hook and Loop Touch Fasteners.
- 2.5 **International Standards Organization (ISO);**
4920:2012 Textile fabrics — Determination of resistance to surface wetting (spray test)
7211-2:1984 Textile test methods – Woven fabrics count – Number of threads per unit length
- 2.6 **Federal Standard, Textile Test Methods; (FED-STD)**
191A-4108 Strength and Elongation, Breaking; Textile Webbing, Tape and Braided Items

3. **General Requirements**

- 3.1 The article or material covered by this specification must be free from material and manufacturing defects that may affect its appearance or serviceability. In all particulars not covered by this specification or contract documents, production must be equivalent in all respects to the drawings.
- 3.2 **Design** - The suspenders must be designed to carry and support a 57 mm wide duty belt worn by RCMP members. It must have padded shoulders with adjustable straps and belt keepers.

4. **Detail Requirements**

4.1 **Components**

- 4.1.1 **Shell Material** – The shell material must be a black 100% nylon, plain weave fabric, 500 denier with a urethane coating meeting the requirements of Table I.

- 4.1.2 **Lining Material, Spacer Mesh** – The lining material must be a 100% Polyester spacer mesh with a mass of $275 \text{ g/m}^2 \pm 14 \text{ g/m}^2$ finished with a wicking and anti-microbial treatment and thickness of $2 \text{ mm} \pm 0.5 \text{ mm}$. It must be black in colour.
- 4.1.3 **Hook and Loop Tape** – The hook and loop tape must be nylon, black in colour, with a high life cycle. The combined hook and loop must have no less than 8 P.S.I length-wise shear strength with initial peel strength of not less than 1 P.I.W. when tested to ASTM D5169-98 (2015), standard test method for shear strength [dynamic method] of hook and loop touch fasteners and ASTM D5170-98 (2015), standard test method for peel strength ["T" method] of hook and loop touch fasteners." Dimensions must be as per drawings.
- 4.1.4 **Elastic** – The elastic must be heavy duty nylon or polyester elastic, black in colour, 3.8 cm (1.5") wide with maximum elongation of 130% and recovery.
- 4.1.5 **Nylon Webbing**
- 4.1.5.1 **Nylon Webbing, Straps** – The nylon webbing for the shoulder straps must be a durable nylon webbing, luggage quality, black in colour measuring 3.8 cm (1½") wide and $0.043'' \pm 0.01''$ thick. It must have a minimum tensile strength of 1500 lbs. as per Federal Standard 191A test method #4108. Tape Craft #N0015S is known to meet the requirements.
- 4.1.5.2 **Nylon Webbing, Keepers** – The webbing for the keepers must be a durable nylon webbing, luggage quality, black in colour measuring 2.54 cm (1") wide and $0.04'' \pm 0.01''$ thick. It must have a minimum tensile strength of 1000 lbs. as per Federal Standard 191A test method #4108. Tape Craft #N0015-1"-YD001-352 is known to meet the requirements
- 4.1.6 **Neoprene Padding** – The neoprene padding must be made of 100% Nylon on the outer surface and 10% Nylon/ 90% Neoprene as the inner content. It must be $725 \text{ g/m}^2 \pm 25 \text{ g/m}^2$, 2.5 mm thick and black in colour.
- 4.1.7 **Hardware**
- 4.1.7.1 **Sliplock Buckle** – The sliplock buckle must be plastic, made of high quality impact resistant nylon, black in colour 3.8 cm (1½") wide. National Molding Product 7279 is known to meet this requirement.

- 4.1.7.2 **Swivel Snaphook** – The swivel snaphook must be plastic, made of high quality impact resistant nylon, black in colour 4 cm wide. National Molding Product 5575 is known to meet the requirement.
- 4.1.7.3 **Double D-Ring** – The double D-ring must be plastic, made of high quality impact resistant acetal, black in colour 2.5 cm (1”) wide. National Molding product 7456 is known to meet the requirement.
- 4.1.7.4 **Common Loop** – The loop must be plastic, made of high quality impact resistant nylon, black in colour 3.8 cm (1½”) wide. National Molding Product 5193 is known to meet this requirement.
- 4.1.8 **Thread** – The thread must be a nylon continuous filament bonded, Type II, Class A, size B (Tex 45), meeting U.S. government standard A-A-59826A. It must be black in colour.
- 4.1.9 **Grosgrain** – The ribbon must be heavy duty nylon grosgrain binding tape, black in colour 2 cm wide, 0.3 mm thickness.
- 4.1.10 **Dome Fastener** – The dome fastener must be a heavy duty type 24 ligne fastener. All metal parts to be brass with a 15 mm matte black, powder coated cap.
- 4.2 **Size and Dimensions** – The Suspenders, Duty Belt to this specification must be supplied in the sizes specified by the RCMP and to the dimensions given in the drawings forming part of this specification, and the viewing samples.
- 4.3 **Construction**
- 4.3.1 **Stitching** – All stitching must be lockstitch. There must be no less than two or more than three stitches per centimeter. The beginning and ending of all stitching must be securely backstitch tacked, unless secured by other stitching. Care must be taken to avoid broken threads or skipped stitches.
- 4.3.2 **Back Anchor Patch and Back Straps** – The anchor patch must be made from shell material as specified in Para. 4.1.1 and lining material as specified in Para. 4.1.2. It must be shaped and dimensioned as shown in drawing # 3. Two pieces of elastic as specified in Para. 4.1.4 must be cut 9 cm long for regular size and 14 cm long for tall size. Each elastic must be inserted to a common loop as specified in Para. 4.1.7.4 and folded in half and with both ends inserted along the bottom straight edge of the back anchor patch. The bottom portion of the back adjustable straps must be made

of nylon webbing as specified in Para. 4.1.5.1. One end must be inserted into the other side of the common loop turned 2 cm and permanently sewn with thread as specified in Para. 4.1.8. A bar tack the full width of the strap must be used to secure the strap. All ends of the 3.8 cm nylon webbing must be heat sealed to prevent fraying. The strap is then fed through the sliplock buckle as specified in Para. 4.1.7.1 and then through the swivel snaphook as specified in Para. 4.1.7.2 then folded back into the back of the sliplock buckle. The end must be folded 3 cm and be permanently attached by way of a bar tack the full width of the strap to the underside of the sliplock buckle. Each back strap must be shaped and dimensioned as per drawings # 2 and # 3.

- 4.3.3 **Back Anchor Patch and Front Straps** – The front adjustable straps must be made of nylon webbing as specified in Para. 4.1.5.1. One end of each strap must be inserted into the angled side of the back anchor strap. The other end of the strap must be inserted into the padded shoulder pad as described in Para. 4.3.4. The strap is then fed through the sliplock buckle as specified in Para. 4.1.7.1 and then through the swivel snaphook as specified in Para. 4.1.7.2 then folded back into the back of the sliplock buckle. The end must be folded 7 cm and be permanently attached by way of a bar tack the full width of the strap to the underside of the sliplock buckle. All ends of the 3.8 cm nylon webbing must be heat sealed to prevent fraying. Each front strap must be shaped and dimensioned as per drawing # 4.
- 4.3.4 **Padded Shoulder Pad** – The padded shoulder pad must be made from shell material as specified in Para. 4.1.1, lining material as specified in Para. 4.1.2 and neoprene padding as specified in Para. 4.1.6. The neoprene padding must be inserted between the shell material and the lining material. A piece of shell material must be cut and finished 7 cm wide by 15.5 cm long. Each end must be double folded and stitched using 7 mm gauge. The shell piece must be centred on the shell side of the shoulder pad and secured on each side. The complete rounded edge of the shoulder pad must be finished with grosgrain as specified in Para. 4.1.9, folded and stitched with 3 mm gauge. The finished shoulder pads must be shaped and dimensioned as shown in drawing # 4.
- 4.3.5 **Belt Keeper** – The belt keeper must be made of the nylon webbing, 2.5 cm wide as specified in Para. 4.1.5.2. It must be a double layer of webbing with each end meeting each other and covered with the loop tape as specified in Para. 4.1.3 measuring 2.5 cm by 5 cm ± 0.5 cm. The double d-ring as specified in Para. 4.1.7.3 must be slid onto the keeper with d-ring facing the same side as the loop tape (outer side of the keeper). A piece of hook tape measuring 2.5 cm by 3 cm must be sewn to the inner side of the keeper at the end directly under the loop tape. The male

portion of two dome fasteners as specified in Para. 4.1.10 must be applied on top of the loop tape as shown in drawing # 5. Hook tape as specified in Para. 4.1.3 measuring 2.5 cm by 5 cm \pm 0.5 cm must be applied to the other end of the keeper on the inner side. The female portion of two dome fasteners as specified in Para. 4.1.10 must be applied on the outer side of the keeper through the hook tape as shown in drawing # 5. A piece of hook tape measuring 2.5 cm by 3 cm must be sewn to the outer side of the keeper, starting 8 cm \pm 0.5 cm from the end with the male portion dome fasteners. A piece of loop tape measuring 2.5 cm by 2.5 cm must be sewn to the inner side of the keeper, starting 11.5 cm \pm 0.5 cm from the end with the male portion dome fasteners. The finished keepers must be shaped and dimensioned as shown in drawing # 5.

4.3.6 **Marking** – Each set of suspenders must have a label sewn to the back side of the back anchor patch with the following information:

1. RCMP stock number - reference contract documents. (Ex. 3494-000).
2. Size of the article, combining the size designation referenced in the English and French contract documents. (Ex. Regular/Régulier or Tall/Long)
3. Manufacturer's identification.
3. Date of manufacture, in numeric format year/month (Ex. 2001/11).

5. **Quality Assurance Provisions**

5.1 **Responsibility for Inspection** - Unless otherwise stipulated in the contract, it is the prime contractor's responsibility to satisfy the R.C.M.P., Uniform & Equipment Program that the material and services being supplied conform to this specification. This may be accomplished by performing the tests specified in this specification or by demonstrating to the satisfaction of the R.C.M.P., Uniform & Equipment Program that conformity to this specification of manufacturing processes is assured. The contractor may use his own facilities or any commercial testing establishment acceptable to the R.C.M.P., Uniform & Equipment Program.

5.2 The R.C.M.P., Uniform & Equipment Program reserves the right to perform any inspection considered necessary to ensure the material and services conform to the specified requirements. For the purpose of inspection, a portion of each delivery not exceeding two percent or two out of any number delivered under 100 may be put to tests that could destroy the articles. If found to be inferior or not in accordance with this specification, all articles so destroyed must be replaced by others of proper quality and pattern at the expense of the contractor. The entire

delivery may also be rejected if it is found that articles previously rejected due to non-repairable defects are redelivered for inspection.

- 5.3 The contractor will be promptly notified when any articles are not accepted and such articles will be returned at the contractor's risk and expense.

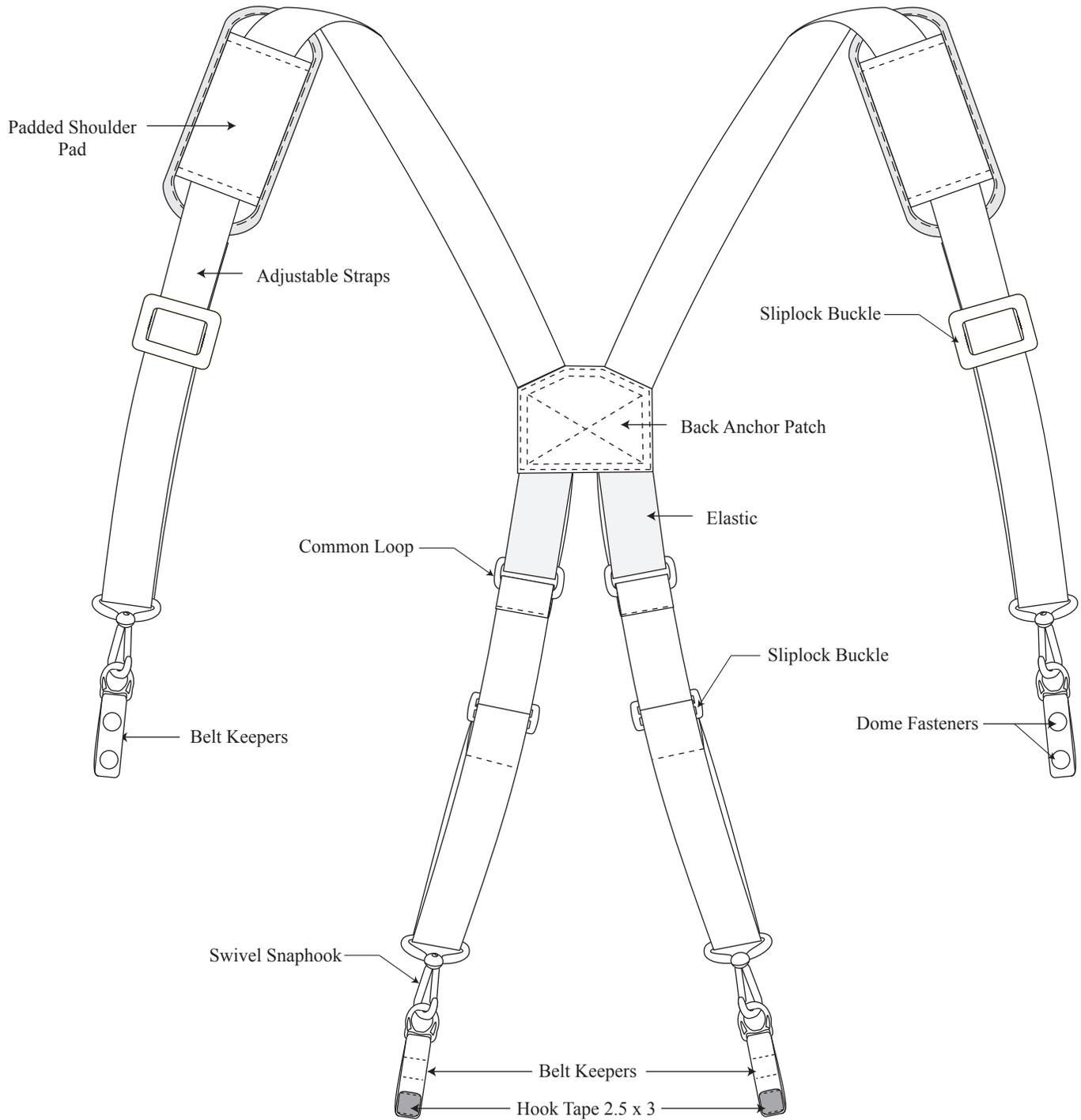
Table I
Shell Material I

REQUIREMENT			TEST METHODS
	Colour	Black, as per sample available from RCMP Uniform and Equipment Program	
	Fibre Content	100% Nylon, 500 denier with a urethane coating	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 14-2005
1	Mass	Fabric: 235 g/m ² ± 12g/m ² Coating: 25 g/m ² ± 3g/m ²	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 5.1-M90 (2013) OR • ASTM D3776/D3776M-09a (2013)
	Yarns per cm	Warp: 18 min. Weft: 13 min.	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 6-2013 OR • ISO 7211-2:1984
2	Breaking Strength - Strip Method	Warp: 1000 N min. Weft: 800 N min.	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 9.1-M90 (R2013)
3	Tearing Strength - Single rip Method	Warp: 115 N min. Weft: 100 N min.	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 12.1-M90 (R2004)
4	Resistance to Surface Wetting - Spray Method	100 initial	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 26.2-94 (R2012) OR • ISO 4920:2012
5	Hydrostatic Resistance	No leakage at 35 cm	<ul style="list-style-type: none"> • CAN CGSB 4.2 Method 26.3-2010

Drawing 1

G.S. 1045-309

Suspenders, Duty Belt



**Suspender
Open View, from front**

NOT TO SCALE

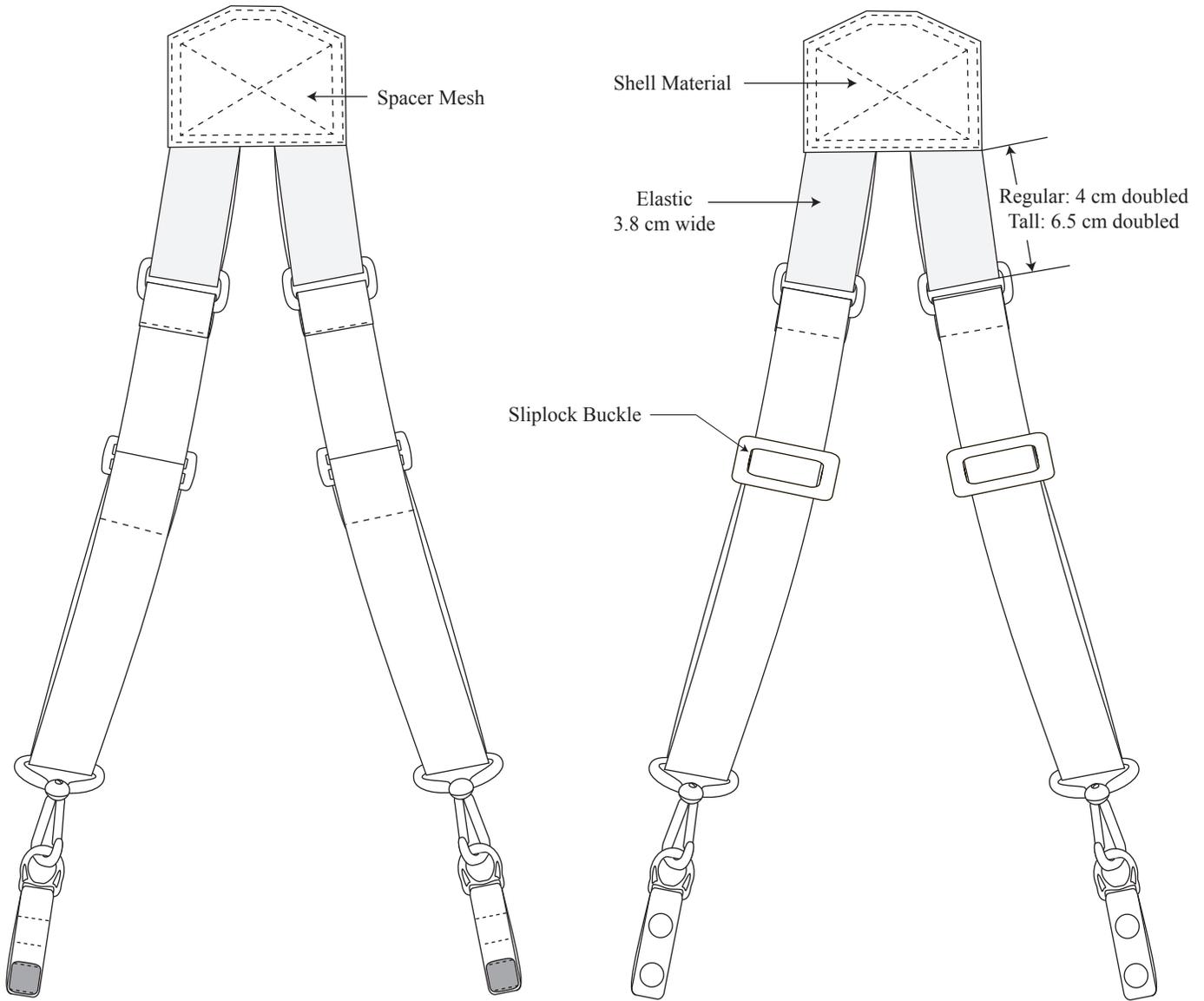
All measurements are shown in centimeters.

± 0.5 cm tolerance acceptable unless otherwise indicated.

Drawing 2

G.S. 1045-309

Suspenders, Duty Belt Back Suspender



Back Suspender
Rear View (against the body)

Back Suspender
Front View (away from the body)

NOT TO SCALE

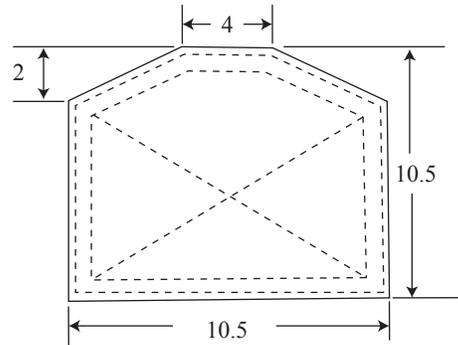
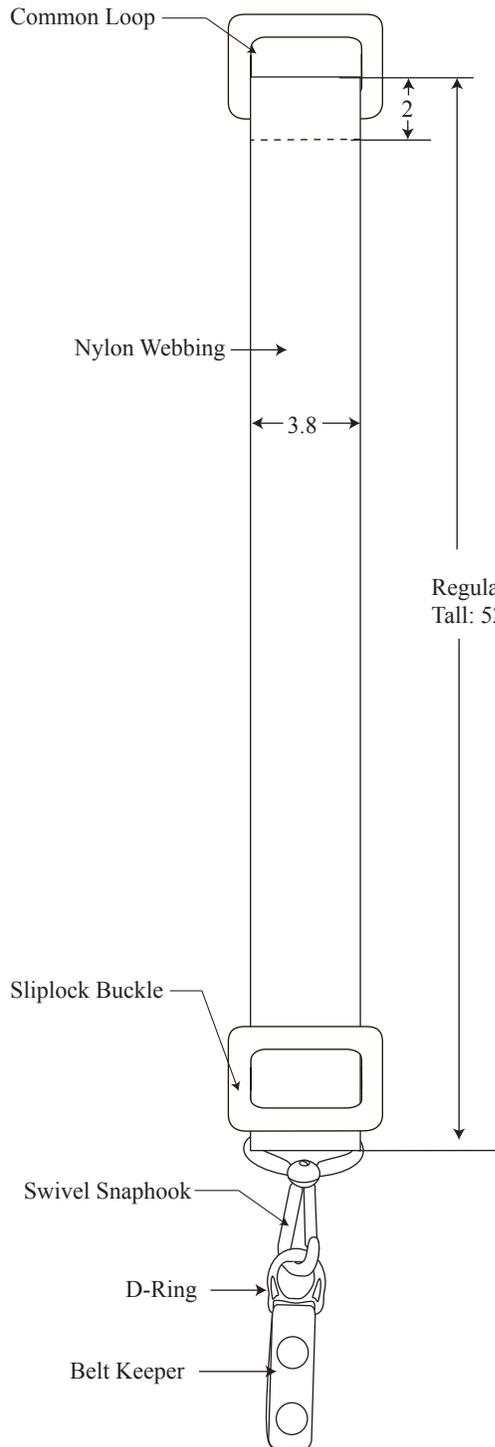
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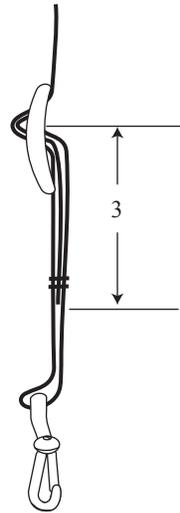
Drawing 3

G.S. 1045-309

Suspenders, Duty Belt Back Suspender and Anchor Patch



Back Anchor Patch Dimensions



**Back Strap
(Side View)**

**Back Strap
(fully extended - shown without elastic)**

NOT TO SCALE

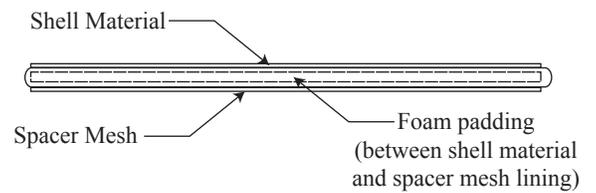
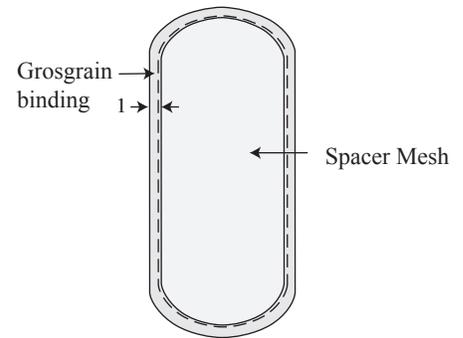
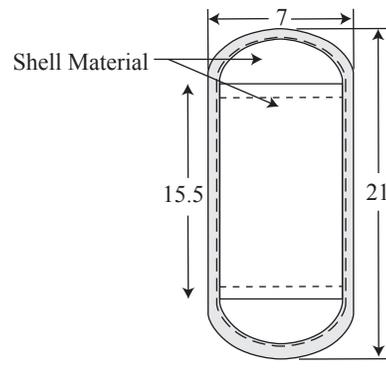
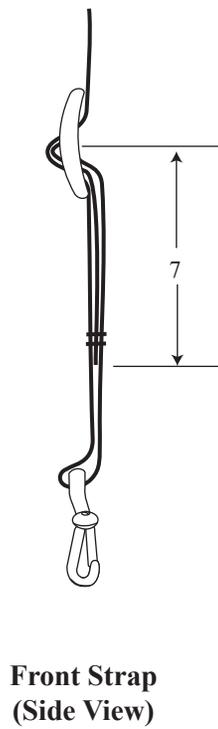
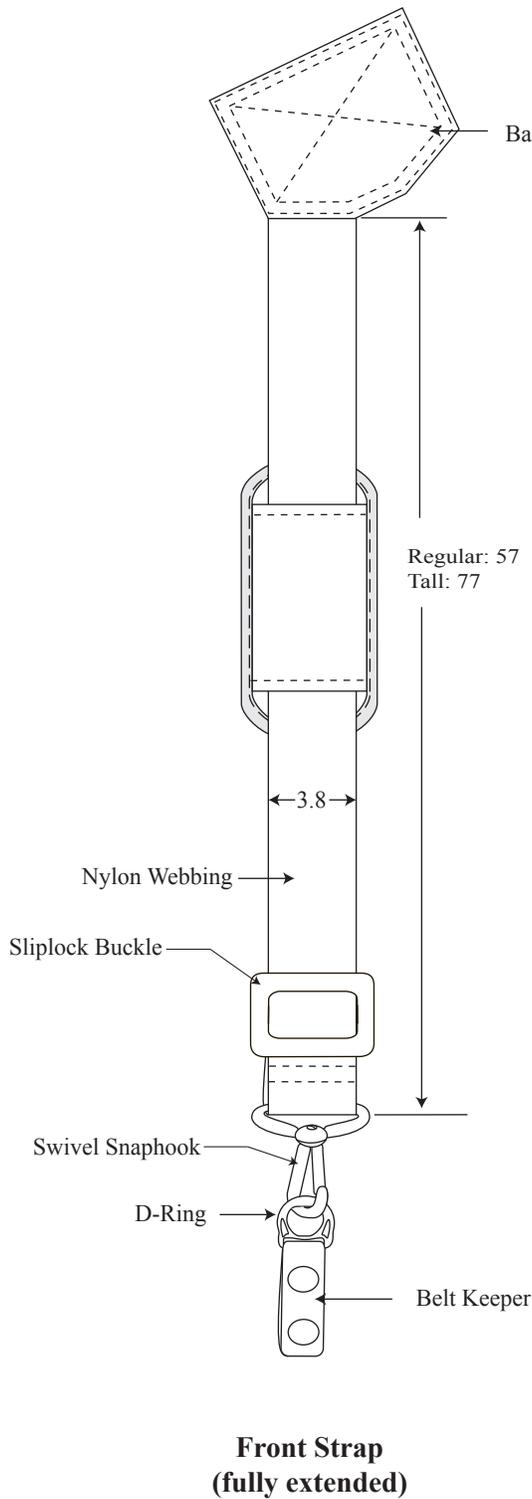
All measurements are shown in centimeters.

± 0.5 cm tolerance acceptable unless otherwise indicated.

Drawing 4

G.S. 1045-309

Suspenders, Duty Belt Front Strap and Padded Shoulder Pad



NOT TO SCALE

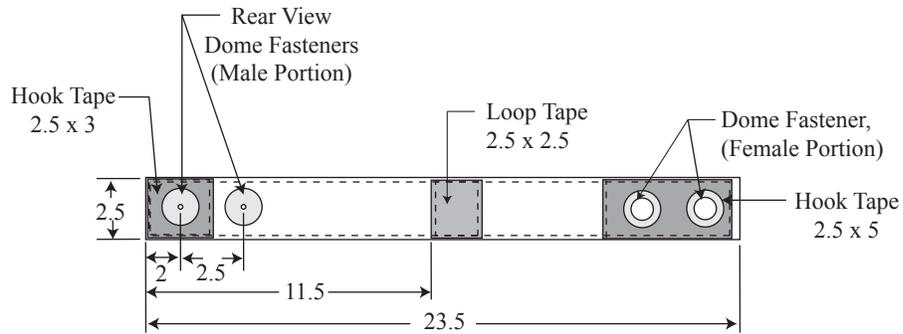
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± 0.5 cm tolerance acceptable unless otherwise indicated.

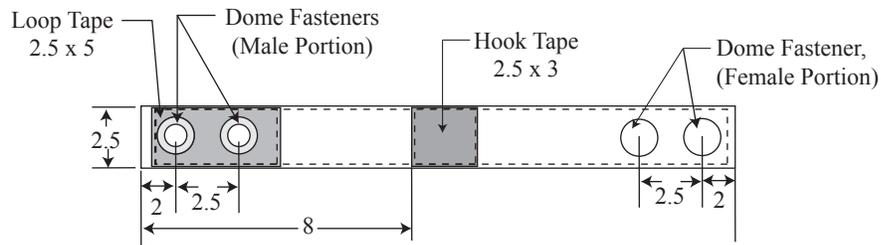
Drawing 5

G.S. 1045-309

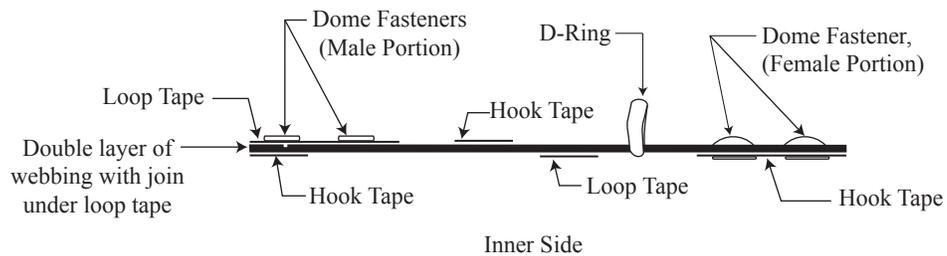
Suspenders, Duty Belt Keepers



Belt Keeper
Open View (Inner side shown without D-Ring)



Belt Keeper
Open View (Outer side shown without D-Ring)



Belt Keeper
Side View

NOT TO SCALE

All measurements are shown in centimeters.

± 0.5 cm tolerance acceptable unless otherwise indicated.