



Royal Canadian Mounted Police
Gendarmerie royale du Canada

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Date: 2016-11-03

Specification

Vest, High Visibility

No Markings

This document has 19 pages
including the drawings.

This document was created in
English.

The document is available in
English and French.

English/Anglaise
Française/French

The photograph on this page
is for reference only.

Modifications

Date	Para. No's	Modifications
2012-02-09		Original Specification
2013-09-13	Para. 2.5 Para. 4.1.5 Para. 4.1.6 Appendix B	Updated CGSB standard for Care & Labeling of textiles. Added Certificate of compliance required. Changed reference of Validation certificate to Certificate of compliance. Revised definitions and criteria.
2015-09-25	Para. 3.3 Para. 4.1.2 Para. 5 Table I Appendix B and Certification & Evaluation Criteria	Removed Removed reference to LAB reading Delivery, Packing and Marking removed Weight tolerance increased and breaking strength decreased Removed
2016-11-03	Entire Specification 4.3.2.2	Updated all reference of CAN/CSA Z96 2009 to the 2015 version. Name changed from Vest, High Visibility without Police Markings to Vest, High Visibility No Markings. Loop tape placement clarified.

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 shall govern.

It may be obtained from:

Royal Canadian Mounted Police
ATTN: Uniform and 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 shall be returned to the RCMP in the same condition as received by the manufacturer. Lost or damaged viewing samples shall be replaced by an identical item or the RCMP shall be reimbursed for the cost of an acceptable replacement.

SPECIFICATION

VEST, HIGH VISIBILITY NO MARKINGS

1. Definition

- 1.1 This specification shall govern the manufacture and inspection of Vest, High Visibility No Markings. The specific item covered under this specification with MMR number is as follows:
- i. 122451 - Vest, High Visibility No Markings S/M / Gilet, Haute Visibilité sans Identification Policière P/M
 - ii. 122452 - Vest, High Visibility No Markings L/XL / Gilet, Haute Visibilité sans Identification Policière G/ TG
 - iii. 122453 - Vest, High Visibility No Markings 2XL/3XL / Gilet, Haute Visibilité sans Identification Policière 2TG/ 3TG
 - iv. 122454 - Vest, High Visibility No Markings 4XL/5XL / Gilet, Haute Visibilité sans Identification Policière 4TG/5TG
- 1.2 This specification, patterns, viewing sample, drawing or other information issued in connection therewith, may only be used for specific enquiries, tenders, or orders placed on behalf of the Royal Canadian Mounted Police.
- 1.3 This specification supersedes all previous specifications for RCMP Vest, High Visibility without Police Markings.
- 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 invitation to tender, unless otherwise specified.
- 2.2 CAN/CGSB 4.2 Textile Test Methods; 4.1-2008, 5.1-M90 (2013), 6-2013, 9.2-M90 (R2013), 12.3-2005 (R2013), 19.1-2004 (R2013), 22-2004, 23-M90 (R2013), 29.1-M89 and 58-2004.
- 2.3 CAN/CSA Z96-15 High-Visibility Safety Apparel.
- 2.4 CAN/CGSB 4.131-93, Thread, Polyester.

- 2.5 CAN/CGSB 86.1-2003 Care Labelling of Textiles.
- 2.6 ASTM E308-01 Standard Practice for Computing the Colors of Objects by Using the CIE System.
- 2.7 ASTM, American Society for Testing and Materials, Methods D1424-09 (2013), D5034-09 (2013), D5169-98 (2015), D5170-98 (2015), E808-01 (2009), E809-08 (2013) and E1164-12.
- 2.8 AATCC, American Association of Textile Chemists and Colorists - Technical Manual Methods; 8-2013, 15-2013, 16.3-2014, and 135-2012.

3. **General Requirements**

- 3.1 The article or material covered by this specification shall be free from imperfections or blemishes such as may affect its appearance or serviceability. In all particulars not covered by this specification or contract documents, production shall be equivalent in all respects to the viewing sample.
- 3.2 **Design** - The vest shall be a front closure, 'five-point tear-away' design traffic safety garment conforming in all respects to the CAN/CSA Z96-15 Standard as a Class 2, Level 2 garment.

4. **Detail Requirements**

- 4.1 **Material & Performance Requirements** - Vest, High Visibility No Markings shall conform in all respects to the following national standard of Canada:

CAN/CSA Z96-15 High-Visibility Safety Apparel, (most recent edition), as published by the Canadian Standards Association, as non-FR Class 2, Level 2 garment, with specific requirements of design, colour, and size as listed below.

- 4.1.1 **Shell Material** - The shell material shall be a woven fabric meeting the requirements outlined in Table I of this specification for non-water repellent, non-water resistant material. All vests must be machine-washable at temperatures up to and including 60°C and dry-cleanable while meeting the performance

requirements outlined in CAN/CSA Z96-15 High Visibility Safety Apparel. Mesh type material shall not be acceptable.

- 4.1.2 **Shell Material - Colour** - The colour shall be fluorescent yellow-green in accordance with Table I. The colour shall visually match the viewing sample provided by RCMP Uniform & Equipment Program.
- 4.1.3 **Edge Binding** - The front and back piece edges shall be finished with a binding tape using material as specified in para. 4.3.2.1 and 4.3.2.2. The binding tape shall be 8mm ± 2mm wide finished and spliced no more than 3 times on each piece.
- 4.1.4 **Retroreflective Markings**- The retroreflective markings shall be exposed, wide angle, retroreflective lens, silver material in the form of a heat transfer film, 5cm wide. It shall meet all the retroreflective performance requirements outlined in Section 6, meeting Table 5 in the CAN/CSA Z96-15 High-Visibility Safety Apparel standard. All retroreflective markings shall meet a minimum coefficient of retroreflection, R_A , and shall be determined in accordance with the procedures defined in ASTM E808 (R2016) and E809 (2013).
- 4.1.5 **Thread** - The thread shall be polyester wrap, polyester core, Tex 40, Class B of matching colour, meeting CAN/CGSB 4.131-93.
- 4.1.6 **Hook and Loop Tape** - The hook and loop tape shall be woven nylon, fluorescent yellow-green in colour, with a high life cycle. The combined hook and loop shall 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 shall be as per drawings.
- 4.2 **Size and Dimensions** – The Vest, High Visibility No Markings shall be supplied in the sizes specified by the RCMP according to this specification and to the dimensions given in the scale of measurements and drawings. The garment components shall be shaped, dimensioned and positioned in accordance with the pattern components and pattern requirements as outlined in Appendix A forming part of this specification.
- 4.3 **Construction**

- 4.3.1 **Stitching** - All stitching shall be lockstitch. There shall be no less than three nor more than four stitches per centimetre. The beginning and ending of all stitching shall be securely backstitch tacked, unless secured by other stitching.
- 4.3.2 **Body**
- 4.3.2.1 **Front** - The front shall be made from the material specified in para. 4.1.1 and shall be sized and shaped to the pattern according to the scale of measurements. Both fronts shall have retroreflective tape as specified in para. 4.1.4 applied vertically and horizontally as per patterns and drawings. The left front shall have one piece of loop tape sewn on the back side vertically from top to bottom along center front. The right front shall have 4 pieces of hook tape 5cm long by 3.75cm wide placed on the face at center front according to the pattern. The name tag shall be loop tape 8.5cm long by 2.5cm wide. Hook tape shall be applied to the face of the garment on the side extensions as per drawing #3 and the measurements shall be as per the scale of measurements extension length. Hook tape shall be placed on the face of the material at the shoulder edge as per drawing #2. The hook tape shall be 3.75cm wide and the length shall measure the width of the shoulder. All edges shall be bound with binding tape as specified in para. 4.1.3 to ensure durability. Care shall be taken to ensure that the binding is stitched to the shell material and does not separate.
- 4.3.2.2 **Back** - The back shall be made from the material specified in para. 4.1.1 and shall be sized and shaped to the pattern and scale of measurements. The back shall have retroreflective tape as specified in para. 4.1.4 applied to form an 'X' and a horizontal stripe as per patterns and drawings. Loop tape shall be applied to the wrong side of the garment on the side extensions as per drawing #3. The side extensions shall have three pieces of loop tape, two placed vertically and one placed horizontally. The vertical pieces shall be placed at a distance equal to the extension length in the scale of measurements. The loop tape placed horizontally shall be centered between the two vertical loop tape and shall be in line with the top of the vertical loop tape. At the shoulder, two pieces of 3.75 cm wide loop tape shall be placed butted against each other to form a continuous piece 7.5 cm wide. The two pieces shall have a length measuring the width of the shoulder and shall be placed at the shoulder edge on the wrong side. All hook and loop tape shall be placed in line with the piece edge. All edges shall be bound with the binding tape as specified in para. 4.1.3 to ensure durability. Care shall be taken to ensure that the binding is stitched to the shell material and does not separate.

4.3.2.3 **Retroreflective Markings** - The retroreflective as specified in para. 4.1.4 shall be heat transferred to the shell material and positioned as per pattern and drawings. The back panel shall have a symmetrical 'X'. There shall be a horizontal band at the bottom of the 'X' extending from side to side. The front body shall have retroreflective material from the shoulder extending down the body to meet the horizontal band that extends from side to side. All retroreflective material shall be permanently attached to the shell material by means of heat sealing. No stitching shall be employed in attaching the retroreflective material, and the heat-sealing shall endure for the life of the vest. There shall be no loose or unbonded edges, or loss of film. Retroreflective material shall not cover other retroreflective material on the vest in order to provide the best bond between the retroreflective material and the background material.

4.4 **Marking & Cleaning Instructions Label** - Each vest shall have a label marked legibly and indelibly in English and French attached in accordance with the requirements outlined in Section 9 of CAN/CSA Z96-15 High-Visibility Safety Apparel, with additional information as listed below added to the label. The cleaning instructions shall have all necessary and applicable care symbols for the garment and trim. All symbols shall appear according to the CAN/CGSB 86.1-2003 Care Labeling of Textiles. The label shall be placed at the back of the front panel at the side aligning with the retroreflective material as per drawing #3.

1. Item name in English as written in para. 1.1.
2. Item name in French as written in para. 1.1.
3. RCMP stock number - reference contract documents. (Ex. 8100 000)
4. Size of the article, combining the size designation referenced in the English and French contract documents. (Ex. L/XL - G/TG)
5. Date of manufacture, in numeric format year/month (Ex. 2001/11)
6. Your manufacturer identification (Company name or number).
7. Print information as shown below.
8. Print information as shown below.

1					
2					
3					
4					
5					
6					
7	CAN/CSA Z96-15 Class 2, Level 2 Fluorescent Yellow-Green		Norme Z96-15 de la CAN/CSA Classe 2, Niveau 2 Jaune-vert fluorescent		
8					
	Do Not use fabric softener		(Do Not) use dryer sheets)		
	Ne pas utiliser d'agent adou cissant		(Ne pas) utiliser d'assouplissant en feuilles)		

4.5 **Identification Label** - Each vest shall have a durable blank label 7.5cm x 2cm applied separately beside the marking and cleaning label used for the inscription of the wearer's name.

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 RCMP, 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 RCMP, Uniform & Equipment Program that conformity to this specification of manufacturing processes is assured. The contractor may use any commercial testing establishment acceptable to the RCMP, Uniform & Equipment Program.

5.2 The RCMP, 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 shall 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 nonrepairable 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.

6. Scale of Measurement Definitions and Location References

(Refer to the Scale of Measurements and Drawing No. 4).

- 6.1 **Chest** - The chest shall be the distance across one vest front panel, measured 7.5cm below the lowest point of the neckline. (A).
- 6.2 **Front Hem** - The hem shall be half the distance across the vest bottom, measured 2.5cm above the bottom of the vest including extension. (B).
- 6.3 **Front Length** - The length shall be the distance measured 2.5 cm in from center front at the base of the neckline to the hem. (C).
- 6.4 **Shoulder to Waist** - The length shall be the distance measured from the shoulder 2.5cm in from the neckline to the hem. (D).
- 6.5 **Back Width** - The back width shall be the distance across the back of the vest measured 10cm down from the neckline. (E).
- 6.6 **Back Hem** - The hem shall be the distance across the vest bottom, measured 2.5cm above the bottom of the vest including extensions. (F).
- 6.7 **Center Back Length** - The length shall be the distance measured from the base of the neckline at center back to the hem. (G)
- 6.8 **Side Width** - The distance measured 2.5cm in from the end of the extension from top to hem. (H).
- 6.9 **Extension Length** - The distance measured perpendicular from a continuation of the side measured to the side extension edge. (J).

SCALE OF MEASUREMENTS

All measurements are in centimeters unless otherwise indicated											
Size	Body Measurements		GARMENT MEASUREMENT								
Size	Chest	Waist	Front Chest (½ only)	Front Hem (½ only)	Front Length	Shoulder to Waist	Back Width	Back Hem	Center Back Length	Side Width	Extension Length
S/M	up to 40"	up to 34"	21.4	34.6	38	54.5	38.6	65.2	45.4	20	13
L/XL	40" - 48"	34" - 46"	23.9	42.2	42.4	59.3	43.6	80.4	49.8	19.8	18
2XL/3XL	48" - 56"	46" - 58"	26.4	49.8	46.8	64.1	48.6	95.6	54.2	19.7	23
4XL/5XL	56" - 62"	58" - 70"	28.9	57.4	51.2	69	53.6	110.8	58.6	19.5	28
Tolerances ± including binding			1cm	1cm	1cm	1cm	1cm	1cm	1cm	1cm	1cm
Measurement Location			A	B	C	D	E	F	G	H	J

TABLE I
Properties of Shell Material (Fluorescent Yellow-Green)
CAN/CSA Z96-15 High Visibility Apparel Requirements (Meeting or Exceeding)

		REQUIREMENTS	TEST METHOD
1	Colour	Fluorescent yellow-green matching the viewing sample	
2	Fiber Content	100% Polyester	
3	Weave	Plain	
4	Mass	180g/m ² ± 15g/m ²	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 5.1-M90 (2013)
5	Width	150 cm (min.)	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 4.1-2008
6	Yarns per 10 cm	Warp 252 (min.) Weft 181 (min.)	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 6-2013
7	Breaking Strength	Lengthwise: 400N (min.) Crosswise: 400N (min.)	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 9.2-M90 (R2013) • ASTM D5034-09 (2013)
REQUIREMENTS FROM CAN/CSA Z96-15			
8	Background - Material Colour	<p>Initial: Table 2A - Fluorescent yellow-green</p> <p>After colourfastness to light (AATCC 16 Test Option E, 40 AATCC Fading Units): Table 2A - Fluorescent yellow-green</p>	<ul style="list-style-type: none"> • ASTM E1164-12
9	Colour Fastness To Light (Xenon)	Light fastness shall be equal or better than Grade 4 by Grey Scale for Colour change after 40 AATCC Fading Units.	<ul style="list-style-type: none"> • AATCC 16.3-2014, Test Option E • ISO 105-B02:2014, Method 1
10	Colour Fastness To Crocking	Wet: Grey Scale 4 or better Dry: Grey Scale 4 or better	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 22-2004 • AATCC 8-2013
11	Colour Fastness To Perspiration	Colour change: Grey Scale 4 or better Staining: Grey Scale 4 or better	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 23-M90 • AATCC 15-2013
12	Colour Fastness To Domestic and Commercial Laundering	Colour change: Grey Scale 4 or better Staining: Grey Scale 3 or better	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 19.1-2004 (R2013), Test 2 • Modified AATCC 61-2013, 2A to use 105°F
13	Colour Fastness To Dry Cleaning	Colour Change: Grey Scale 4 or better	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 29.1-M89 • AATCC 132-2013
14	Dimensional Change to Laundering	5 cycles: Not exceed ± 4% length Not exceed ± 2% width	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 58-2004 • AATCC Method 135-2012 • ISO 6330, Method 2A

15	Tearing Strength	Minimum: 13N	<ul style="list-style-type: none"> • CAN/CGSB-4.2 Method 12.3-2005 • ISO 13937-1:2000 • ASTM D1424-09 (2013)
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Note: All material requirements above meet or exceed the CSA Z96-15 standard and all certification and test reports shall comply with the table requirements above not only to CSA Z96-15.

APPENDIX A

Sealed Pattern Identifier

Pattern #: G.S. 1045-357
 Title: Vest, High Visibility No Markings

Paper Patterns - Paper patterns are available from the RCMP, Uniform & Equipment Program, Ottawa Ontario, under Pattern # G.S. 1045-357. Firms requested to produce Pre-contract Award Samples will be provided with the base pattern only. The full set of patterns either in individual sizes or as a graded nest will be provided to the successful bidder after the contract is awarded.

The paper patterns include placement some templates for hook and loop and retroreflective material. Contractors may make changes required to suit their production process, however, the design and grade shall not be affected or changed. No seam allowance is required.

All patterns are the property of the RCMP and must be returned upon completion of the contract.

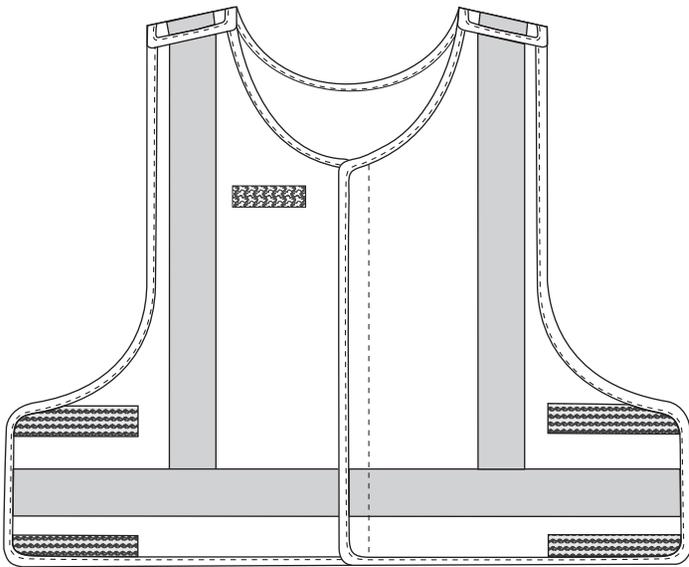
Pattern Pieces - This design has 3 pattern components.

<p><u>Legend:</u> Cut 1 Single = Cut 1 Cut 1 Paired = Cut 2</p>
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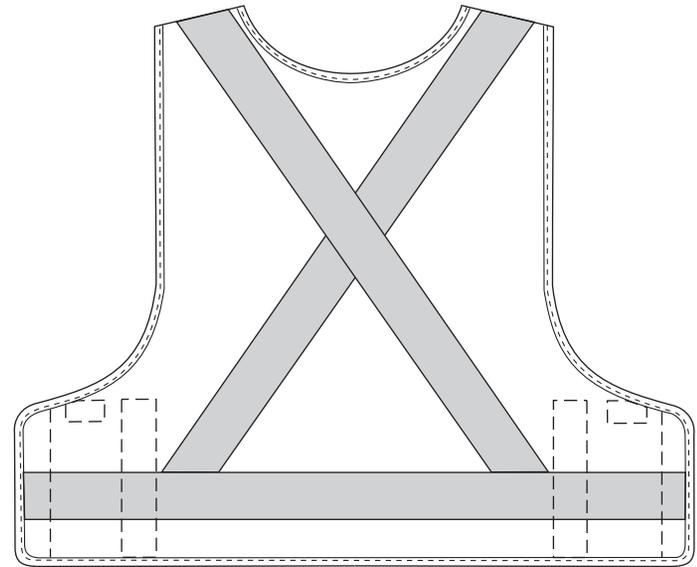
Pattern Components	Nomenclature	Quantity to be cut	Material
# 1 of 2	Back	1 Single	Shell Material
# 2 of 2	Front Right	1 Single	Shell Material
# 3 of 3	Front Left	1 Single	Shell Material

Note: Pattern piece for edge binding not included.

Drawing 1



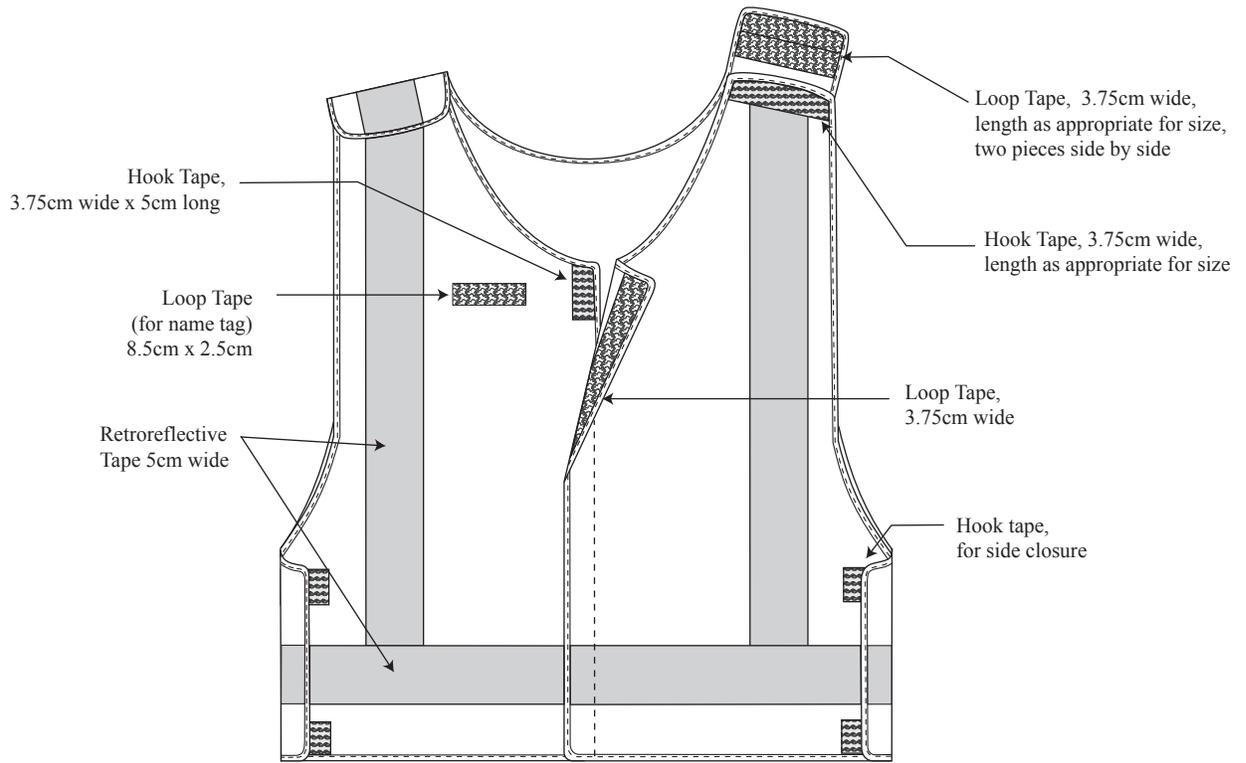
Front View



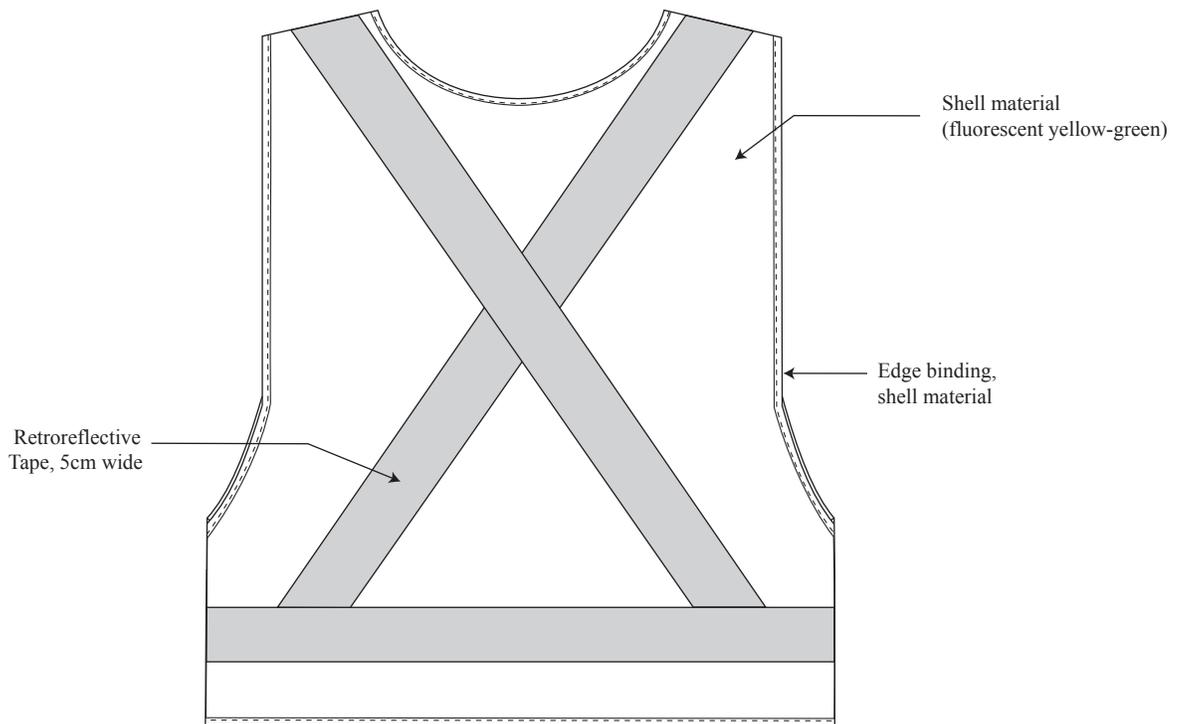
Back View

All measurements in centimeters
Not to Scale

Drawing 2



Front

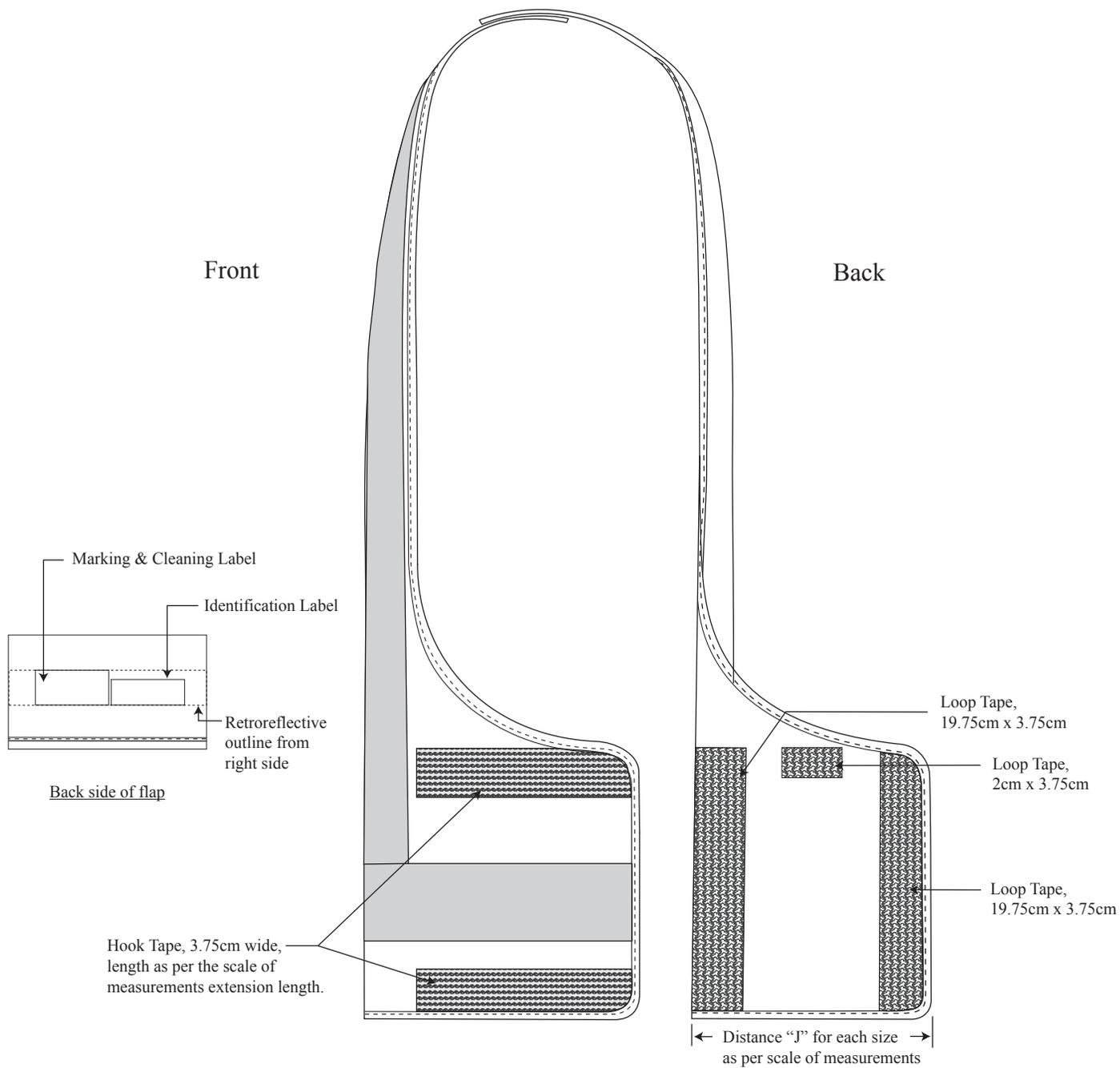


Back

All Measurements in Centimetres
NOT TO SCALE

Side Closure Detail

Dwg. 3

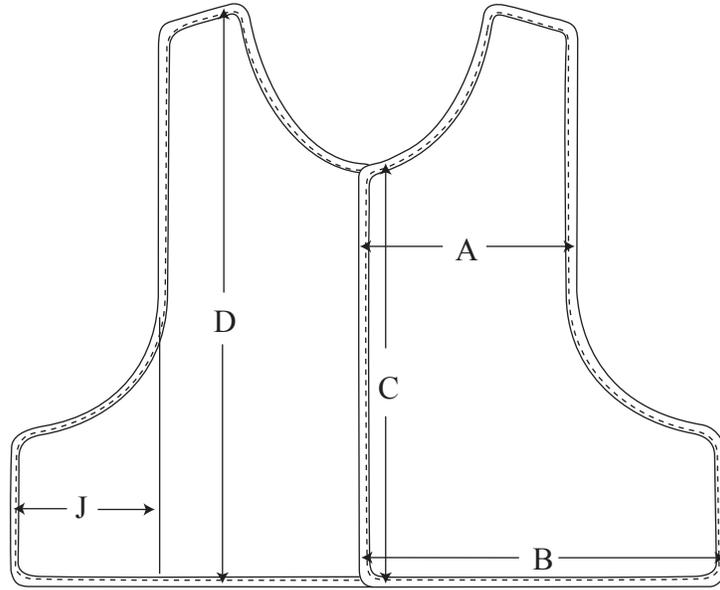


Side View

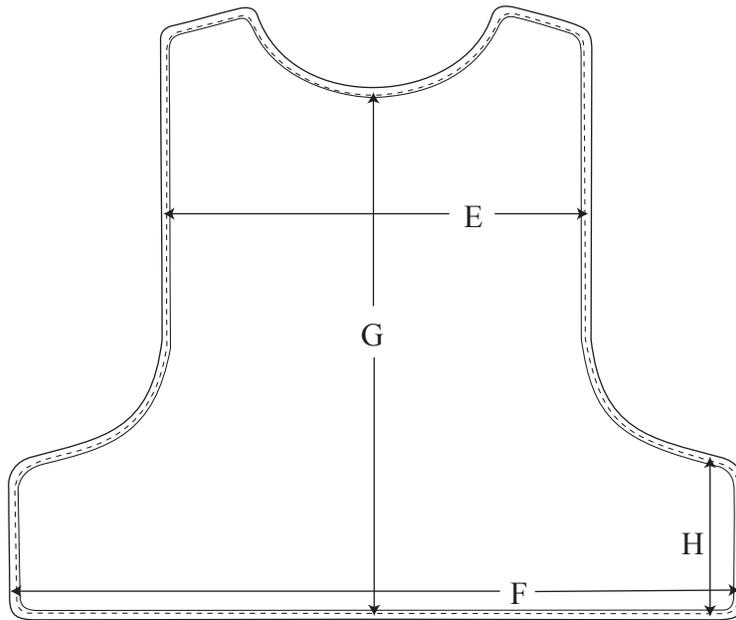
All Measurements in Centimetres
NOT TO SCALE

Measurement Location Chart

Dwg. 4



Front



Back

NOT TO SCALE