



**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC**  
11 Laurier St./ 11, rue Laurier  
Place du Portage, Phase III  
Core 0B2 / Noyau 0B2  
Gatineau, Québec K1A 0S5  
Bid Fax: (819) 997-9776

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

**Vendor/Firm Name and Address**

**Raison sociale et adresse du  
fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**

Clothing and Textiles Division / Division des vêtements et des textiles  
11 Laurier St./ 11, rue Laurier  
6A2, Place du Portage  
Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> ADVANCED SEARCH AND RESCUE UNIFORMS	
<b>Solicitation No. - N° de l'invitation</b> W8476-185803/A	<b>Date</b> 2018-06-07
<b>Client Reference No. - N° de référence du client</b> 6000418469	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$PR-760-74952	
<b>File No. - N° de dossier</b> pr760.W8476-185803	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2018-08-08</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Daylight Saving Time EDT
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Richard, Josette	<b>Buyer Id - Id de l'acheteur</b> pr760
<b>Telephone No. - N° de téléphone</b> (613) 462-4128 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> DEPARTMENT OF NATIONAL DEFENCE 101 COLONEL BY DR. OTTAWA Ontario K1A0K2 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>

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## PART 1 - GENERAL INFORMATION

### 1.1 Security Requirement

There is no security requirement associated with this bid solicitation.

### 1.2 Requirement

The requirement is detailed under Annex A of the resulting contract clauses.

### 1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

### 1.4 Trade Agreements

The requirement is subject to the provisions of the the Canadian Free Trade Agreement (CFTA).

### 1.5 Canadian Content

The requirement is limited to Canadian goods.

## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the *[Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual)* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2017/04/27) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of 2003, Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days

Insert: 120 days

### 2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

### 2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that

the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

## **2.4 Applicable Laws**

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

## **2.5 Technical Data and Sealed Samples**

In order to receive Technical Data Packages and Sealed Samples against this solicitation, Bidders must send their request by email to name of [josette.richard@tpsgc-pwgsc.gc.ca](mailto:josette.richard@tpsgc-pwgsc.gc.ca) and provide the following details:

- Company Name
- Complete mailing & physical address (p.o. box numbers not acceptable)
- Area code and telephone number
- Contact name
- E-mail address
- Solicitation Number & Closing Date

It is imperative that the request be done as soon as possible to ensure timely receipt. Notwithstanding Canada must not be held responsible for untimely release of the technical data.

## **2.6 Sealed Samples/Patterns - Return to Sender**

The sealed samples and/or patterns which may have been sent to you, are to be returned to the sender, if you are the unsuccessful Bidder. The sealed samples and/or patterns are not to be mutilated or cut, and must be returned in the same condition as sent to the Bidder.

## **2.7 Specifications and Standards**

### **2.7.1 United States Military Specifications and Standards**

The Bidder is responsible for obtaining copies of all United States (US) military specifications and standards which may be applicable to the requirement. These specifications and standards are available commercially, or may be obtained by visiting the US Department of Defense Website, at the following address: [http://assistdocs.com/search/search\\_basic.cfm](http://assistdocs.com/search/search_basic.cfm)

### **2.7.2 Canadian General Standards Board (CGSB) - Standards**

A copy of the CGSB Standards referred to in the bid solicitation is available and may be purchased from:

Canadian General Standards Board

Place du Portage III, 6B1

11 Laurier Street

Gatineau, Québec

Telephone: (819) 956-0425 or 1-800-665-CGSB (Canada only)

Fax: (819) 956-5740

E-mail: [ncr.cgsb-ongc@pwgsc-tpsgc.gc.ca](mailto:ncr.cgsb-ongc@pwgsc-tpsgc.gc.ca)

CGSB Website: <http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html>

## 2.8 Transportation Costs Information

The Bidder is requested to provide the following information concerning transportation costs for the delivery of the units to destination:

- (a) shipping weight by unit; \_\_\_\_\_
- (b) number of items by unit; \_\_\_\_\_
- (c) cubic measurement by unit; \_\_\_\_\_
- (d) number of units per shipment: \_\_\_\_\_
- (e) name of shipping point; \_\_\_\_\_
- (f) recommended method of shipment and carrier \_\_\_\_\_
- (g) Unit cost per Destination    WB941: \$ \_\_\_\_\_    W248A: \$ \_\_\_\_\_
- (h) Total cost \$ \_\_\_\_\_

## PART 3 - BID PREPARATION INSTRUCTIONS

### 3.1 Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

- Section I:        Technical Bid ( 4 hard copies)
- Section II:       Financial Bid ( 1 hard copy)
- Section III:      Certifications (1 hard copy)
- Section IV:      Additional Information (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation;

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.
- 3) Green Initiatives (for PWGSC information only)  
Bidders are requested to provide details of their policies and practices in relation to the following initiatives:
  - environmentally responsible manufacturing;
  - environmentally responsible waste disposal;
  - waste reduction;
  - packaging;

- re-use strategies;
- recycling.

### Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work (reference Part 4, Evaluation Procedures, 4.1.1.1 Mandatory Technical Criteria).

### Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment.

#### 3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Appendix 1 to Part 3 - Electronic Payment Instruments, to identify which ones are accepted.

If Appendix 1 to Part 3 - Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

#### 3.1.2 Exchange Rate Fluctuation

[C3011T](#)

2013/11/06

Exchange Rate Fluctuation

### Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

### Section IV: Additional Information

#### 3.1.3. Origin of Work

For each line item, bidders must identify the name(s) of the country or countries where the apparel goods are cut (or knit to shape) and sewn, regardless of whether the work is to be performed by the Bidder or one of its subcontractor(s).

The following information must be provided for each location where any of the goods are cut (or knit to shape) or sewn:

Line Item number \_\_\_\_\_

Country: \_\_\_\_\_

(Bidders must add additional lines if there is more than one manufacturer or one country per line item.)

Bidders must immediately inform Canada in writing of any and all changes affecting the information provided under this clause during the entire bid validity period.

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## PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

### 4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### 4.1.1 Technical Evaluation

##### 4.1.1.1 Mandatory Technical Criteria

###### **Pre-Award Samples and Supporting Documentation**

As part of the technical evaluation, to confirm a Bidder's capability of meeting the technical requirements, pre-award samples and its supporting documentation must be included with the bid as outlined in *Annex H - Bid Technical Evaluation Plan, Shirt, Light Weight, Heavy Weight and Pants, Advanced Search and Rescue Uniform (ASARU)* and *Annex J – Pre-Award Textile Testing Requirements*.

The Bidder must ensure that the required pre-award samples are manufactured in accordance with the technical requirement and are fully representative of the bid submitted. Rejection of the pre-award samples will result in the bid being declared non-responsive.

The Bidder must deliver the required pre-award samples and test results at no charge to Canada and must ensure that they are received with the bid at time and place of bid closing. The samples submitted by the Bidder will remain the property of Canada.

At any time during the evaluation process, if any documentation is missing, the Contracting Authority will inform the Bidder in writing and provide the Bidder with two (2) working days from the request to submit the missing documentation. Failure to submit the required bid technical deliverables within the specified timeframe will result in the bid being declared non-responsive.

The pre-award samples will be evaluated for quality of workmanship and conformance to specified materials and measurements.

The requirement for a pre-award samples, test results and/or certificates of compliance will not relieve the successful bidder from submitting samples, test results and certificates of compliance as required by the contract terms or from strictly adhering to the technical requirement of this Request for Proposal and any resultant contract.

###### **MATERIAL SUBSTITUTIONS**

Refer to Annex H, para. 2.3.3 and Annex J, para. 11. (note 1).

### TEST REPORTS – DEFINITION

- I. All testing and test methods must be in accordance with the reference criteria. Test results must be applicable for the specific samples submitted.
- II. An accredited independent laboratory familiar with textile related testing must conduct all testing unless otherwise stated. Testing carried out by university textile testing laboratories will also be acceptable. Additional information about accredited laboratories is available on the Standards Council of Canada website (<http://www.scc.ca/en/accreditation/laboratories>). Should a non-



accredited laboratory be required for specific tests, approval must be sought and received in writing from the Contracting Authority or Technical Authority (TA) (at pre-production and production) in advance.

III. All Test Reports must clearly include:

- a. Test results must be on official test laboratory stationary;
- b. Test results must be current: it must be performed within six (6) months before or after the Request for Proposal posting date.
- c. Test results must specify a descriptive nomenclature for each type of test specimen including (where applicable) the production date, lot number, and a unique identifier for each test specimen;
- d. Test results must make reference to the applicable test methods and specifications;
- e. Test results must specify testing conditions/procedures followed;
- f. The document must include:
  1. The name and contact information of the supplier of each test sample;
  2. The name, contact information and signature for the primary person(s) that performed the test(s) and prepared the report;
  3. The name, contact information, and signature of the company's designated representative; and
  4. If they differ from those of the reporter's designated representative, the name and contact information of the entity that issued the report.
- g. The date the first measurement was obtained for the reported test(s).

Canada reserves the right to verify the statements made on the test report. Canada reserves the right to carry out testing of any specified property in order to confirm the compliance of the end item or material components with the applicable specification(s).

#### 4.1.2 Financial Evaluation

##### 4.1.2.1 Mandatory Financial Criteria

- a. The Bidder must submit firm unit price(s) in Canadian dollars, applicable taxes are excluded, DDP (Montreal, QC; Edmonton, AB) Incoterms 2000, transportation costs included, all applicable Customs Duties and Excise taxes included.
- b. The Bidder must submit firm unit pricing for all items and all destinations including options and "as and when requested" quantities. The Bidder is requested to quote firm unit pricing at no more than two decimal points.

##### 4.1.2.2 SACC MANUAL CLAUSE

[A9033T](#) 2012/07/16 Financial Capability

#### 4.2 Basis of Selection

A bid must comply with all requirements of the bid solicitation and meet all mandatory technical and financial evaluation criteria to be declared responsive.

The responsive bid with the lowest evaluated aggregate price will be recommended for award of a contract (1 contract only). Evaluation will be established using the firm quantities for all items, including all destinations and 100% of the option quantities and 100% of the "as and when requested" quantities (special sizes).

#### 4.3 Contract Financial Security

1. If this bid is accepted, the Bidder may be required to provide contract financial security, after the bid closing date and within 10 calendar days from receipt of a written request from the Contracting Authority.
  - i. a security deposit as defined in clause "Security Deposit Definition" in the amount of up to ten percent (10%) of the contract price.
2. Security deposits in the form of government guaranteed bonds with coupons attached will be accepted only if all coupons that are unmatured, at the time the security deposit is provided, are attached to the bonds. The Contractor must provide written instructions concerning the action to be taken with respect to coupons that will mature while the bonds are pledged as security, when such coupons are in excess of the security deposit requirement.
3. If Canada does not receive the required financial security within the specified period, Canada may, as its discretion, accept another offer, issue a new bid solicitation, award a contract or reject all the bids.

#### 4.4 Security Deposit Definition

1. "security deposit" means
  - (a) a bill of exchange that is payable to the Receiver General for Canada, and certified by an approved financial institution or drawn by an approved financial institution on itself; or
  - (b) a Government guaranteed bond; or
  - (c) an irrevocable standby letter of credit, or
  - (d) such other security as may be considered appropriate by the Contracting Authority and approved by Treasury Board;
2. "approved financial institution" means
  - (a) any corporation or institution that is a member of the Canadian Payments Association;
  - (b) a corporation that accepts deposits that are insured by the Canada Deposit Insurance Corporation or the "Régie de l'assurance-dépôts du Québec" to the maximum permitted by law;
  - (c) a credit union as defined in paragraph 137(6) the *Income Tax Act*;
  - (d) a corporation that accepts deposits from the public, if repayment of the deposits is guaranteed by Canadian province or territory; or
  - (e) the Canada Post Corporation.
3. "government guaranteed bond" means a bond of the Government of Canada or a bond unconditionally guaranteed as to principal and interest by the Government of Canada that is:
  - (a) payable to bearer;
  - (b) accompanied by a duly executed instrument of transfer of the bond to the Receiver General for Canada in accordance with the *Domestic Bonds of Canada Regulations*;
  - (c) registered in the name of the Receiver General for Canada.
4. "irrevocable standby letter of credit"
  - (a) means any arrangement, however named or described, whereby a financial institution (the "Issuer"), acting at the request and on the instructions of a customer (the "Applicant"), or on its behalf,
    - (i) will make a payment to or to the order of Canada, as the beneficiary;
    - (ii) will accept and pay bills of exchange drawn by Canada;
    - (iii) authorizes another financial institution to effect such payment, or accept and pay such bills of exchange; or

- (iv) authorizes another financial institution to negotiate, against written demand(s) for payment, provided that the conditions of the letter of credit are complied with.
- (b) must state the face amount which may be drawn against it;
- (c) must state its expiry date;
- (d) must provide for sight payment to the Receiver General for Canada by way of the financial institution's draft against presentation of a written demand for payment signed by the authorized departmental representative identified in the letter of credit by his/her office;
- (e) must provide that more than one written demand for payment may be presented subject to the sum of those demands not exceeding the face amount of the letter of credit;
- (f) must provide that it is subject to the International Chamber of Commerce (ICC) Uniform Customs and Practice (UCP) for Documentary Credits, 2007 Revision, ICC Publication No. 600. Pursuant to the ICC UCP, a credit is irrevocable even if there is no indication to that effect; and
- (g) must be issued (Issuer) or confirmed (Confirmer), in either official language, by a financial institution that is a member of the Canadian Payments Association and is on the letterhead of the Issuer or Confirmer. The format is left to the discretion of the Issuer or Confirmer.

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## PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### 5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

#### 5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the Forms for the Integrity Regime website (<http://www.tpsgc-pwgsc.gc.ca/ci-ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

### 5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

#### 5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the Ineligibility and Suspension Policy (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

#### 5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the Employment and Social Development Canada (ESDC) - Labour's website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

Canada will also have the right to terminate the Contract for default if a Contractor, or any member of the Contractor if the Contractor is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list during the period of the Contract.

The Bidder must provide the Contracting Authority with a completed annex titled Federal Contractors Program for Employment Equity - Certification, before contract award. If the Bidder is

a Joint Venture, the Bidder must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification, for each member of the Joint Venture.

### 5.2.3 Additional Certifications Precedent to Contract Award

#### 5.2.3.1 Canadian Content Certification

SACC Manual clause [A3050T](#) (2014/11/27) Canadian Content Definition

##### **Rules of Origin - Apparel**

With reference to the Canadian Content Certification clause, apparel goods are considered to be Canadian goods according to the North American Free Trade Agreement Rules of Origin as follows:

Apparel goods classified in Chapters 61 and 62 of the Harmonized System that are both cut (or knit to shape) and sewn in Canada will be considered Canadian goods.

##### **Canadian Content Certification**

This procurement is limited to Canadian goods.

The Bidder certifies that:

( ) the good(s) offered are Canadian goods as defined in paragraph 1 of clause A3050T.

##### **Plant Location**

Items will be manufactured at: \_\_\_\_\_

#### 5.2.3.2 Samples and Production Certification

The Bidder certifies that:

( ) the manufacturer that produced the pre-award samples will remain unchanged for the pre-production sample(s) and full production of the contract quantity.

## PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 6.1 Security Requirements

There is no security requirement applicable to the Contract.

### 6.2 Requirement

The Contractor must provide the items detailed according Annex A of the resulting contract.

### 6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the *Standard Acquisition Clauses and Conditions Manual* (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

#### 6.3.1 General Conditions

2030 (2016/04/04), General Conditions - Goods (Higher Complexity), apply to and form part of the Contract.

#### 6.3.2 Supplemental General Conditions

4006 04 (2008/05/12) Licenses to Intellectual Property Rights in Foreground and Background Information, apply to and form part of the Contract.

### 6.4 Term of Contract

#### 6.4.1 Delivery - Firm Quantity - Phased

**(a) Shirt, Light Weight (*identified as item 01 in Annex A*)**

The first delivery must be made within \_\_\_\_\_ calendar days from the date of the written notice of approval of pre-production samples. The quantity delivered must be \_\_\_\_\_ units. The balance must be delivered at the rate of \_\_\_\_\_ units weekly after the first delivery until completion of the Contract.

**(b) Shirt, Heavy Weight (*identified as item 02 in Annex A*)**

The first delivery must be made within \_\_\_\_\_ calendar days from the date of the written notice of approval of pre-production samples. The quantity delivered must be \_\_\_\_\_ units. The balance must be delivered at the rate of \_\_\_\_\_ units weekly after the first delivery until completion of the Contract.

**(c) Trousers, Men's (*identified as item 03 in Annex A*)**

The first delivery must be made within \_\_\_\_\_ calendar days from the date of the written notice of approval of pre-production samples. The quantity delivered must be \_\_\_\_\_ units. The balance must be delivered at the rate of \_\_\_\_\_ units weekly after the first delivery until completion of the Contract.

#### 6.4.2 Delivery - Option Quantity

**(a) Shirt, Light Weight (*identified as item 07 in Annex A*)**

The delivery of the option quantity must commence within \_\_\_\_\_ calendar days from receipt of the contract amendment and after final delivery of the contract quantity. The quantity delivered must be \_\_\_\_\_ units. The balance must be shipped at a

rate of \_\_\_\_\_ units weekly after the first delivery until completion of the option quantity.

**(b) Shirt, Heavy Weight (*identified as item 08 in Annex A*)**

The delivery of the option quantity must commence within \_\_\_\_\_ calendar days from receipt of the contract amendment and after final delivery of the contract quantity. The quantity delivered must be \_\_\_\_\_ units. The balance must be shipped at a rate of \_\_\_\_\_ units weekly after the first delivery until completion of the option quantity.

**(c) Trousers, Men's (*identified as item 09 in Annex A*)**

The delivery of the option quantity must commence within \_\_\_\_\_ calendar days from receipt of the contract amendment and after final delivery of the contract quantity. The quantity delivered must be \_\_\_\_\_ units. The balance must be shipped at a rate of \_\_\_\_\_ units weekly after the first delivery until completion of the option quantity.

**6.4.3 Delivery - Appointments**

The Contractor must make deliveries to Canadian Forces (CF) Supply Depots by appointment only. The Contractor or its carrier must arrange delivery appointments by contacting the Depot Traffic Section at the appropriate location shown below. The consignee may refuse shipments when prior arrangements have not been made.

(a) 25 CF Supply Depot Montreal  
Montreal, Qué.  
514-252-2777, ext. 2363  
[25dfactrafficrdv@forces.gc.ca](mailto:25dfactrafficrdv@forces.gc.ca)

(b) 7 CF Supply Depot Lancaster Park  
Edmonton, Alta  
780-973-4011, ext. 4524

**6.4.4 Preparation for Delivery**

The Contractor must prepare all items for delivery in accordance with the latest issue of the Canadian Forces Packaging Specification D-LM-008-036/SF-000, DND Minimum Requirements for Manufacturer's Standard Pack.

The Contractor must package all items in quantities of up to a maximum of 100 by package.

**6.4.5 Shipping Instructions - Delivery at Destination**

1. Goods must be consigned to the destination specified in the Contract and delivered:

(a) Delivered Duty Paid (DDP) (Montreal, QC; Edmonton, AB) Incoterms 2000 for shipments from commercial contractor.

**6.4.6 Packaging - Commercial**

Packing must be in accordance with standard commercial practice to ensure safe delivery at destination. Refer to Annex C, D and E, para. 3.10 entitled "Packaging".

**6.4.7 SACC Manual Clauses**

<u>D2025C</u>	2017/08/17	Wood Packaging Materials
<u>D5545C</u>	2010/08/16	ISO 9001:2008 - Quality Management Systems - Requirements (QAC C)
<u>D6010C</u>	2007/11/30	Palletization

## **6.5 Authorities**

### **6.5.1 Contracting Authority**

The Contracting Authority for the Contract is:

**Josette Richard**

Public Works and Government Services Canada  
Acquisitions Branch  
Commercial and Consumer Products Directorate (CCPD)  
Clothing & Textiles Division  
Place du Portage, Phase III, 6A2  
11 Laurier Street  
Gatineau, Quebec K1A 0S5  
Telephone : 613-462-4128 Facsimile: 819-956-5454  
E-mail address: [josette.richard@tpsgc-pwgsc.gc.ca](mailto:josette.richard@tpsgc-pwgsc.gc.ca)

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

### **6.5.2 Technical Authority**

The Technical Authority for this Contract is:

**Mailing/Shipping Address**

Department of National Defence  
101 Colonel By Drive  
Ottawa, Ontario  
K1A 0K2  
Attn: DSSPM \_\_\_\_\_(to be advised at contract)

The Technical Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

### **6.5.3 Procurement Authority**

The Procurement Authority for the Contract is: (to be advised at contract)

The Procurement Authority is the representative of the department or agency for whom the Work is being carried out under the Contract. The Procurement Authority is responsible for the implementation of tools and processes required for the administration of the Contract. The Contractor may discuss administrative matters identified in the Contract with the Procurement Authority however the Procurement Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of Work can only be made through a contract amendment issued by the Contracting Authority.



#### 6.5.4 Contractor's Representative

The person responsible for :

##### General enquiries

Name: \_\_\_\_\_  
Telephone No.: \_\_\_\_\_  
Facsimile No.: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

##### Delivery follow-up

Name: \_\_\_\_\_  
Telephone No.: \_\_\_\_\_  
Facsimile No.: \_\_\_\_\_  
E-mail address: \_\_\_\_\_

#### 6.6 Payment

##### 6.6.1 Basis of Payment – Firm Unit Prices

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid firm unit prices, as specified in Annex A for a cost of \$ (amount to be inserted at contract award). Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

##### 6.6.2 SACC Manual Clauses

[H1001C](#) 2008/05/12 Multiple Payments

##### 6.6.3 Electronic Payment of Invoices – Contract

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s): (to be advised at contract)

#### 6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Each invoice must be supported by:
  - a. a copy of the release document and any other documents as specified in the Contract;
  - b. a copy of the invoices, receipts, vouchers for all direct expenses, and all travel and living expenses;
3. Invoices must be distributed as follows:
  - a. Electronically to the following email address: (to be provided at contract)
  - b. One (1) copy must be sent electronically to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

## **6.8 Insurance**

SACC Manual clause [G1005C](#) (2016/01/28) Insurance – No specific requirement

## **6.9 Certifications and Additional Information**

### **6.9.1 Compliance**

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

### **6.9.2 Federal Contractors Program for Employment Equity - Default by the Contractor**

The Contractor understands and agrees that, when an Agreement to Implement Employment Equity (AIEE) exists between the Contractor and Employment and Social Development Canada (ESDC)-Labour, the AIEE must remain valid during the entire period of the Contract. If the AIEE becomes invalid, the name of the Contractor will be added to the "[FCP Limited Eligibility to Bid](#)" list. The imposition of such a sanction by ESDC will constitute the Contractor in default as per the terms of the Contract.

### **6.9.3 SACC Manual Clauses**

[A3060C](#) 2008/05/12 Canadian Content Certification

## **6.10 Applicable Laws**

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

## **6.11 Priority of Documents**

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- a) the Articles of Agreement;
- b) the supplemental general conditions [4006 04](#) (2008/05/12) Licenses to Intellectual Property Rights in Foreground and Background Information
- c) the general conditions [2030](#) (2016/04/04), General Conditions - Goods (Higher Complexity);
- d) Annex "A" - Requirement and Basis of Payment;
- e) Annex "B" – Statement of Work
- f) Specifications, i.e. Annex C, D, E, F, G, K, L;
- g) Drawings;
- h) Sealed Patterns/Samples;
- i) the Contractor's bid dated \_\_\_\_\_ .

## **6.12 Defence Contract**

SACC Manual clause [A9006C](#) (2012/07/16) Defence Contract

## **6.13 SACC Manual Clauses**

[C2801C](#) 2017/08/17 Priority Rating - Canadian-based Contractors

## **6.14 Materials: Contractor's Supply and Government Supplied Material**

The Contractor will be responsible for obtaining all materials required in the manufacture of the item(s) specified except those materials specified as being Government-supplied. The delivery stated herein allows the necessary time to obtain such materials.

#### 6.15 Procedures for Design Change/Deviations

The Contractor must complete Part 1 of the Design Change/Deviation form DND 672 and forward a copy to the Technical Authority and one (1) copy to the Contracting Authority.

The Contractor will be authorized to proceed upon receipt of the design change/deviation form signed by the Contracting Authority. A contract amendment will be issued to incorporate the design change/deviation in the Contract.

#### 6.16 Plant Closing

The Contractor's plant closing for Christmas and Summer holidays are as follows. During this time there will be no shipments.

##### Fiscal Year 2018-2019

Summer Holiday FROM \_\_\_\_\_ TO \_\_\_\_\_  
Christmas Holiday FROM \_\_\_\_\_ TO \_\_\_\_\_

##### Fiscal Year 2019-2020

Summer Holiday FROM \_\_\_\_\_ TO \_\_\_\_\_  
Christmas Holiday FROM \_\_\_\_\_ TO \_\_\_\_\_

##### Fiscal Year 2020-2021

Summer Holiday FROM \_\_\_\_\_ TO \_\_\_\_\_  
Christmas Holiday FROM \_\_\_\_\_ TO \_\_\_\_\_

#### 6.17 Plant Location

Items will be manufactured at: \_\_\_\_\_

#### 6.18 Subcontractor(s)

The following subcontractor(s) will be utilized in the performance of the contract.

Name of Company: \_\_\_\_\_

Location: \_\_\_\_\_

Value of subcontract: \$ \_\_\_\_\_

Nature of subcontracting work performed: \_\_\_\_\_

Subcontractors, other than those listed above, may not be utilized without the written permission of Canada.

#### 6.19 Origin of Work - Disclosure of Information

1. For each line item, the Contractor must specify the name(s) of all countries where the apparel goods are cut (or knit to shape) or sewn, regardless of whether the work is to be performed by the Contractor or one of its subcontractor(s).
2. The Contractor agrees that Canada may publicly disclose the information provided with respect the countries of origin.
3. The Contractor must immediately inform Canada in writing of any and all changes affecting the information provided under this clause during the entire contract period.

## **6.20 Overshipment**

Overshipment will not be accepted unless prior approval is obtained from the Contracting Authority.

## **6.21 Post Contract Award Meeting**

The Design Authority or his delegated representatives at National Defence Headquarters and the applicable DND Quality Assurance Representative (DNDQAR) must be afforded access to the Contractor's plant and all other premises where pertinent processes are being performed, on the same basis as afforded the representative of National Defence Headquarters, DGQA.

A post contract award meeting may be convened within twenty (20) calendar days after award of contract. Participants may include representatives of the Contractor, DND Design Authority, DNDQAR, DND project Authority, Contracting Authority and the DND Administrative Authority. Other meetings may be convened as required.

The Contractor is responsible for the recording and distribution of the minutes for all contract related meeting. The minutes must be sent to the Contracting Authority for acceptance prior to the distribution to all participants or as otherwise directed in the contract within ten (10) calendar days of the subject meeting. The minutes must be used only as a record of proceedings.

## **6.22 Pre-Production Samples and Pattern Submission**

1. The Contractor must provide pre-production samples as per *Annex B – Statement of Work*, paragraph 3.2.1 and *Annex I - Pre-production and Production Technical Validation Plan*, Table 4 and Table 5, accompanied by the sealed samples/patterns if applicable, to the Technical Authority for acceptance within **45** calendar days from date of contract award.

The Contractor must also provide the patterns as per *Annex K – Pattern submission Requirements for pre-production and production*.

2. If the pre-production samples are rejected, the Contractor must submit a second pre-production sample within **21** calendar days of notification of rejection from the Technical Authority.
3. If the pre-production samples are accepted by either full acceptance or conditional acceptance, the Contractor must proceed with production as per the Contract requirements.
4. Rejection by the Technical Authority of the second pre-production samples submitted by the Contractor for failing to meet the contract requirements will be grounds for termination of the Contract for default.
5. The Contractor must carry out all required inspection and tests to verify conformance to the technical requirements of the Contract.
6. In addition to providing the pre-production samples, the Contractor must provide laboratory test reports and Certificates of compliance as per *Annex I - Table 1, Table 2 and Table 3*, as applicable, to the Contracting Authority and Technical Authority, transportation charges prepaid, and without charge to Canada.
7. The pre-production samples submitted by the Contractor will remain the property of Canada.
8. The Technical Authority will notify the Contractor, in writing, of the full acceptance, conditional acceptance, or rejection of the pre-production samples. A copy of this notification will also be provided by the Technical Authority to the Contracting Authority. The notice of the full

acceptance or conditional acceptance does not relieve the Contractor from complying with all requirements and conditions of the Contract.

9. The Contractor must not commence or continue with production of the items and must not make any deliveries until the Contractor has received a written notification from the Technical Authority that the pre-production samples are fully acceptable or conditionally acceptable. Any production of items before pre-production sample acceptance will be at the sole risk of the Contractor.
10. The pre-production samples may not be required if the Contractor is currently in production. The request for waiver of pre-production samples must be made by the Contractor in writing to the Contracting Authority. The waiving of this requirement will be at the sole discretion of the Technical Authority and will be evidenced through a contract amendment.

#### **CERTIFICATE OF COMPLIANCE – DEFINITION**

Refer to Annex B – Statement of Work, para. 4.1.4

#### **TEST REPORTS – DEFINITION**

Refer to Annex B – Statement of Work, para. 4.1.5

### **6.23 Production Samples**

1. In addition to the pre-production samples, and if requested by the Technical Authority, the Contractor must provide production samples as per *Annex I*, Table 6 from the first production run and provide them to the Technical Authority, accompanied by the sealed samples/patterns if applicable, for acceptance within **14** calendar days from the start of the production.
2. Rejection by the Technical Authority of the production samples submitted by the Contractor for failing to meet the contract requirements will be grounds for termination of the Contract for default.
3. Laboratory analysis in accordance with those requirements detailed in *Annex J* must also be submitted, upon request by the Technical Authority.

### **6.24 Sealed Samples/Sealed Patterns - Return to Sender**

The sealed samples and sealed patterns which may have been sent to the Contractor, are to be returned to the sender upon completion of Contract.

The sealed samples and sealed patterns are not to be mutilated or cut, and must be returned in the same condition as sent to the Contractor.

### **6.25 Specifications and Standards**

#### **6.25.1 United States Military Specifications and Standards**

The Contractor is responsible for obtaining copies of all United States (US) military specifications and standards which may be applicable to the requirement. These specifications and standards are available commercially, or may be obtained by visiting the US Department of Defense Website, at the following address: [http://assistdocs.com/search/search\\_basic.cfm](http://assistdocs.com/search/search_basic.cfm)

#### **6.25.2 Canadian General Standards Board (CGSB) - Standards**

A copy of the CGSB Standards referred to in the Contract is available and may be purchased from:

Canadian General Standards Board  
Place du Portage III, 6B1  
11 Laurier Street  
Gatineau, Québec  
Telephone: (819) 956-0425 or 1-800-665-CGSB (Canada only)  
Fax: (819) 956-5740  
E-mail: [ncr.cgsb-ongc@pwgsc-tpsgc.gc.ca](mailto:ncr.cgsb-ongc@pwgsc-tpsgc.gc.ca)  
CGSB Website: <http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html>

#### **6.26 Financial Security**

1. Canada may convert the security deposit to the use of Canada if any circumstance exists which would entitle Canada to terminate the Contract for default, but any such conversion will not constitute termination of the Contract.
2. Where Canada so converts the security deposit:
  - (a) the proceeds will be used by Canada to complete the Work according to the conditions of the Contract, to the nearest extent that it is feasible to do so and any balance left will be returned to the Contractor on completion of the warranty period; and
  - (b) if Canada enters into a Contract to have the Work completed, the Contractor will:
    - (i) be considered to have irrevocably abandoned the Work; and
    - (ii) remain liable for the excess cost of completing the Work if the amount of the security deposit is not sufficient for such purpose. "Excess cost" means any amount over and above the amount of the Contract Price remaining unpaid together with the amount of the security deposit.
3. If Canada does not convert the security deposit to the use of Canada before completion of the contract period, Canada will return the security deposit to the Contractor within a reasonable time after such date.
4. If Canada converts the security deposit for reasons other than bankruptcy, the financial security must be reestablished to the level of the amount stated above so that this amount is continued and available until completion of the contract period.

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**APPENDIX "1" to PART 3 OF THE BID SOLICITATION**

**ELECTRONIC PAYMENT INSTRUMENTS**

The Bidder accepts any of the following Electronic Payment Instrument(s):

- ☐ VISA Acquisition Card;
- ☐ MasterCard Acquisition Card;
- ☐ Direct Deposit (Domestic and International);
- ☐ Electronic Data Interchange (EDI);
- ☐ Wire Transfer (International Only);
- ☐ Large Value Transfer System (LVTS) (Over \$25M)

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**APPENDIX "1" to PART 5 OF THE BID SOLICITATION**

**FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY - CERTIFICATION**

I, the Bidder, by submitting the present information to the Contracting Authority, certify that the information provided is true as of the date indicated below. The certifications provided to Canada are subject to verification at all times. I understand that Canada will declare a bid non-responsive, or will declare a contractor in default, if a certification is found to be untrue, whether during the bid evaluation period or during the contract period. Canada will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with any request or requirement imposed by Canada may render the bid non-responsive or constitute a default under the Contract.

For further information on the Federal Contractors Program for Employment Equity visit Employment and Social Development Canada (ESDC)-Labour's website.

Date: \_\_\_\_\_ (YYYY/MM/DD) (If left blank, the date will be deemed to be the bid solicitation closing date.)

Complete both A and B.

A. Check only one of the following:

- ☐ A1. The Bidder certifies having no work force in Canada.
- ☐ A2. The Bidder certifies being a public sector employer.
- ☐ A3. The Bidder certifies being a federally regulated employer being subject to the Employment Equity Act.
- ☐ A4. The Bidder certifies having a combined work force in Canada of less than 100 permanent full-time and/or permanent part-time employees.

A5. The Bidder has a combined workforce in Canada of 100 or more employees; and

- ☐ A5.1. The Bidder certifies already having a valid and current Agreement to Implement Employment Equity (AIEE) in place with ESDC-Labour.

**OR**

- ☐ A5.2. The Bidder certifies having submitted the Agreement to Implement Employment Equity (LAB1168) to ESDC-Labour. As this is a condition to contract award, proceed to completing the form Agreement to Implement Employment Equity (LAB1168), duly signing it, and transmit it to ESDC-Labour.

B. Check only one of the following:

- ☐ B1. The Bidder is not a Joint Venture.

**OR**

- ☐ B2. The Bidder is a Joint Venture and each member of the Joint Venture must provide the Contracting Authority with a completed annex Federal Contractors Program for Employment Equity - Certification. (Refer to the Joint Venture section of the Standard Instructions)



## ANNEX "A"

### REQUIREMENT AND BASIS OF PAYMENT

#### A.1. TECHNICAL REQUIREMENT

The Contractor is required to provide Canada for the Department of National Defence (DND) with Advanced Search and Rescue Uniforms (ASARU) in accordance with specifications at Annex B, C, D, E, F, G, K and L inclusively.

#### A.2. ADDRESSES

Destination Address	Invoicing Address
<b>WB941</b> Department of National Defence 25 CFSD Montreal 6363 Notre Dame St. E. Montreal, Quebec H1N 1V9	<b>W1941</b> Department of National Defence 101 Colonel By Drive Ottawa ON K1A 0K2 Attn: Andrew Aleinik, DLP 5-3-4-3
<b>W248A</b> Department of National Defence 7 CF Supply Depot 195 Ave & 82nd St., Bldg. 236 Edmonton, Alberta T5J 4J5	<b>W2481</b> Department of National Defence 101 Colonel By Drive Ottawa ON K1A 0K2 Attn: Andrew Aleinik, DLP 5-3-4-3

#### A.3. DELIVERABLES

##### A.3.1 Firm Quantity

					BASIS OF PAYMENT
Item	Description NSN	Unit of Issue	Destination	Firm Qty	Firm Unit Price, DDP, Transportation costs included, Applicable taxes extra
01	<b>Shirt, Lightweight</b> NSN 8415-20-010-0442 A/A	EACH	Montréal	510	\$ _____
			Edmonton	340	\$ _____
02	<b>Shirt, Heavyweight</b> NSN 8415-20-010-0451 A/A	EACH	Montréal	511	\$ _____
			Edmonton	339	\$ _____
03	<b>Trousers, Mens'</b> NSN 8415-20-010-0479 AA	EACH	Montréal	491	\$ _____
			Edmonton	327	\$ _____

#### A.3.1.1 "As and When Requested" Quantity - Special sizes

Item	Description	Estimated Qty	Unit of Issue	BASIS OF PAYMENT
				Firm Unit Price, DDP, Transportation costs included, Applicable taxes extra
04	SHIRT, LIGHT WEIGHT NSN 8415-20-010-0442 A/A	30	Each	\$ _____
05	SHIRT, HEAVY WEIGHT NSN 8415-20-010-0451 A/A	30	Each	\$ _____
06	TROUSERS, MEN'S NSN 8415-20-010-0479 AA	30	Each	\$ _____

#### A.3.2 OPTIONS

Item	Description	Estimated Quantity	Unit of Issue	BASIS OF PAYMENT Firm Unit Price DDP, Transportation costs included, Applicable taxes extra		
				Year 1	Year 2	Year 3
07	SHIRT, LIGHT WEIGHT NSN 8415-20-010-0442 A/A	425	each	\$ _____	\$ _____	\$ _____
08	SHIRT, HEAVY WEIGHT NSN 8415-20-010-0451 A/A	425	each	\$ _____	\$ _____	\$ _____
09	TROUSERS, MEN'S NSN 8415-20-010-0479 AA	425	each	\$ _____	\$ _____	\$ _____

#### NOTE:

IF AN OPTION IS EXERCISED:	THE CLIENT MUST USE PRICES FOR:
<ul style="list-style-type: none"> <li>Within 12 months from contract award date</li> <li>Between 13 to 24 months from contract award date</li> <li>Between 25 to 36 months from contract award date</li> </ul>	<p>Year 1</p> <p>Year 2</p> <p>Year 3</p>

#### A.4 "AS AND WHEN REQUESTED" QUANTITY(IES) - Identified as Item 04, 05, 06

Under this Contract, the Contractor is required to provide certain goods to Canada on an "as and when requested" basis. Except as expressly provided in this Contract, Canada is not obliged to request any such goods under this Contract and this Contract does not represent a commitment to purchase such goods exclusively from the Contractor.

DND may issue orders for "as and when requested" quantities directly to the Contractor detailing the exact quantities of goods being ordered and the delivery date during the effective period and in accordance with the predetermined conditions.

The quantity of "as and when requested" goods specified under items 04 to 06 inclusively is only an approximation of requirements. Order for "as and when requested" quantities will be made on a Purchase Order Form.

The period for placing "as and when requested" orders will be 36 months from contract award date.

Solicitation No. - N° de l'invitation  
W8476-185803/A  
Client Ref. No. - N° de réf. du client  
W8476-185803

Amd. No. - N° de la modif.  
File No. - N° du dossier  
pr760.W8476-185803

Buyer ID - Id de l'acheteur  
pr760  
CCC No./N° CCC - FMS No./N° VME  
draft March 2, 2018

The delivery of the "as and when requested" quantities must be made within \_\_\_\_\_ calendar days after receipt of the order document.

Deliveries made against orders of the "as and when requested" quantities will be inspected by the Consignee at destination.

#### **Order Limitation**

"As and when requested" orders must not exceed \$ (to be established at contract).

#### **Financial Limitation**

The total cost to Canada resulting from orders of "as and when requested" quantities must not exceed the sum of \$ (to be established at contract), applicable taxes extra, unless otherwise authorized in writing by the Contracting Authority. The Contractor must not be obligated to perform any work or services or supply any articles in response to orders which would cause the total cost to Canada to exceed the said sum, unless an increase is so authorized.

#### **A.5 OPTION QUANTITY(IES) - Identified as Items 07 to 09 inclusively**

The Contractor grants to Canada the irrevocable option to acquire the goods described under items 07 through 09 inclusively and under the same terms and conditions and at the prices stated in the Contract.

An option may only be exercised by the Contracting Authority for a minimum of 50 units each per item for each amendment up to a maximum of 425 units per item for all amendments in total and will be evidenced through a contract amendment.

The Contracting Authority may exercise each option within 36 months after contract award date by sending a written notice to the Contractor.

Multiple amendments may be issued to exercise options. A size roll will be provided if and when the option is exercised.

#### **A.6 USAGE OF GOVERNMENT-SUPPLIED MATERIAL**

Government-supplied Material (GSM) must be used in the manufacture of the item. Material required in addition to that estimated below must be purchased from Canada at the price indicated.

Canada will provide to the Contractor the GSM free of charge, including transportation to the following address: \_\_\_\_\_.

Partial shipment of the GSM will be made to the Contractor for the pre-production sample(s). The balance of the GSM for the production will be forwarded to the Contractor upon the date of the written notice of approval of the pre-production sample(s).

Description	NSN	Quantity per Unit	Unit Price *
One (1) Canada Flag Patch	8455-21-855-4637	One (1) each	\$0.40

\*Applicable Taxes extra



**NOTICE**

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

**AVIS**

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

## **Statement of Work (SOW) for Advanced Search and Rescue Uniform (ASARU)**

Requisition Number: W8476-185803

Date: 01-12-2017

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**Statement of Work  
For  
Advanced Search and Rescue Uniform (ASARU)  
NSN 8415-20-010-0442 A/A Shirt, Light Weight (LW)  
NSN 8415-20-010-0451 A/A Shirt, Heavy Weight (HW)  
NSN 8415-20-010-0479 A/A Pant**

**1. SCOPE**

1.1. PURPOSE. The Department of National Defence's Directorate of Soldier Systems Program Management (DSSPM) has a requirement to purchase an Advanced Search and Rescue Uniform (ASARU) in accordance with **Annex C** - DSSPM 2-6-87-0442, **Annex D** - DSSPM 2-6-87-0451, **Annex E** - DSSPM 2-6-87-0479, **Annex F** – DSSPM 2-2-80-239, and **Annex G** – DSSPM 2-2-80-249 for Search and Rescue Technicians (SAR Tech). This requirement is intended for the purchase of a new operational uniform design to replace the existing Coveralls, Search and Rescue, International Orange (IO).

1.2. BACKGROUND.

1.2.1. DSSPM is responsible to provide individual clothing, equipment and weapons for soldiers, sailors, and aviators of the CAF to enable the achievement of their mission domestically and on operations.

1.2.2. The ASARU is intended for operational use by male and female SAR Tech members of the CAF.

1.3. TERMINOLOGY.

1.3.1. ACRONYMS. The following acronyms are used in this Statement of Work (SOW).

ASARU	Advanced Search and Rescue Uniform
CA	Canadian Army
CAF	Canadian Armed Forces
CFTPO	Canadian Forces Transportation and Packaging Order
C of C	Certificate of Compliance
DA	Design Authority
DND	Department of National Defence
DNDQAR	DND Quality Assurance Representative
DQA	Directorate of Quality Assurance
DSSPM	Directorate of Soldier Systems Program Management
OCFC2	Operational Clothing and Footwear Consolidated Contract
RCAF	Royal Canadian Air Force
RCN	Royal Canadian Navy
RFP	Request For Proposal
SAR	Search and Rescue
TA	Technical Authority

## **2. REFERENCE DOCUMENTS**

2.1. Details of the required reference documents are contained within the pertinent Annexes of the Contract.

## **3. REQUIREMENTS**

3.1. GENERAL. DND requires the production of the ASARU and the subsequent delivery in the appropriate sizes and quantities, to the locations identified in accordance with the specifications found in Annexes C, D, E, F, G, and M.

### **3.2. SCOPE OF WORK**

#### **3.2.1. PREPRODUCTION**

3.2.1.1. Preproduction samples must be completely representative of the final production garment, being made from parts and materials as specified and by equipment and processes which will be used in quantity production.

3.2.1.2. The Contractor must produce the documentation identified in Annex I (Pre-Production and Production Technical Validation Plan).

3.2.1.3. The Contractor must submit patterns in accordance with Annex K (Pattern Submission Requirements for Pre-production and Production)

3.2.1.4. The Contractor must submit the physical samples and documentation for validation as detailed in Annex I.

3.2.1.5. The Contractor must provide one (1) pair of elbow pad, sealed sample PAD-EF3, Elbow Pad, Airflex, Lightweight, NSN: 8315-01-630-5217, for each preproduction ASARU lightweight AND heavyweight shirt.

3.2.1.6. The Contractor must provide one (1) pair of knee pads, sealed sample PAD-KC3-01-00 Kneepad, Airflex, Combat, NSN: 8465-01-613-2824, for each preproduction ASARU pant.

#### **3.2.2. PRODUCTION**

3.2.2.1. The Contractor must package the ASARU in accordance with the requirements specified in Annexes C, D, and E.

3.2.2.2. The Contractor must mark the packaged goods for shipment in accordance with the requirements specified in Annexes C, D, and E.

3.2.2.3. The Contractor must produce the documentation and physical samples for validation as identified in Annex I (Pre-Production and Production Technical Validation Plan).

3.2.2.4. The Contractor must deliver the ASARU in the sizes and quantities detailed in Annex M to the addresses provided in the Contract.

3.2.2.5. The Contractor must provide one (1) pair of elbow pad, sealed sample PAD-EF3, Elbow Pad, Airflex, Lightweight, NSN: 8315-01-630-5217, for each production ASARU lightweight AND heavyweight shirt.

3.2.2.6. The Contractor must provide one (1) pair of knee pads, sealed sample PAD-KC3-01-00 Kneepad, Airflex, Combat, NSN: 8465-01-613-2824, for each production ASARU pant.

#### **4. DELIVERABLES**

4.1. DELIVERABLES. The Contractor must provide the following deliverables:

##### 4.1.1. PRE-PRODUCTION.

4.1.1.1. The Contractor must submit physical samples, Quality Plan and other documentation and test results as identified in Annex I (Pre-Production and Production Technical Validation Plan).

4.1.1.2. The Contractor must provide one (1) pair of elbow pad, sealed sample PAD-EF3, Elbow Pad, Airflex, Lightweight, NSN: 8315-01-630-5217, for each preproduction ASARU lightweight AND heavyweight shirt sample submitted.

4.1.1.3. The Contractor must provide one (1) pair of knee pads, sealed sample PAD-KC3-01-00 Kneepad, Airflex, Combat, NSN: 8465-01-613-2824, for each preproduction ASARU pant sample submitted.

##### 4.1.2. PRODUCTION.

4.1.2.1. The Contractor must deliver firm quantities of specific sizes of ASARU in accordance with Annex M (Size Roll).

4.1.2.2. The Contractor must provide one (1) pair of elbow pad, sealed sample PAD-EF3, Elbow Pad, Airflex, Lightweight, NSN: 8315-01-630-5217, for each production ASARU lightweight AND heavyweight shirt.

4.1.2.3. The Contractor must provide one (1) pair of knee pads, sealed sample PAD-KC3-01-00 Kneepad, Airflex, Combat, NSN: 8465-01-613-2824, for each production ASARU pant.

4.1.2.4. If there are changes in supplier(s) of component materials during production the Contractor must submit test results in respect of the new supplier components as outlined in Annex I (Pre-Production and Production Technical Validation Plan), upon request through DND's Directorate of Quality Assurance Representative (DNDQAR). Contact information for DQA is detailed in the Contract.

4.1.2.5. CHANGES IN COLOUR. Canada reserves the right to request changes in colour for all or partial quantities of any Option exercised. Canada will define technical requirements and fund any testing required to verify that changes comply with the technical requirements.



4.1.2.6. PACKAGING. Packaging and packing for deliverables must be in accordance with Annexes C, D, and E.

4.1.2.7. MARKING. Packing must be marked in accordance with Annexes C, D, and E.

4.1.3. FORMAT AND DATA REQUIREMENTS. When submitted, technical / documentation deliverables must be delivered in accordance with the following requirements.

4.1.3.1. Technical / documentation deliverables must be clearly identified and labelled as the deliverable pertaining to a particular criterion.

4.1.3.2. Documents must be written in English and French.

4.1.3.3. Unless otherwise stated, one (1) hard copy and one (1) soft copy of these deliverables must be provided to the Technical Authority.

4.1.3.3.1. Soft copy deliverables must be provided in Adobe Acrobat (.pdf) format, or an alternative format approved by the Technical Authority on a CD/DVD.

4.1.3.3.2. Soft copies must not be password protected.

4.1.3.3.3. Soft copies must not contain an auto run installation.

4.1.4. CERTIFICATES OF COMPLIANCE.

4.1.4.1. DEFINITION. A Certificate of Compliance (C of C) is a written statement from the supplier guaranteeing the full compliance of the product to the specification, or portion thereof, referenced.

4.1.4.2. Each Certificate of Compliance must clearly include the following:

- a. The document must be on official company stationary;
- b. The document must be current:
  - I. For pre-production, it must be dated within a maximum six (6) months before or after the main contract award date; and
  - II. For production, it must be dated within two (2) months of the date of Request for Design Change, Deviation, and Waiver Procedure documentation.
- c. The document must include a statement to the effect that the referenced product complies with the referenced criteria. The criteria that the product are certified to have complied with must be included;

- d. The document must include a descriptive nomenclature of each type of product being certified. When certifying product lots, the descriptive nomenclature must also include the supplier name and lot number;
- e. All terms or conditions of the products' compliance must be included in the document;
- f. All reported test measurements must have been performed no more than two (2) years before the Solicitation issue date; and
- g. A complete Test Report will be accepted in lieu of a Certificate of Compliance (C of C), if the test results demonstrate compliance with the applicable criteria.

4.1.4.3. Canada reserves the right to verify the statements made in the C of C. Canada reserves the right to carry out testing of all specified property in order to confirm the compliance of the end item and material components with the applicable specification(s).

4.1.5. TEST REPORTS.

4.1.5.1. All testing and test methods must be in accordance with the reference criteria. Test results must be applicable for the specific samples submitted.

4.1.5.2. An accredited independent laboratory familiar with textile related testing must conduct all testing unless otherwise stated. Testing carried out by university textile testing laboratories will also be acceptable. Additional information about accredited laboratories is available on the Standards Council of Canada website (<http://www.scc.ca/en/accreditation/laboratories>). Should a non-accredited laboratory be required for specific tests, approval must be sought and received in writing from the Contracting Authority or Technical Authority (TA) (at pre-production and production) in advance.

4.1.5.3. All Test Reports must clearly include:

- a. Test results must be on official test laboratory stationary;
- b. Test results must be current:
  - I. For pre-production testing, it must be performed maximum six (6) months before or after the main contract award date; and
  - II. For production testing, it must be performed within two (2) months of the date of Request for Design Change, Deviation, and Waiver Procedure documentation.
- c. Test results must specify a descriptive nomenclature for each type of test specimen including (where applicable) the production date, lot number, and a unique identifier for each test specimen;
- d. Test results must make reference to the applicable test methods and specifications;

- e. Test results must specify testing conditions/procedures followed;
- f. The document must include:
  - I. The name and contact information of the supplier of each test sample;
  - II. The name, contact information and signature for the primary person(s) that performed the test(s) and prepared the report;
  - III. The name, contact information, and signature of the company's designated representative; and
  - IV. If they differ from those of the reporter's designated representative, the name and contact information of the entity that issued the report.
- g. The date the first measurement was obtained for the reported test(s).

4.1.5.4. Canada reserves the right to verify the statements made on the test report. Canada reserves the right to carry out testing of any specified property in order to confirm the compliance of the end item or material components with the applicable specification(s).

NOTICE



This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

**DSSPM 2-6-87-0442**

**MANUFACTURING DATA  
FOR  
SHIRT, LIGHT-WEIGHT  
ADVANCED SEARCH AND RESCUE UNIFORM (ASARU)  
NSN 8415-20-010-0442 A/A**

**1. SCOPE**

**1.1 Scope.** This Manufacturing Data covers the materials, design, construction and inspection requirements for the Shirt, Light-Weight, Advanced Search and Rescue Uniform (ASARU).

**1.2 Intended Use.** The Light-Weight (LW) Shirt will be worn by Search and Rescue Technicians (SAR Techs) in warm weather conditions under the Survival Vest, Life Preserver Yoke, Hoist/Rescue Harness, Parachute Harness and Cold Weather Outer Wear. The Light-Weight Shirt is intended to be worn with the Pant, SAR.

**2. RELATED DOCUMENTS**

**2.1 Government documents.** The following documents form part of this Manufacturing Data to the extent specified herein. Unless otherwise specified, the issue or amendment of documents effective for a particular contract must be that in effect on the date of the applicable invitation to tender or the contract.

**SPECIFICATIONS AND STANDARDS**

D-80-001-055/SF-001	Specification for Label, Clothing and Equipment
D-83-001-005/SF-001	Specification for Fasteners, Slide, Interlocking
CFTPO-General	Canadian Forces Transportation Packaging Order

**2.2 Other publications.** The following documents form part of this Manufacturing Data to the extent specified herein. Effective date must be that in effect on the date of manufacture. Source is as shown:

**Canadian General Standards Board (CGSB) Sales Unit  
11 Laurier Street  
Place du Portage, Phase III  
Gatineau, Quebec K1A 1G6  
Tel: (819) 956-0425  
Alternate Tel: (800) 665-2472  
Email: ncr.cgsb-ongc@pwgsc.gc.ca**

CAN/CGSB-4.2-M	Textile Test Methods
CAN/CGSB-54.1-M	Stitches and Seams, Parts I and II
CAN/CGSB-86.1-2003	Care Labelling of Textiles
CAN/CGSB-155.1-2001	Fire Fighters Protective Clothing for Protection against Heat and Flame

**General Services Administration (FED-STD)**

**Federal Supply Service**

**FSS Product Acquisition Center**

**Supply Standards Division (FLAS)**

**Arlington, Virginia USA 22202**

**Telephone: 703-605-2567**

**Download Documents: <https://assist.daps.dla.mil>**

A-A-55126A	Commercial Item Description - Fastener Tapes, Hook and Loop, Synthetic
A-A-55217	Thread, Aramid, Spun Staple
FED Std-595C	Federal Standard – Colours Used in Government Procurement

**2.3 DSSPM documents.** The following documents form part of the Technical Data Package for Shirt, Light-Weight, Search and Rescue:

DSSPM 2-2-80-239	Specification for Cloth, Twill, Aramid / FR Viscose, 185 g/m <sup>2</sup> (Annex F, less Paragraphs 2.4, 4, 5 and 6)
DSSPM 2-2-80-249	Specification for Cloth, Knit, Flame Resistant, 130 g/m <sup>2</sup> (Annex G, less Paragraphs 2.4, 4, 5 and 6)

**2.4 Figures.** The following Figures form part of this Manufacturing Data. Figures are not to scale.

Figure 1	Front and back view
Figure 2	Front Details
Figure 3	Back Details
Figure 4	Component Details
Figure 5	Care and Marking Label

**2.5 Sealed patterns.** Sealed patterns will be supplied to the contractor by the Contracting Authority. The sealed pattern will constitute the standard in regards to any properties not specified in this Manufacturing Data.

DSSPM 106-16P*	Shirt, Light-Weight, SAR (Sealed for provisional construction and design concept)
DCGEM 263-78	Cloth, SAR International Orange (Colour guidance only)
PAD-EF3	Elbow Pad, Airflex, Lightweight

**\*Note:** Sealed Pattern DSSPM 106-16P has the following deviations:

- a. Garment sample for construction only. Sealed patterns for textiles provided, with drawings to indicate material and colour;
- b. Yoke of shell material with slide fastener closure extending into the seam as specified in para 3.5.3.1 and Figure 2;
- c. There are no elasticized loops on the sleeve pockets;
- d. Loop patches to be included on pockets to secure the pocket flap as specified in para 3.5.3.3 and Figure 4;
- e. Shoulder straps for rank insignia on both shoulders as specified in para 3.5.2.1 and Figure 2;
- f. Canada Flag patch sewn on the left shoulder as specified in para 3.5.2.2. and Figure 2;
- g. Loop patches on sleeve pocket and flap as specified in para 3.5.2.3 and Figure 2;
- h. Loop tape for name tape badge on front right yoke as specified in para 3.5.2.4 and Figure 2;
- i. Sleeve Pocket hook and loop patches must be sized as specified in para 3.5.3.3 and Figure 4; and
- j. Elbow pad casing to accommodate removable soft shell elbow pad as specified in para 3.5.3.4 and Figure 3.

2.6 **Technical design patterns.** The technical design patterns called for at Annex B, para 3.2.1.4 must be used.

## 2.7 **Order of precedence for Manufacturing Data.**

2.7.1 In the event of conflict between the documents referenced herein and the contents of this Manufacturing Data, the contents of this document must take precedence.

2.7.2 In the event of inconsistency within this Manufacturing Data, the Contracting Authority must be contacted for clarification.

## 3. **REQUIREMENTS**

3.1 **Design.** The design must be in accordance with Sealed Pattern DSSPM 106-16P and must incorporate the following features:

- a. Mandarin collar;
- b. Front slide fastener closure with internal fly;
- c. Name tape badge loop attachment and SAR Tech Wing badge;
- d. Shirt construction of flame resistant woven and knit materials;
- e. Pocket on upper sleeves with hook and loop closure;
- f. External elbow pad casing with removable elbow pad;
- g. Cuff with hook and loop adjuster; and
- h. Shoulder straps for rank insignia.

3.1.1 Unless otherwise specified, this garment will be governed by the Scale of Measurements (see Appendix I).

## 3.2 **Materials**

### 3.2.1 **Knit shell material for the torso, sleeve underarms, front closure fly and inside collar.**

The knit material must be Cloth, Knit, Flame Resistant, 130 g/m<sup>2</sup> in accordance with DSSPM 2-2-80-249 (Annex G). The colour used on the Light-Weight Shirt must be Khaki in accordance with FED-STD 595 #20180.

**3.2.2 Woven shell material for the sleeves, sleeve pockets, front yoke, shoulder straps, and outside collar.** The material used must be cloth, twill weave, 185 g/m<sup>2</sup> in accordance with DSSPM 2-2-80-239 (Annex F). The colour used for Light-Weight Shirt must be SAR International Orange in accordance with DCGEM 263-78.

**3.2.3 Elbow Pad.** The removable elbow pad must fit securely in the elbow pad casing. Airflex Elbow Pad Style: PAD-EF3 from Crye Precision NSN 8315-01-630-5217 is known to meet this requirement,

**3.2.4 Government Supplied Material (GSM).** The following will be available from the Government as Government Supplied Material (GSM) for each shirt:

- a. One (1) Canada Flag Patch (NSN: 8455-21-855-4637)

**3.2.5 Slide fasteners.** The slide fastener used for the front neck opening must be a flame retardant treated, monofilament (coil) slide fastener Class 3, Type 1 with an automatic locking slider and a pull tab with large hole in accordance with D-83-001-005/SF-001. The flame resistance must pass the FAR 25.853 Flammability Test and FMVSS 302 for Requirements of Burn Rate. The colour of the slide fasteners must be a good visual match to the woven or knit shell material. The slide fastener length used for all sizes of shirt must extend the length of the centre front yoke. When tested in accordance with the applicable test methods, the slide fasteners must meet the requirements for colourfastness and strength. **Note:** YKK Canada slide fastener CFC 456 DALH1 E 9/16 "FR-AIR" (3939 Thimens Blvd, Ville St-Laurent, QC H4R 1X3 Tel.: (514) 332-3356) has been known to meet this technical requirement.

**3.2.6 Hook and loop fastener tape.** The hook and loop fastener tape must be Type II, Class 1 in accordance with A-A 55126A. The colour of the tape must be a good visual match to the woven or knit shell material. The detailed requirements are as follows:

**Table I: Hook and Loop Fastener Tape Details**

LOCATION		FASTENER TAPE - HOOK				FASTENER TAPE - LOOP			
		width		length		width		length	
		in	cm	in	cm	in	cm	in	cm
1	Sleeve pocket flaps	1	2.5	4-1/4	11.0	1	2.5	4-1/4	11.0
2	Sleeve pocket flaps (exterior)	n/a				4-1/4	11.0	2	5.1
3	Sleeve pockets (exterior)	n/a				4-1/4	11.0	5-1/2	14.0
4	Rank Insignia Epaulette	1	2.5	1	2.5	1	2.5	1	2.5
5	Name Tape Badge	n/a				4-1/4	11.0	2-1/4	5.7
6	Cuff Closure	1	2.5	2	5.1	1	2.5	6-1/4	15.9
7	Elbow Pad (interior)	Included on Elbow Pad				As per sealed sample			

**3.2.7 Thread.** The thread for seaming, stitching, bartacks, and serging must be Thread, Aramid, Spun Staple, Tex 27, in accordance with Type II of A-A-55217. The colour must match the components being sewn.

3.2.8 **Labels.** A marking label in accordance with D-80-001-055/SF-001 and a care label in accordance with CAN/CGSB-86.1-2003 must be sewn to each shirt. The colour for the labels used for Light-Weight Shirts must be Khaki to match FED STD 595 #20180. .

### 3.3 Cutting

3.3.1 The shell parts of each garment must be cut in the direction of the warp.

3.3.2 The shell parts of each garment must be from the same piece of shell material, with the exception of pocket facings, flaps and welts.

### 3.4 Sewing

3.4.1 All seams must be in accordance with CAN/CGSB-54.1-M.

3.4.2 Unless otherwise specified, seams must be a minimum of 3/8-inch (9.5 mm) wide.

3.4.3 The inherent properties of FR material render it prone to excessive fraying. Additional allowance has been incorporated into the patterns to accommodate fraying. Care must be taken to ensure that all seam allowances be adhered to without compromise to the shape and finished dimensions outlined in the scale of measurements.

3.4.4 Unless otherwise stated, all seaming and stitching must be class 300 lockstitch series.

3.4.5 Unless otherwise stated, there must be a gauge of 8 to 10 stitches per inch (2.5 cm) in all seams and stitchings.

3.4.6 The stitches must present a regular even appearance without fabric pucker and must be free from skips that may result from faulty machine tension or other stitching malfunctions.

3.4.7 Coverstitching of the hem must be done using stitch type 406 with needle spacing of 1/4-inch (8.3 mm) and a minimum gauge of 15 stitches per inch (2.5 cm).

3.4.8 Lapped, flatlock seams used for the body (knit portion) must be seam type 2.01.01 and stitch type 607 with a minimum width gauge of 3/16-inch (5.0 mm).

3.4.9 **Serging.** All exposed raw edges must be serged. Serging must be done using a three-thread serger, numerical designation 504 or 505, with a minimum gauge of 10 stitches per inch (2.5 cm). Simple overlock operations such as pocket edges may be two-thread serging, numerical designation 502 or 503, having not less than 10 stitches or more than 12 stitches per inch (2.5 cm). Width bite must be 3/8-inch (9.5 mm).

3.4.10 **Hook and loop fastener tape.** Hook and loop fastener tape must be stitched around all edges 1/8-inch (3.2 mm) gauge. Care must be taken to ensure stitching is formed into the hook and loop portion of the tape.

3.4.11 When tapes wider than 1 inch (2.5 cm) are used, they must be stitched around all edges and through the centre or have an 'X' enclosed in the box.

3.4.12 **Bartacks.** Unless otherwise specified, bartacks must be 1/2-inch (12.7 mm) long and must have not less than 20 cover stitches.

### 3.5 Construction



**3.5.1 Performance requirements.** The LW Shirt must consist of a front closure pull-over design with full-length sleeves with the following:

- a. Front closure sized to permit easy donning/doffing of the shirt;
- b. Front closure with low profile slide fastener, internal fly and placket to prevent chaffing;
- c. Fasteners, adjusters, pocket flaps, and elbow pad to permit single-hand insertion and removal;
- d. Elbow pads removable/replaceable by the user without having to remove the shirt;
- e. Hook and loop tapes to be positioned to effect proper closure;
- f. Sleeve cuff fully extended, large enough to pass over the bicep;
- g. No raised seams where operational equipment such as survival vests, life preserver yokes and/or hoist/rescue, parachute harnesses or other equipment can apply acute pressure on the shoulders, waist and back;
- h. No snap fasteners or buttons which could cause pressure points on the body; and
- i. Construction, design, fit, seamage and finishings to withstand regular operational activities carried out by SAR Technicians.

### **3.5.2 Insignia Requirements (Figure 2)**

**3.5.2.1 Shoulder Straps for Rank Insignia.** The LW Shirt must have shoulder straps made of woven shell material to secure the standard RCAF Distinctive Environmental Uniform (DEU) slip-on rank insignia (large and small). The straps must be secured with hook and loop fasteners as listed in Table I, so that the straps lie flat.

**3.5.2.2 Canada Flag.** The Canada Flag Patch (NSN: 8455-21-855-4637), supplied as GSM, must be stitched to the right shoulder, centred between the shoulder and pocket flap seams.

**3.5.2.3 Unit and Squadron badge fastener tapes.** With the flap closed, the loop fastener (Table I) used to secure the unit and squadron badges on each exterior sleeve pocket must be long enough to accommodate a 3-5/16-inch (8.41 cm) badge.

**3.5.2.4 Name Tape Badge fastener tape.** The loop fastener (Table I) used to secure the Name Tape Badge to the front chest must be placed symmetrically to the right of the slide fastener as per Figure 2.

### **3.5.3 Assembly requirements**

**3.5.3.1 Collar, yoke and front closure (Figure 4).** The collar and front closure must have the following:

- a. Mandarin collar made of three (3) plies of material, one (1) ply of the knit material for the inner collar, and the remaining two (2) plies of the woven material for the outer collar and interlining;
- b. Yoke of woven material extending the full length of the front closure opening; and
- c. Low profile slide fastener extending from top of the collar to the bottom yoke seam, with internal fly and placket of knit shell material at the top of the slide fastener.

**3.5.3.2 Sleeves.** Sleeves must be full length with upper bellows pockets, external elbow casing and wrist adjuster.

**3.5.3.3 Sleeve Pockets (Figure 3).** The LW Shirt must have a semi bellows pocket with flap closure on each sleeve as follows:

- a. Bellows at the back of the pocket;
- b. Flap across the top, extending the width of the pocket, secured by hook and loop fastener tape as listed in Table I, effecting proper closure of the flap;
- c. Loop patches on the exterior flap and pockets as listed in Table I; and
- d. A care and marking label stitched into the seam on the underside of the left sleeve pocket flap.

**3.5.3.4 Elbow Pad Casing (Figure 3).** The LW Shirt must have an external casing suitable for holding a removable elbow pad as follows:

- a. Opening to accommodate the in-service Elbow Pads NSN: 8315-01-630-5217; and
- b. Elbow pads secured in place using hook and loop fasteners as listed in Table I.

**3.5.3.5 Cuffs (Figure 2).** The LW Shirt cuff must have a cut on double-layer construction, with a cuff adjuster with hook and loop fastener tape as follows:

- a. Tab with hook tape, as listed in Table I, stitched to the sleeve closing outward to the back; and
- b. Loop tape as listed in Table I, stitched to the cuff and extending half the circumference of the sleeve opening.

**3.6 Measurements.** Measurements must be as shown on the applicable Figures and Scale of Measurements (see Appendix I).

**3.7 Marking label.** A marking label in accordance with D-80-001-055/SF-001 must be stitched by the contractor into the seam on the underside of the left sleeve pocket flap. An example of the care and marking label is provided in Figure 5. The marking must be printed in black and must give the following information printed in characters not less than 1/8-inch (3.2 mm) nor more than 1/4-inch (6.4 mm) in height, with the exception of the size identification which must be twice the height:

- a. Abbreviated Nomenclature (SHIRT, LW, ASARU / CHEMISE LEG, UARES)
- b. NATO Stock Number (see Appendix I);
- c. Size by height and chest (see Scale of Measurements – Appendix I);
- d. NATO size designation (see Scale of Measurements – Appendix I);
- e. Contract Number;
- f. Contractor Name. No initials, logos or trademarks must be used;
- g. Date of Manufacture;
- h. Fibre content;
- i. Care symbols (see para 3.8) in black ink;
- j. The following care instructions:

DO NOT USE LIQUID FABRIC SOFTENER. REMOVE ELBOW PADS BEFORE LAUNDERING / NE PAS UTILISER D'ASSOUPPLISSANT LIQUIDE. ENLEVER LES PROTEGE COUDES AVANT LE LAVAGE.

- k. User ID.

**3.8 Care labelling.** Care symbols must be included on the marking label. The following care symbols, as defined in CAN/CGSB-86.1-2003 must be used:

- a. Table 1 – Washing – symbol 6;
- b. Table 2 – Bleaching – symbol 3;
- c. Table 3 – Drying – symbol 4;
- d. Table 4 – Ironing/Pressing – symbol 2;
- e. Table 5 – Professional Textile Care – symbol 3.

3.9 **Finishing.** The LW Shirt must be cleaned, pressed, folded and packaged in accordance with CFTPO-General.

### 3.10 Packaging

3.10.1 **Packaging and packing.** Unless otherwise specified, the packaging, packing and delivery must be in accordance with the terms of the contract.

3.10.2 The information conveyed on the label must be the NATO Stock Number (NSN) and the Nomenclature in bilingual format (SHIRT, LW, ASARU / CHEMISE LEG, UARES). The NATO Stock Number must be applied in Standard Bar Code Symbology, UCC/EAN-128 with AI 7001, including HRI, in accordance with CFTPO-GENERAL.

**TABLE II – NATO STOCK NUMBERS FOR SHIRT, LIGHTWEIGHT,  
ADVANCED SEARCH AND RESCUE UNIFORM (ASARU)**

NSN	SIZE
8415-20-010-0442	A/A
8415-20-010-0443	EXTRA SMALL
8415-20-010-0444	SMALL
8415-20-010-0445	MEDIUM
8415-20-010-0446	LARGE
8415-20-010-0447	EXTRA LARGE
8415-20-010-0448	EXTRA EXTRA LARGE
8415-20-010-0449	SPECIAL SIZE

FIGURE 1: FRONT AND BACK VIEW

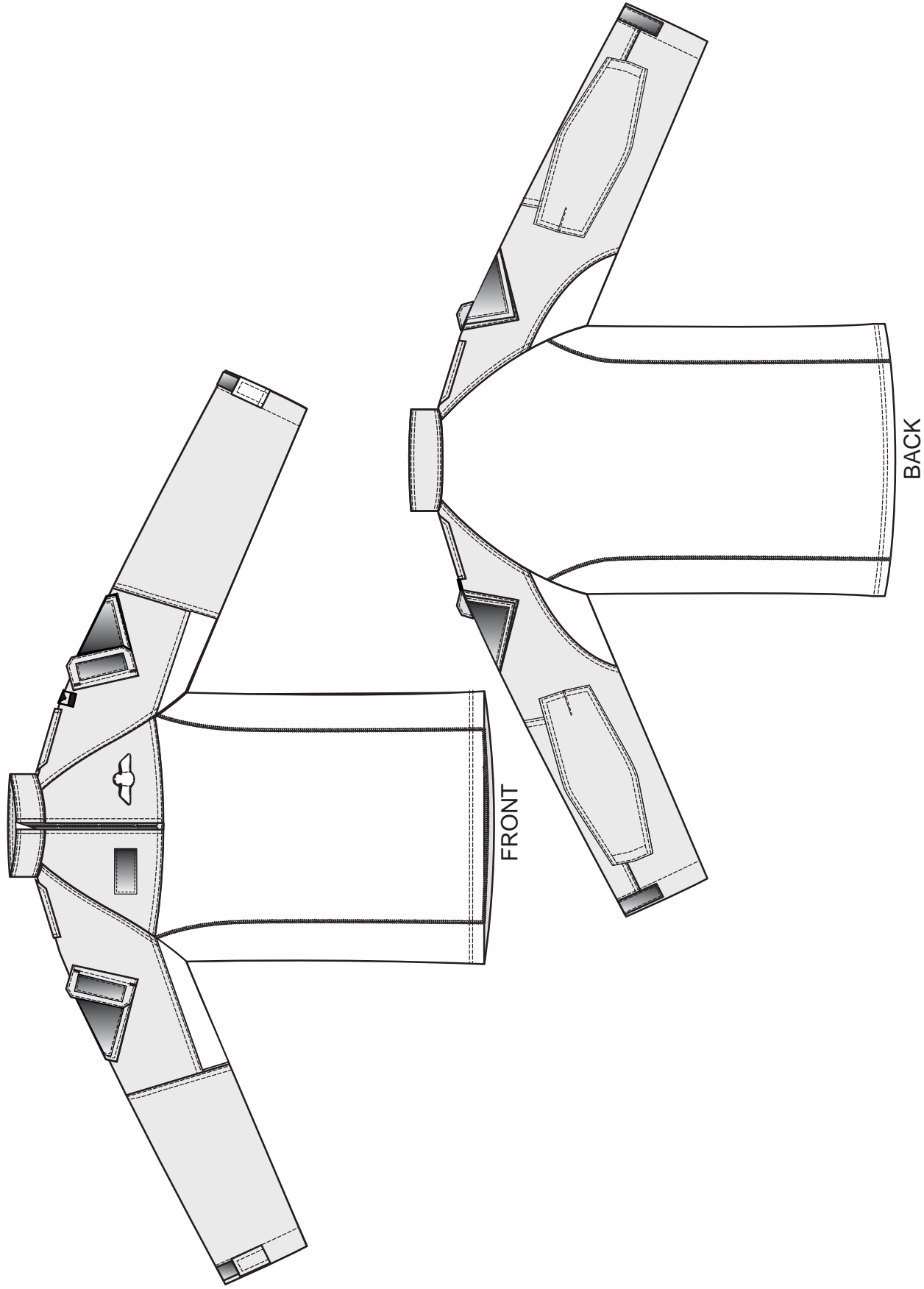
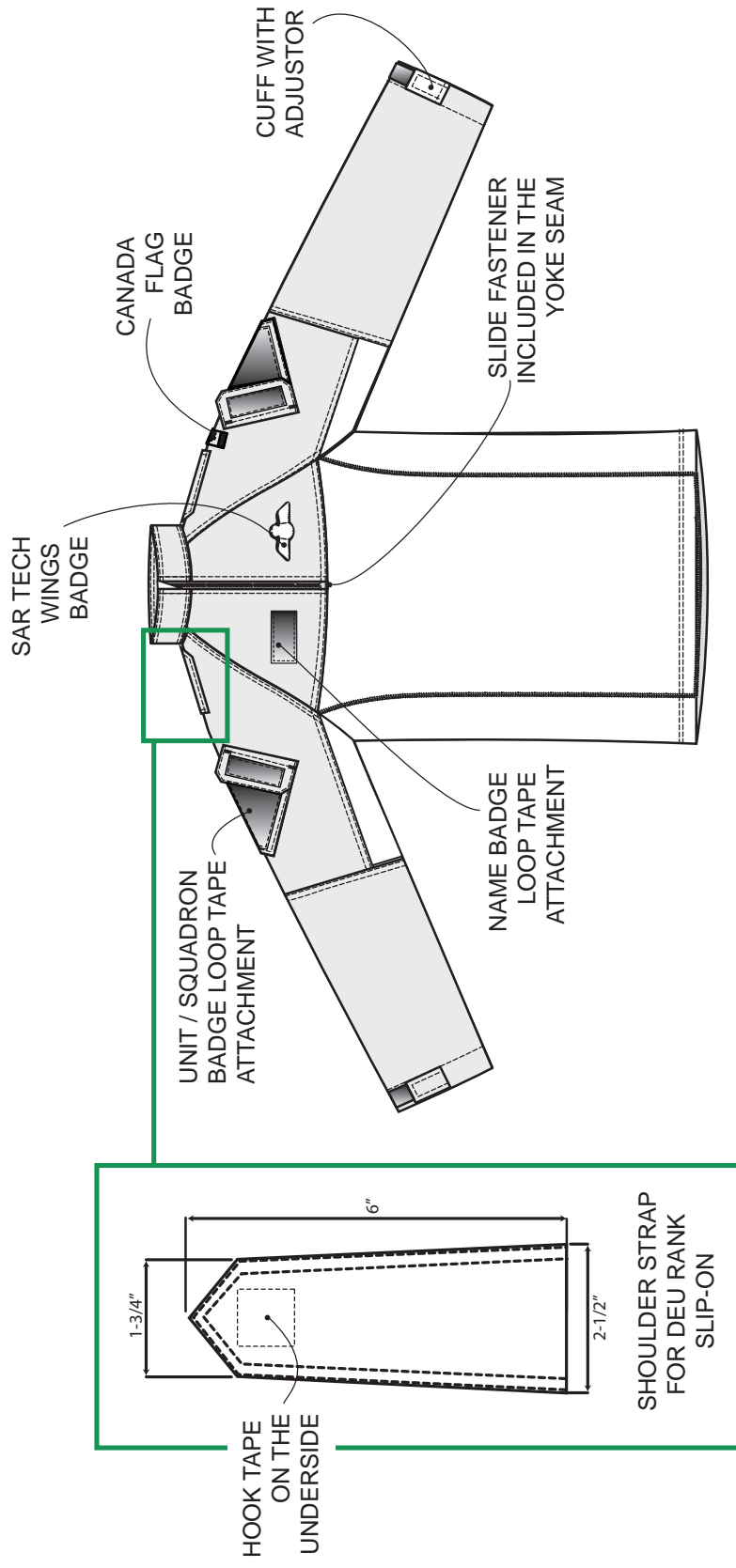


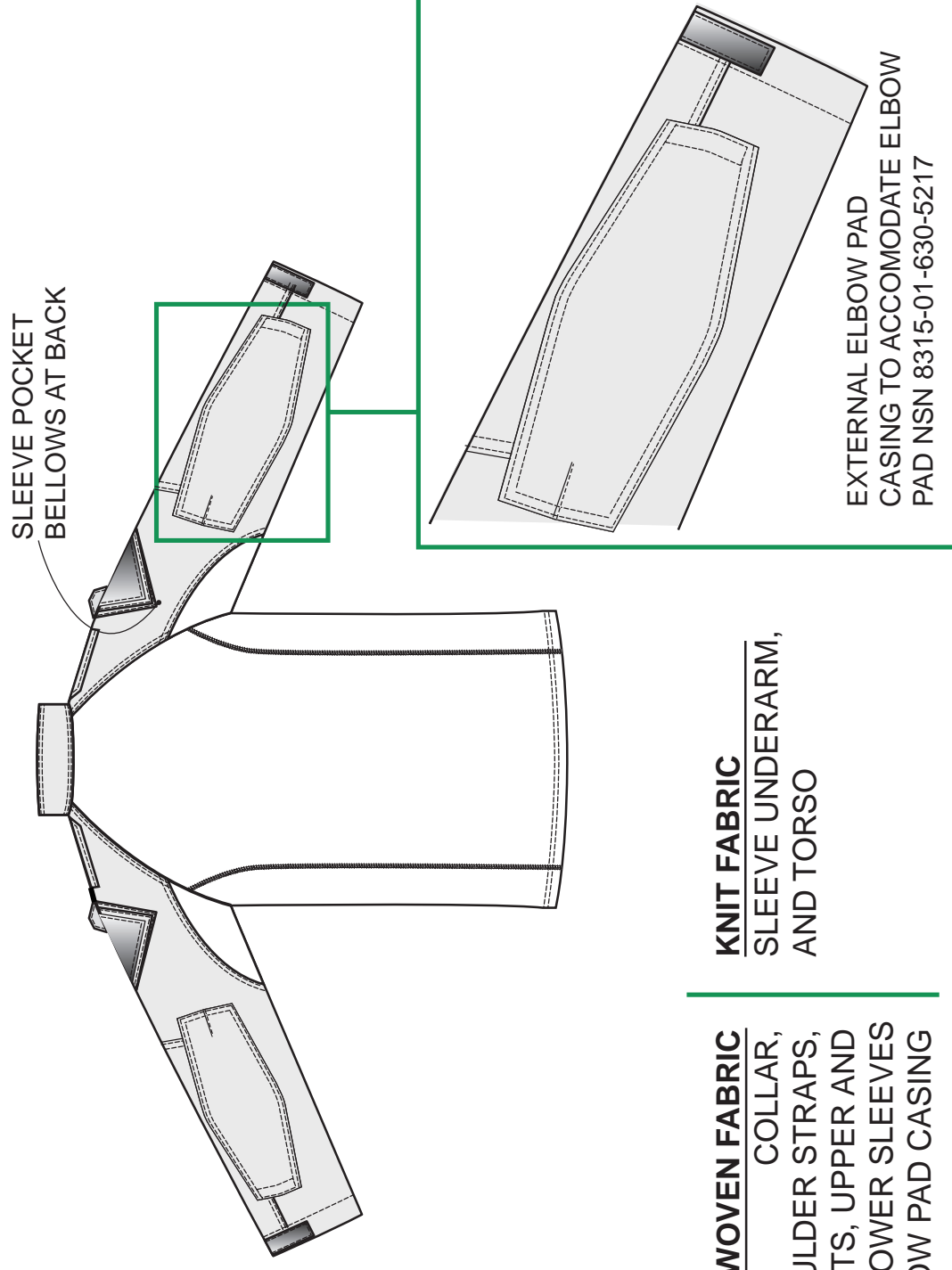
FIGURE 2: FRONT DETAILS



**WOVEN FABRIC**  
COLLAR, YOKE,  
SHOULDER STRAPS,  
POCKETS, UPPER AND  
LOWER SLEEVES

**KNIT FABRIC**  
SLEEVE UNDERARM,  
AND TORSO

FIGURE 3: BACK DETAILS



**WOVEN FABRIC**  
COLLAR,  
SHOULDER STRAPS,  
POCKETS, UPPER AND  
LOWER SLEEVES  
ELBOW PAD CASING

**KNIT FABRIC**  
SLEEVE UNDERARM,  
AND TORSO

FIGURE 4: COMPONENT DETAILS

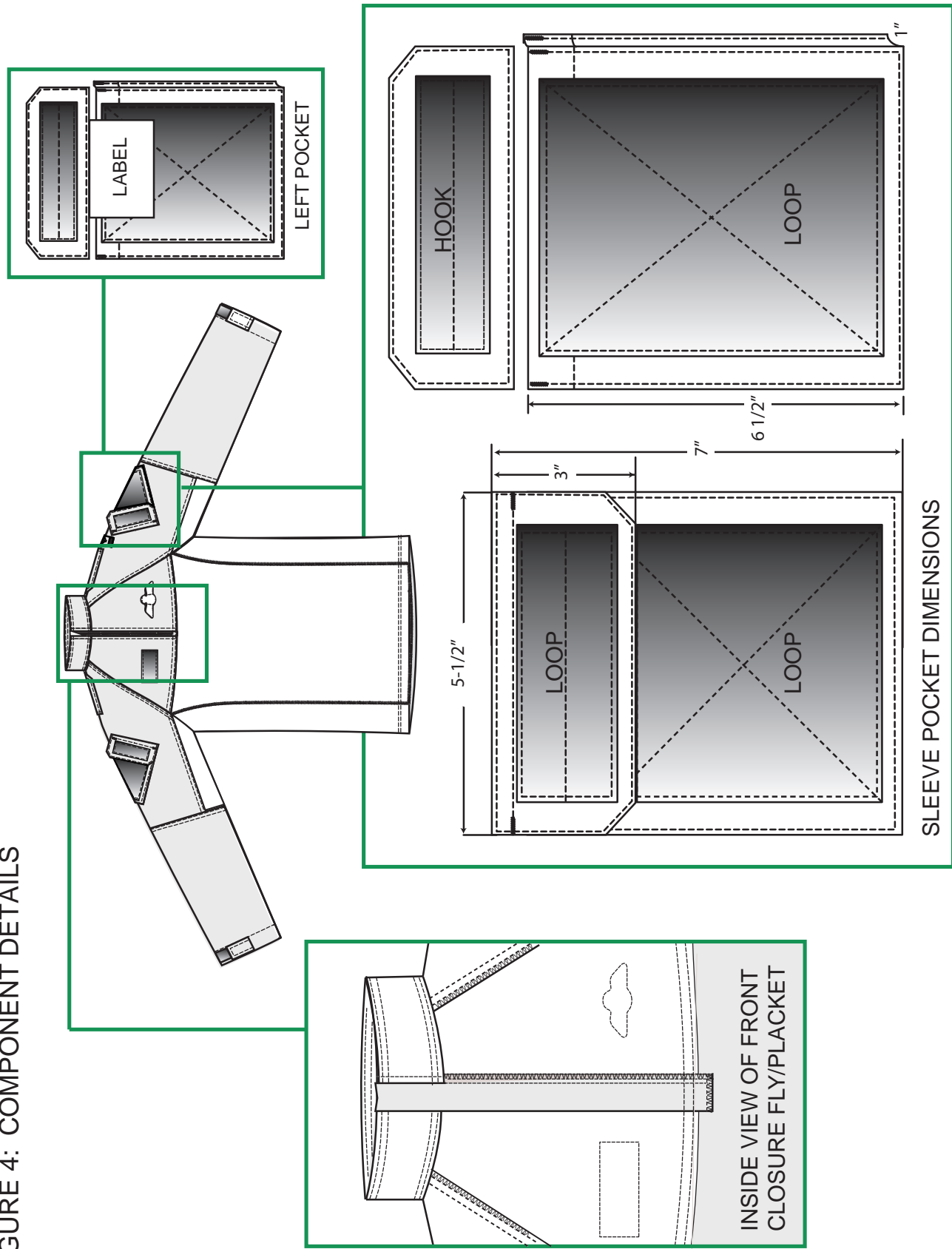








FIGURE 5: CARE AND MARKING LABEL

ITEM & CONTRACT INFO	ARTICLE ET INFO SUR LE CONTRAT
CARE	ENTRETIEN
USER ID	ID DE L'UTILISATEUR

SHIRT LW, ASARU  
CHEMISE LEG, UARES  
NSN/NNO: 8415-20-XXX-XXXX

**SIZE/TAILLE: M/M (37-40)**  
NATO SIZE / TAILLE OTAN : XXXX-XXX  
CONTRACT NO. / NO. DE CONTRAT: WXXXX-XXXXXX  
CONTRACTOR NAME/NOM D'ENTREPRENEUR: Jones & Company  
DATE OF / DE MANUFACTURE: MM/YY  
FIBRE CONTENT / TENEUR DE FIBRES: XXXXXXXXXXXXXXX



DO NOT USE LIQUID FABRIC SOFTENER. REMOVE ELBOW PADS  
BEFORE LAUNDERING / NE PAS UTILISER D'ASSOUPLISSANT  
LIQUIDE. ENLEVER LES PROTEGE COUDES AVANT LE LAVAGE

I.D. \_\_\_\_\_



Appendix I to Annex C -  
SCALE OF MEASUREMENTS  
LIGHTWEIGHT SHIRT, ASARU

December 2017

BODY MEASUREMENTS		MEASUREMENTS OF FINISHED GARMENT							
SIZE	CHEST	CHEST 1-IN BELOW ARMHOLE	WAIST CIRC STRETCHED	BOTTOM CIRC STRETCHED	BACK LENGTH FROM NECK SEAM	SLEEVE LENGTH FROM CB	SLEEVE LENGTH AT UNDERARM	NECK	BOTTOM SLEEVE CIRCUMFERENCE
X-SMALL	29-32	38	33	32	29	33 1/2	19 1/2	16	14
SMALL	33-36	42	37	36	30	34	20 1/2	17	14 1/2
MEDIUM	37-40	46	41	40	31	34 1/2	21 1/2	18	15
LARGE	41-44	50	45	44	32	35	22 1/2	19	15 1/2
X-LARGE	45-48	54	49	48	33	35 1/2	23 1/2	20	16
XX-LARGE	49-52	58	53	52	34	36	24 1/2	21	16 1/2
TOLERANCE PLUS OR MINUS		1	1	1	3/4	1/2	1/2	1/2	1/4

Dimensions are in inches



NOTICE

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document must continue to apply.

**MANUFACTURING DATA  
FOR  
SHIRT, HEAVY-WEIGHT  
ADVANCED SEARCH AND RESCUE UNIFORM (ASARU)  
NSN 8415-20-010-0451 A/A**

**1. SCOPE**

**1.1 Scope.** This Manufacturing Data covers the materials, design, construction and inspection requirements for the Shirt, Heavy-Weight, Advanced Search and Rescue Uniform (ASARU).

**1.2 Intended Use.** The Heavy-Weight (HW) Shirt will be worn by Search and Rescue Technicians (SAR Techs) under the Survival Vest, Life Preserver Yoke, Hoist/Rescue Harness, Parachute Harness and Cold Weather Outer Wear. The Heavy-Weight Shirt is intended to be worn with the Pant, SAR.

**2. RELATED DOCUMENTS**

**2.1 Government documents.** The following documents form part of this Manufacturing Data to the extent specified herein. Unless otherwise specified, the issue or amendment of documents effective for a particular contract must be that in effect on the date of the applicable invitation to tender or the contract.

**SPECIFICATIONS AND STANDARDS**

CF-B-854	Buttons, Nylon
D-80-001-055/SF-001	Specification for Label, Clothing and Equipment
D-83-001-005/SF-001	Specification for Fasteners, Slide, Interlocking
CFPTO-General	Canadian Forces Transportation Packaging Order

**DRAWINGS**

373118	Button, Nylon, Slotted, 30 Ligne
8790166	Strap and Button Argt, 30-ligne, Type I

**2.2 Other publications.** The following documents form part of this Manufacturing Data to the extent specified herein. Effective date must be that in effect on the date of manufacture. Source is as shown:

**Canadian General Standards Board (CGSB) Sales Unit**  
11 Laurier Street  
Place du Portage, Phase III  
Gatineau, Quebec K1A 1G6  
Tel: (819) 956-0425

**Alternate Tel: (800) 665-2472**  
**Email: ncr.cgsb-ongc@pwgsc.gc.ca**

CAN/CGSB-4.2-M	Textile Test Methods
CAN/CGSB-54.1-M	Stitches and Seams, Parts I and II
CAN/CGSB-86.1-2003	Care Labelling of Textiles
CAN/CGSB-155.1-2001	Fire Fighters Protective Clothing for Protection against Heat and Flame

**General Services Administration (FED-STD)**  
**Federal Supply Service**  
**FSS Product Acquisition Centre**  
**Supply Standards Division (FLAS)**  
**Arlington, Virginia USA 22202**  
**Telephone: 703-605-2567**  
**Download Documents: <https://assist.daps.dla.mil>**

A-A-55126A	Commercial Item Description - Fastener Tapes, Hook and Loop, Synthetic
A-A-55217	Thread, Aramid, Spun Staple

**2.3 DSSPM documents.** The following documents form part of the Technical Data Package for Shirt, Heavy-Weight, Search and Rescue:

DSSPM 2-2-80-239	Specification for Cloth, Twill, Aramid / FR Viscose, 185 g/m <sup>2</sup> (Annex E, less Paragraphs 2.4, 4, 5 and 6).
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**2.4 Figures.** The following Figures form part of this Manufacturing Data. Figures are not to scale.

Figure 1	Front and Back View
Figure 2	Component Details
Figure 3	Dimensions of Pockets
Figure 4	Back Details
Figure 5	Care and Marking Label

**2.5 Sealed patterns.** Sealed patterns will be supplied to the successful tenderer by the Contracting Authority. The sealed pattern will constitute the standard in regards to any properties not specified in this Manufacturing Data

DSSPM 105-16P*	Shirt, Heavy-Weight, SAR (Sealed for provisional construction and design concept)
DCGEM 263-78	Cloth, SAR International Orange (Colour guidance only)
PAD-EF3	Elbow Pad, Airflex, Lightweight

**\*Note:** Sealed Pattern DSSPM 105-16P has the following deviations:

- a. Garment sample for construction only. Textile samples provided, with drawings to indicate material and colour;
- b. Rank Insignia strap secured by hook and loop patches centred on the outer front facing as specified in para 3.5.2.1 and Figure 2;
- c. Canada Flag patch sewn on the left shoulder as specified in para 3.5.2.2 and Figure 2;
- d. Loop patches on sleeve pocket and flap as specified in para 3.5.2.3 and Figure 2;
- e. Name Tape loop attachment on the right chest as specified in para 3.5.2.4 and Figure 2;
- f. Elasticized loops on the sleeve pockets must be removed.

**2.6 Technical design patterns.** The Contractor must use the technical design patterns call for at Annex A, Paragraph 3.2.1.4.

### **2.7 Order of precedence for Manufacturing Data**

**2.7.1** In the event of conflict between the documents referenced herein and the contents of this Manufacturing Data, the contents of this document must take precedence.

**2.7.2** In the event of inconsistency within this Manufacturing Data, the Contracting Authority must be contacted for clarification.

## **3. REQUIREMENTS**

**3.1 Design.** The design must be in accordance with Sealed Pattern DSSPM 105-16P and must incorporate the following features:

- a. Woven shell material;
- b. Mandarin collar;
- c. Rank strap centred on front closure;
- d. Name tape badge loop attachment on front chest;
- e. Centre front closure with covered buttons;
- f. Integrated two pocket system on each chest;
- g. Integrated two pocket system on each upper sleeve;
- h. External elbow pad casing with removable elbow pad; and
- i. Cuff with hook and loop adjustor.

**3.1.1** Unless otherwise specified, this garment must be governed by the Scale of Measurements (see Appendix I).

### **3.2 Materials**

**3.2.1 Shell material.** The shell material used must be cloth, twill weave, 185 g/m<sup>2</sup> in accordance with DSSPM 2-2-80-239 (Annex F). The colour used for Heavy-Weight Shirt must be SAR International Orange in accordance with DCGEM 263-78.

**3.2.2 Elbow Pad.** The removable elbow pad must fit securely in the elbow pad casing. Airflex Elbow Pad Style: PAD-EF3 from Crye Precision NSN 8315-01-630-5217 is known to meet this requirement,

**3.2.3 Government Supplied Material (GSM).** The following will be available from the Government as Government Supplied Material (GSM) for each Shirt, Heavy Weight for Search and Rescue:

- a. One (1) Canada Flag Patch (NSN: 8455-21-855-4637)

**3.2.4 Slide fasteners.** The pocket slide fasteners used for the heavy-weight shirt must be a flame retardant treated, monofilament (coil) slide fastener. Class 3, Type 1 with an automatic locking slider and a pull tab with large hole in accordance with D-83-001-005/SF. The flame resistance must pass the FAR 25.853 Flammability Test and FMVSS 302 for Requirements of Burn Rate. The colour of the slide fasteners must be a good visual match to the woven fabric used as the body. The detailed requirements are identified in Table I. When tested in accordance with the applicable test methods, the slide fasteners must meet the requirements for colourfastness and strength. **Note:** YKK Canada slide fastener CFC 456 DALH1 E 9/16 "FR-AIR" (3939 Thimens Blvd, Ville St-Laurent, QC H4R 1X3 Tel.: (514) 332-3356) has been known to meet this technical requirement.

**Table I: Requirements for Slide Fasteners**

Application	Class	Type	Length
Chest Pockets	3	1	7-1/2 in (19 cm)
Sleeve Pockets	3	1	6 in (15.2 cm)

**3.2.5 Hook and loop fastener tape.** The hook and loop fastener tape must be Type II, Class 1 in accordance with A-A 55126. The colour of the tape must match the woven shell material. The detailed requirements are as follows:

**Table II: Hook and Loop Fastener Tape Details**

LOCATION		FASTENER TAPE - HOOK				FASTENER TAPE - LOOP			
		Width		length		width		length	
		in	cm	in	cm	in	cm	in	cm
1	Collar front closure	2	5.1	1	2.5	2	5.1	1	2.5
2	Rank Insignia Strap	1	2.5	1	2.5	1	2.5	1	2.5
3	Name Tape Badge	n/a				2-1/4	5.7	4-1/4	11.0
4	Chest pocket flaps	1	2.5	4-1/4	11.0	1	3.8	4-1/4	10.2
5	Sleeve pocket flaps	1	2.5	4-1/4	11.0	4-1/4	11.0	5-1/2	14.0
6	Sleeve pocket flaps (exterior)	n/a				4-1/4	11.0	2	5.1
7	Sleeve pockets (exterior)	n/a				4-1/4	11.0	5-1/2	14.0
8	Cuff adjustor	1	2.5	2	5.1	1	2.5	6-3/4	17.1
9	Elbow Pad Pockets	3/4	2.0	3	7.6	3/4	2	3	7.6

**3.2.6 Buttons.** The buttons must be nylon, conforming to specification CF-B-854, and Drawing 373118. The colour used must be Khaki to match FED STD 595 #20180. Five (5) buttons size 30-ligne must be required for each HW Shirt. When specified, the button assemblies must be in accordance with Drawing 8790166 for 30 ligne buttons.

**3.2.7 Thread for seaming, stitching, bartacks, and serging.** The thread for seaming, stitching, bartacks, and serging must be Thread, Aramid, Spun Staple, Tex 27, in accordance with Type II of A-A-55217. The colour must match the components being sewn.

**3.2.8 Buttonhole gimp.** The buttonhole gimp must be 100% cotton, 3-cord soft finish, R50Tex conforming to 4-GP-80Ma. The colour must match the components being sewn.

3.2.9 **Labels.** A marking label in accordance with D-80-001-055/SF-001 and care label in accordance with CAN/CGSB-86.1-2003 must be sewn to each shirt. The colour for the labels used for shirt must be Khaki to match FED STD 595 #20180.

### 3.3 Cutting

3.3.1 The shell parts of each garment must be cut in the direction of the warp.

3.3.2 The shell parts of each garment must be from the same piece of shell material, with the exception of pocket facings, flaps and welts.

### 3.4 Sewing

3.4.1 All seams must be in accordance with CAN/CGSB-54.1-M.

3.4.2 Unless otherwise specified, seams must be a minimum of 3/8-inch (9.5 mm) wide.

3.4.3 The inherent properties of FR material render it prone to excessive fraying. Additional allowance must be incorporated into the patterns to accommodate fraying. Care must be taken to ensure that all seam allowances be adhered to without compromise to the shape and finished dimensions outlined in the scale of measurements.

3.4.4 Unless otherwise specified, all stitching must be either lock stitched Type 301 or chain stitch Type 401 conforming to CAN/CGSB-54.1-M having not less than 9 nor more than 11 stitches per inch (2.5 cm). The cut edges may be finished with any of the 500 series stitches and must be no less than 10 stitches per inch (2.5 cm).

3.4.5 Where double-lapped seams are specified, numerical designation 2.04.03 of CAN/CGSB-54.1-M must be used. They may be lock or chain stitched, with the needles set 1/4-inch (6.4 mm) apart.

3.4.6 The following seams **must** be stitched, serged and double top stitched: Armhole seams, underarm and side seams.

3.4.7 The stitches must present a regular even appearance without fabric pucker and must be free from skips that may result from faulty machine tension or other stitching malfunctions.

3.4.8 **Serging.** All exposed raw edges must be serged. Serging must be done using a three-thread serger, numerical designation 504 or 505, with a minimum gauge of 10 stitches per inch (2.5 cm). Simple overlock operations such as pocket edges may be two-thread serging, numerical designation 502 or 503, having not less than 10 stitches or more than 12 stitches per inch (2.5 cm). Width bite must be 3/8-inch (9.5 mm).

3.4.9 **Hook and loop fastener tape.** Hook and loop fastener tape must be stitched around all edges 1/8-inch (3.2 mm) gauge. Care must be taken to ensure stitching is formed into the hook and loop portion of the tape.

3.4.9.1 When tapes wider than 1-inch (2.5 cm) are used, they must be stitched around all edges and through the centre or have an 'X' enclosed in the box.

3.4.10 **Bartacks.** Unless otherwise specified, bartacks must be 1/2-inch (12.7 mm) long and must have not less than 20 cover stitches.

### 3.5 Construction

**3.5.1 Performance requirements.** The HW Shirt must consist of a full-length front opening with full-length sleeves with the following:

- a. Front closure with covered button and strap assemblies to ensure proper closure and permit easy donning/doffing of the shirt;
- b. Fasteners, adjusters, pocket flaps, and elbow pad to permit single-hand insertion and removal;
- c. Elbow pads removable/replaceable by the user without having to remove the shirt;
- d. Hook and loop tapes to be positioned to effect proper closure;
- e. Sleeve cuff fully extended, wide enough to pass over the bicep.
- f. No raised seams where operational equipment such as survival vests, life preserver yokes and/or hoist/rescue, parachute harnesses or other equipment can apply acute pressure on the shoulders, waist and back;
- g. No snap fasteners or buttons which could cause pressure points on the body; and
- h. Construction, design, fit, seamage and finishings to withstand regular operational exercises carried out by SAR Technicians.

### **3.5.2 Insignia Requirements (Figure 2)**

**3.5.2.1 Rank Insignia Strap.** The HW Shirt must have a rank strap with hook and loop patch as listed in Table II, to secure the standard RCAF Distinctive Environmental Uniform (DEU) slip-on insignia on the outer facing of the front closure, centred between the two chest pockets when the fronts are closed.

**3.5.2.2 Canada Flag.** The Canada Flag Patch (NSN: 8455-21-855-4637), supplied as GSM, must be stitched to the right shoulder, centred between the shoulder and pocket flap seams.

**3.5.2.3 Unit and Squadron badge fastener tapes.** With the flap closed, the loop fastener (Table II) used to secure the unit and squadron badges on each exterior sleeve pocket must be long enough to accommodate a 3-5/16-inch (8.41 cm) badge.

**3.5.2.4 Name Tape Badge fastener tape.** The loop fastener (Table II) used to secure the Name Tape Badge to the front chest, as listed in Table II, must be placed symmetrically to the right of the slide fastener as per Figure II.

### **3.5.3 Assembly requirements**

**3.5.3.1 Collar and Front Closure (Figure 2).** The HW Shirt must have a centre front closure with reinforced facings on both sides extending from the collar flap to the hem as follows:

- a. Collar with loop patch on the interior left flap and hook on the exterior right flap;
- b. Right side facing with five (5) button and strap assemblies evenly spaced; and
- c. Left side with inner buttonhole flap. Outside facing to conceal the buttons except for the top button which may pass through both layers to reveal the button.

### **3.5.3.2 Pockets (Figure 3)**

**3.5.3.2.1 Chest Pockets.** The HW Shirt must have an integrated two pocket system consisting of a patch pocket and external bellows pocket with flap layered and stitched on each front as follows:

- a. Slanted inwards at the top at approximately 30 degrees from vertical and centred on each front;
- b. Outer bellows pocket accessible from the top, with flap secured using hook and loop fasteners, as listed in Table II; and
- c. Inner patch pocket accessible from the front side of the pocket via a vertical slide fastener, as listed in Table I, closing to the bottom.

**3.5.3.2.2 Sleeve Pocket (Figure 3).** The HW Shirt must have an integrated two pocket system consisting of an outer semi bellows pocket with flap and an inner pocket with slide fastener layered and stitched on each sleeve as follows:

- a. Outer bellows pocket accessible from the top, with loop patch on the pocket front and hook on the underside of the flap, as listed in Table II;
- b. Inner pocket accessible from the front side via a vertical slide fastener, as listed in Table I, closing to the bottom; and
- c. Care and marking label stitched into the seam on the underside of the left sleeve pocket flap.

**3.5.3.3 Cuffs (Figure 2).** The HW Shirt cuff must have a cut on double-layer construction, with a cuff adjuster with hook and loop fastener tape construction as follows:

- a. Tab with hook tape, as listed in Table II, stitched to the sleeve closing outward to the back; and
- b. Loop tape as listed in Table II, stitched to the cuff and extending half the circumference of the sleeve opening.

**3.5.3.4 Elbow Pad Casing (Figure 4).** The HW Shirt must have an external casing suitable for holding a removable elbow pad as follows:

- a. Opening to accommodate the in-service Elbow Pads NSN: 8315-01-630-5217; and
- b. Secured at the bottom using hook and loop fasteners, as listed in Table II.

**3.6 Measurements.** Measurements must be as shown on the applicable Figures and Scale of Measurements (see Appendix I).

**3.7 Marking label.** A marking label in accordance with D-80-001-055/SF-001 must be stitched by the contractor into the seam on the underside of the left sleeve pocket flap. An example of the care and marking label is provided in Figure 4. The marking must be printed in black and must give the following information printed in characters not less than 1/8-inch (3.2 mm) nor more than 1/4-inch (6.4 mm) in height, with the exception of the size identification which must be twice the height:

- a. Abbreviated Nomenclature (SHIRT, HW, ASARU / CHEMISE, TE, UARES)
- b. NATO Stock Number (see Appendix I);
- c. Size by height and chest (see Scale of Measurements – Appendix I);



- d. NATO size designation (see Scale of Measurements – Appendix I);
- e. Contract Number;
- f. Contractor Name. No initials, logos or trademarks must be used;
- g. Date of Manufacture;
- h. Fibre content;
- i. Care symbols (see para 3.8) in black ink;
- j. The following care instructions:

DO NOT USE LIQUID FABRIC SOFTENER. REMOVE ELBOW PADS BEFORE  
LAUNDERING / NE PAS UTILISER D'ASSOUPPLISSANT LIQUIDE. ENLEVER LES  
PROTEGE COUDES AVANT LE LAVAGE.

- k. User ID.

**3.8 Care labelling.** Care symbols must be included on the marking label. The following care symbols, as defined in CAN/CGSB-86.1-2003 must be used:

- a. Table 1 – Washing – symbol 6;
- b. Table 2 – Bleaching – symbol 3;
- c. Table 3 – Drying – symbol 4;
- d. Table 4 – Ironing/Pressing – symbol 2;
- e. Table 5 – Professional Textile Care – symbol 3.

**3.9 Finishing.** The Shirt must be cleaned, pressed, folded and packaged in accordance with CFTPO-General.

### 3.10 Packaging

**3.10.1 Packaging and packing.** Unless otherwise specified, the packaging, packing and delivery must be in accordance with the terms of the contract.

**3.10.2** The information conveyed on the label must be the NATO Stock Number (NSN) and the Nomenclature in bilingual format (SHIRT, HW, ASARU / CHEMISE, TE, UARES). The NATO Stock Number must be applied in Standard Bar Code Symbolology, UCC/EAN-128 with AI 7001, including HRI, in accordance with CFPTO-GENERAL.

**TABLE III: NSNs FOR SHIRT, HEAVY WEIGHT,  
ADVANCED SEARCH AND RESCUE UNIFORM (ASARU)**

NSN	SIZE
8415-20-010-0451	A/A
8415-20-010-0452	6734
8415-20-010-0453	6736
8415-20-010-0454	6738
8415-20-010-0455	6740
8415-20-010-0456	6742
8415-20-010-0457	6744
8415-20-010-0458	7036
8415-20-010-0459	7038
8415-20-010-0460	7040
8415-20-010-0461	7042

<b>NSN</b>	<b>SIZE</b>
8415-20-010-0462	7044
8415-20-010-0463	7046
8415-20-010-0464	7336
8415-20-010-0465	7338
8415-20-010-0466	7340
8415-20-010-0467	7342
8415-20-010-0468	7344
8415-20-010-0469	7346
8415-20-010-0470	7638
8415-20-010-0471	7640
8415-20-010-0472	7642
8415-20-010-0473	7644
8415-20-010-0474	7646
8415-20-010-0475	SPECIAL

FIGURE 1: FRONT AND BACK VIEW

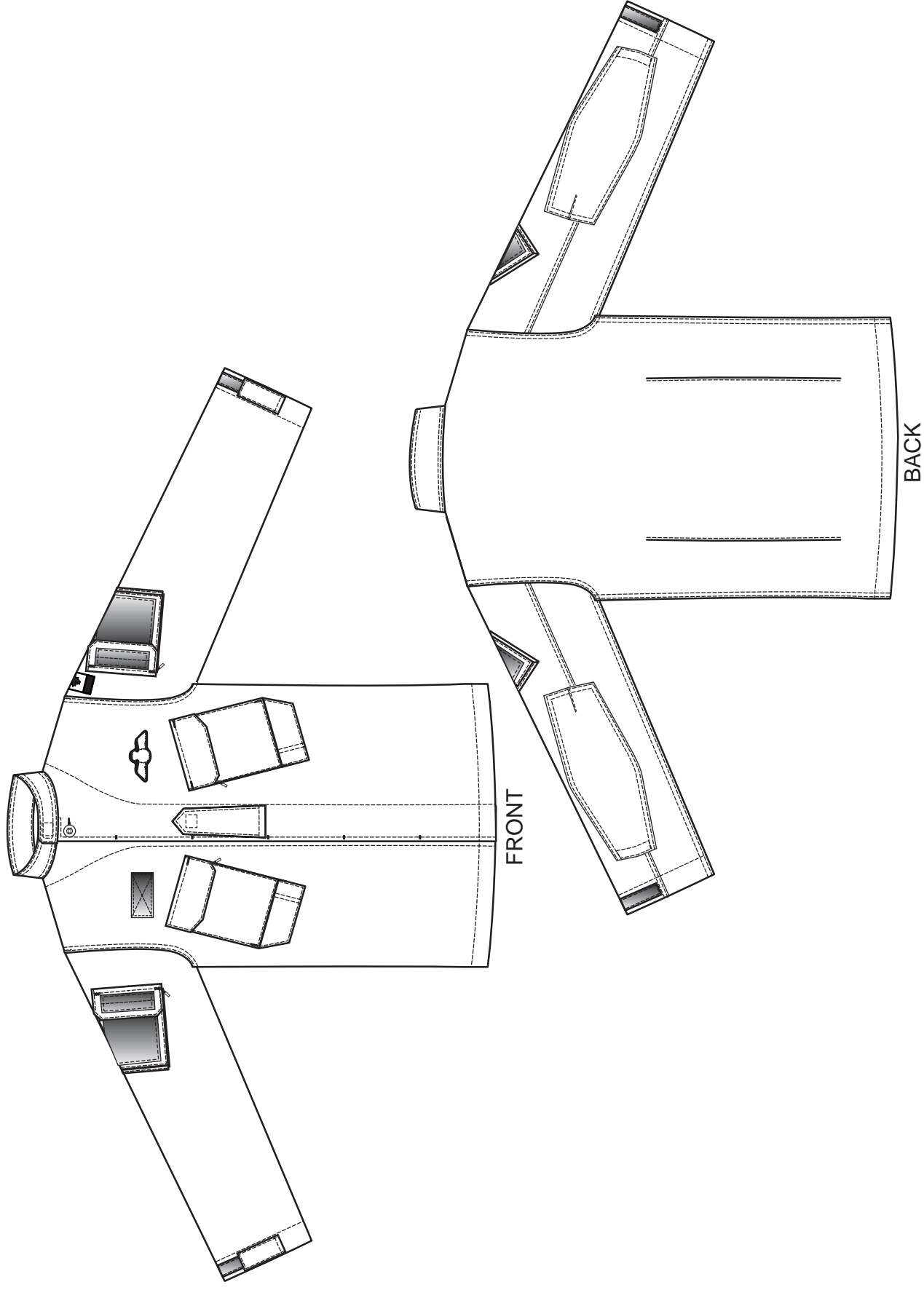


FIGURE 2: DETAILS

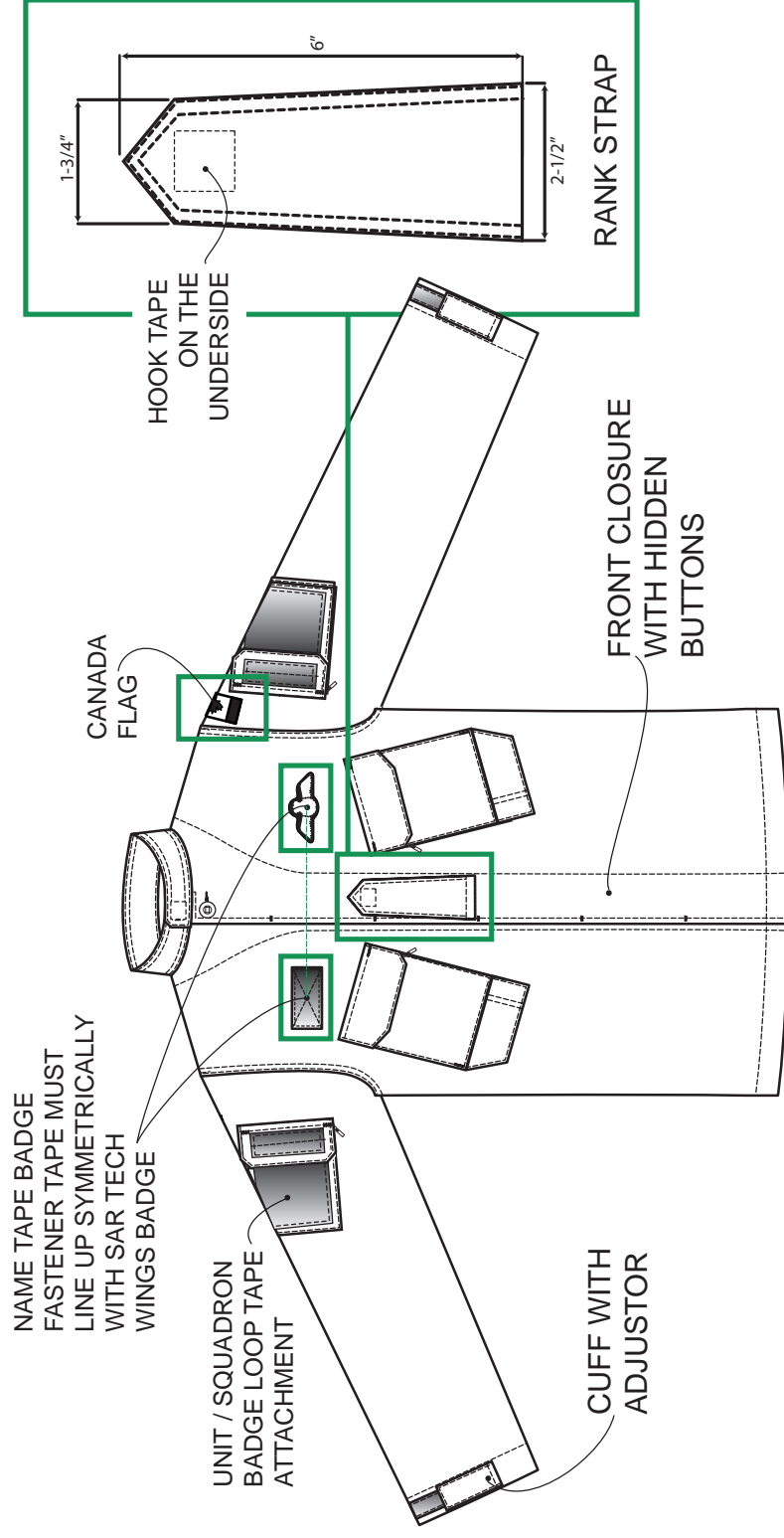


FIGURE 3: DIMENSIONS OF POCKETS

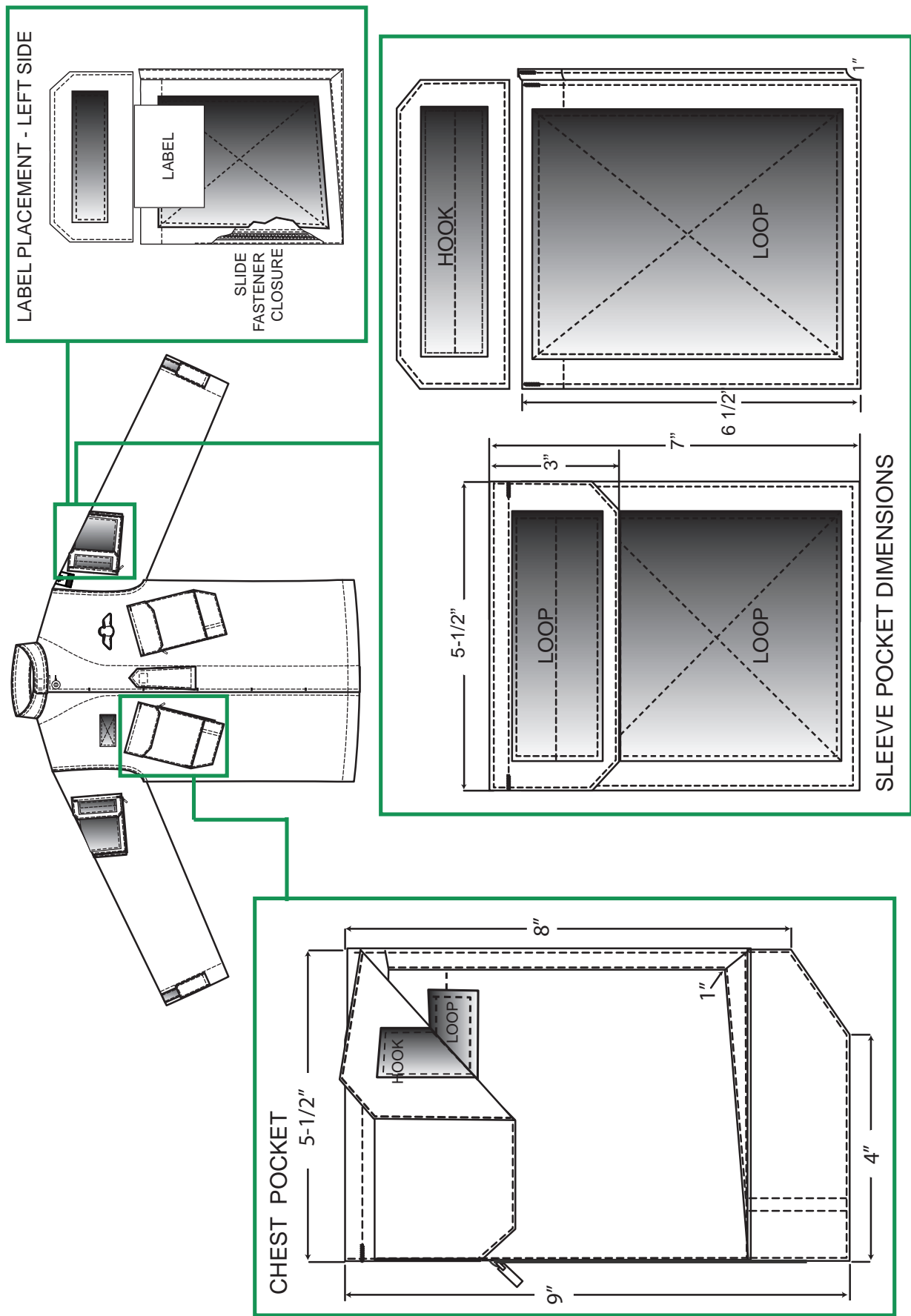


FIGURE 4: BACK DETAILS

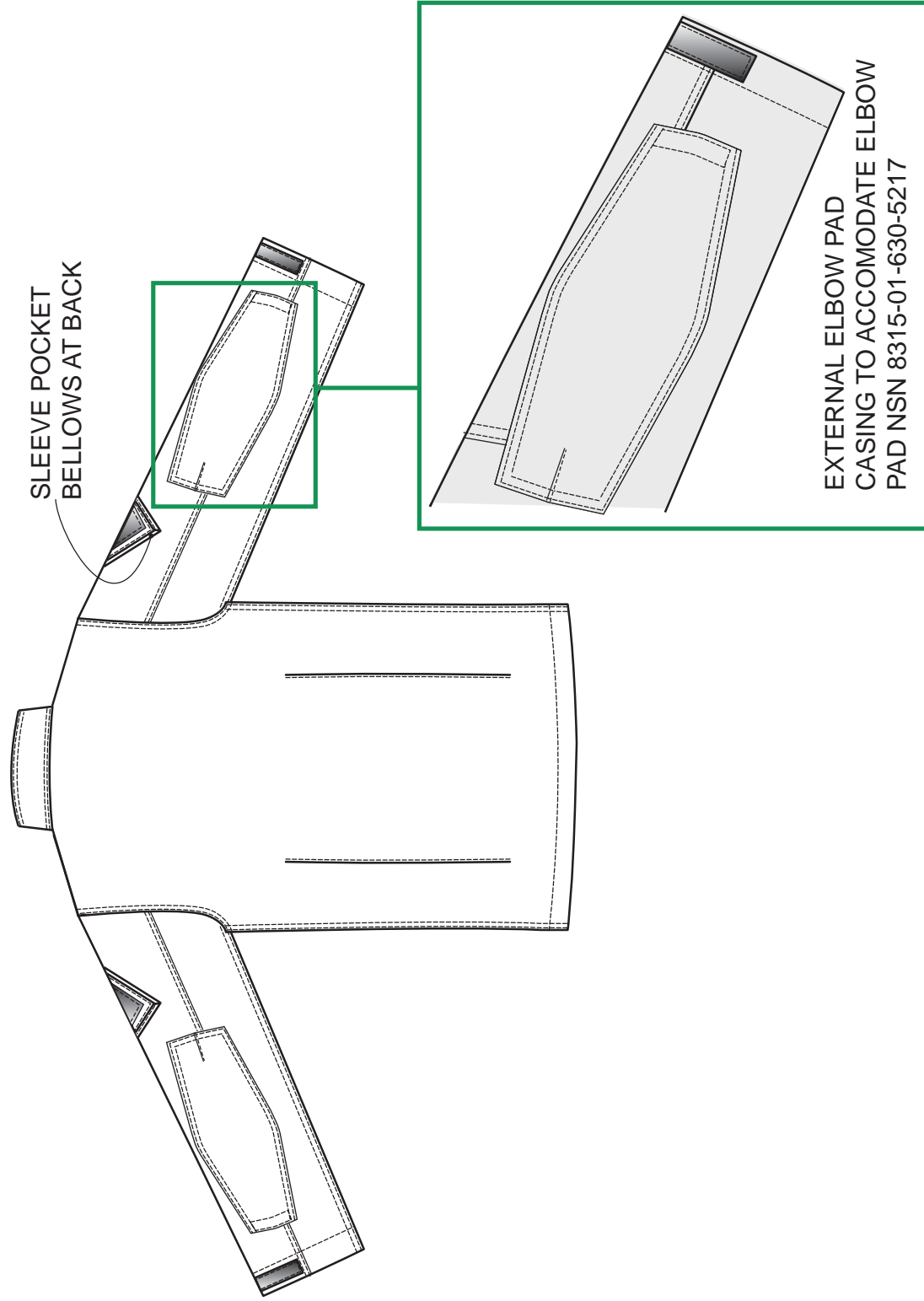








FIGURE 5: CARE AND MARKING LABEL

ITEM & CONTRACT INFO	ARTICLE ET INFO SUR LE CONTRAT
CARE	ENTRETIEN
USER ID	ID DE L'UTILISATEUR

SHIRT, HW, ASARU  
CHEMISE TE, UARES  
NSN/NNO: 8415-20-XXX-XXXX

**SIZE/TAILLE : 7040**

NATO SIZE / TAILLE OTAN : XXXX-XXX  
CONTRACT NO. / NO. DE CONTRAT: WXXXX-XXXXX  
CONTRACTOR NAME/NOM D'ENTREPRENEUR: Jones & Company  
DATE OF / DE MANUFACTURE: MM/YY  
FIBRE CONTENT / TENEUR DE FIBRES: XXXXXXXXXXXXX



DO NOT USE LIQUID FABRIC SOFTENER. REMOVE ELBOW PADS  
BEFORE LAUNDERING. / NE PAS UTILISER D'ASSOUPLISSANT  
LIQUIDE. ENLEVER LES PROTEGE COULES AVANT LE LAVAGE.

I.D. \_\_\_\_\_

MEASUREMENTS OF GARMENT													
GIRTH MEASUREMENTS SLIDE FASTENER CLOSED				FULL LENGTH FROM NECK SEAM		SLEEVE							
HEIGHT and CHEST	HEIGHT without shoes	NATO SIZE	CHEST	CHEST	WAIST	BOTTOM	CENTRE FRONT	BACK	BACK WIDTH (across yoke seam)	LENGTH AT UNDER ARM	LENGTH FROM CB	CUFF CIRC.	NECK
6734	5'4" to 5' 6 1/2"	6070-8590	33-34	37	32	35	28 1/2	32	14 3/4	19	32 1/2	14 1/4	15 1/2
6736		6070-9095	35-36	40	35	38			16		33	14 1/2	16 1/2
6738		6070-9500	37-38	43	38	41			17 1/4		33 1/2	14 3/4	17 1/2
6740		6070-0005	39-40	46	41	44			18 1/2		34	15	18 1/2
6742		6070-0510	41-42	50	43	48			19 3/4		34 1/2	15 1/4	19 1/2
6744		6070-1015	43-44	54	49	52			21		35	15 1/2	20 1/2
7036	5'7" to 5'9 1/2"	7080-9095	35-36	40	35	38	30 1/2	34	16	20	33	14 1/2	16 1/2
7038		7080-9500	37-38	43	38	41			17 1/4		33 1/2	14 3/4	17 1/2
7040		7080-0005	39-40	46	41	44			18 1/2		34	15	18 1/2
7042		7080-0510	41-42	50	43	48			19 3/4		34 1/2	15 1/4	19 1/2
7044		7080-1015	43-44	54	45	52			21		35	15 1/2	20 1/2
7046		7080-1520	45-46	58	47	56			22 1/4		35 1/2	15 3/4	21 1/2
7336	5'10" to 6' 1/2"	8090-9095	35-36	40	35	38	32 1/2	36	16	21	33	14 1/2	16 1/2
7338		8090-9500	37-38	43	38	41			17 1/4		33 1/2	14 3/4	17 1/2
7340		8090-0005	39-40	46	41	44			18 1/2		34	15	18 1/2
7342		8090-0510	41-42	50	43	48			19 3/4		34 1/2	15 1/4	19 1/2
7344		8090-1015	43-44	54	45	52			21		35	15 1/2	20 1/2
7346		8090-1520	45-46	58	47	56			22 1/4		35 1/2	15 3/4	21 1/2
7638	6'1" to 6'3 1/2"	9000-9500	37-38	43	38	41	34 1/2	38	17 1/4	22	33 1/2	14 3/4	17 1/2
7640		9000-0005	39-40	46	41	44			18 1/2		34	15	18 1/2
7642		9000-0510	41-42	50	43	48			19 3/4		34 1/2	15 1/4	19 1/2
7644		9000-1015	43-44	54	45	52			21		35	15 1/2	20 1/2
7646		9000-1520	45-46	58	47	56			22 1/4		35 1/2	15 3/4	21 1/2
TOLERANCE PLUS OR MINUS			1	1	1	1	1	1	1/4	1/2	1/2	1/4	1/4



NOTICE



This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

**DSSPM 2-87-0479**

**MANUFACTURING DATA  
FOR  
PANT  
ADVANCED SEARCH AND RESCUE UNIFORM (ASARU)  
NSN 8415-20-010-0479 AA**

**1. SCOPE**

**1.1 Scope.** This Manufacturing Data covers the materials, design, construction and inspection requirements for the Pant, Advanced Search and Rescue Uniform (ASARU).

**1.2 Intended Use.** The Pant will be worn by Search and Rescue Technicians (SAR Techs) with the Light Weight and Heavy Weight Shirt ASARU, Survival Vest, Life Preserver Yoke, Hoist/Rescue Harness, Parachute Harness and Cold Weather Outer Wear.

**2. RELATED DOCUMENTS**

**2.1 Government documents.** The following documents form part of this Manufacturing Data to the extent specified herein. Unless otherwise specified, the issue or amendment of documents effective for a particular contract must be that in effect on the date of the applicable invitation to tender or the contract.

**SPECIFICATIONS AND STANDARDS**

D-80-001-055/SF-001	Specification for Label, Clothing and Equipment
D-83-001-005/SF-001	Specification for Fasteners, Slide, Interlocking
CFTPO-General	Canadian Forces Transportation Packaging Order

**2.2 Other publications.** The following documents form part of this Manufacturing Data to the extent specified herein. Effective date must be that in effect on the date of manufacture. Source is as shown:

**Canadian General Standards Board (CGSB) Sales Unit**  
11 Laurier Street  
Place du Portage, Phase III  
Gatineau, Quebec K1A 1G6  
Tel: (819) 956-0425  
Alternate Tel: (800) 665-2472  
Email: ncr.cgsb-ongc@pwgsc.gc.ca

CAN/CGSB-4.2-M	Textile Test Methods
CAN/CGSB-54.1-M	Stitches and Seams, Parts I and II

CAN/CGSB-86.1-2003	Care Labelling of Textiles
CAN/CGSB-155.1-2001	Fire Fighters Protective Clothing for Protection against Heat and Flame

**General Services Administration (FED-STD)**  
**Federal Supply Service**  
**FSS Product Acquisition Center**  
**Supply Standards Division (FLAS)**  
**Arlington, Virginia USA 22202**  
**Telephone: 703-605-2567**  
**Download Documents: <https://assist.daps.dla.mil>**

A-A-55126A	Commercial Item Description - Fastener Tapes, Hook and Loop, Synthetic
A-A-55217	Thread, Aramid, Spun Staple
FED STD 595C	Federal Standard – Colours Used in Government Procurement

**2.3 DSSPM documents.** The following documents form part of the Technical Data Package for Pant, Search and Rescue:

DSSPM 2-2-80-239	Specification for Cloth, Twill, Aramid / FR Viscose, 185 g/m <sup>2</sup> (Annex E, less Paragraphs 2.4, 4, 5 and 6)
------------------	--

**2.4 Figures.** The following Figures form part of this Manufacturing Data. Figures are not to scale.

Figure 1	Front and Back View
Figure 2	Component Details – Front
Figure 3	Component Details - Back
Figure 4	Care and Marking Label

**2.5 Sealed patterns.** Sealed pattern will be supplied to the successful tenderer by the Contracting Authority. The sealed pattern will constitute the standard in regards to any properties not specified in this Manufacturing Data.

DSSPM 107-16P*	Pant, SAR (Sealed for provisional construction and design concept)
DCGEM 263-78	Cloth, SAR International Orange (Colour guidance only)
PAD-KC3-01-000	Kneepad, Airflex, Combat

**\*Note:** Sealed Pattern DSSPM 107-16P has the following deviations:

- a. Garment sample for construction only. Textile samples provided, with drawings to indicate material and colour;
- b. There are no back hip pockets, refer to Figure 1 and 3;
- c. There are no loops at the bottom of each front belt loop, refer to Figure 2.

**2.6 Technical Design patterns.** The technical design patterns called for at Annex B, para 3.2.1.4 must be used.

## 2.7 Order of precedence for the Manufacturing Data.

2.7.1 In the event of conflict between the documents referenced herein and the contents of this Manufacturing Data, the contents of this document shall take precedence.

2.7.2 In the event of inconsistency within this Manufacturing Data, the Contracting Authority must be contacted for clarification.

## 3. REQUIREMENTS

3.1 **Design.** The design must be in accordance with Sealed Pattern DSSPM 107-16P and must incorporate the following features:

- a. Full length pant;
- b. Padded waist band with tab closure;
- c. Low profile side waist adjustors;
- d. Five belt loops;
- e. Two-way slide fastener fly front opening;
- f. Stretch material back yoke and knees;
- g. Kneepad casing with vertical adjustment system;
- h. Back kneepad radial adjustor;
- i. Front hip quarter-cut pockets;
- j. Bellowed cargo pockets with flap on side seams, thigh level;
- k. Bellowed cargo pockets with flap thigh front;
- l. Bellowed cargo pockets with flap calf side;
- m. Reinforced seat; and
- n. Bottom leg with hook and loop adjustor.

3.1.1 Unless otherwise specified, this garment must be governed by the Scale of Measurements (see Appendix I).

## 3.2 Materials

3.2.1 **Woven shell material.** The material used must be cloth, twill weave, 185 g/m<sup>2</sup> in accordance with DSSPM 2-2-80-239 (Annex F). The colour used for the Pant must be SAR International Orange in accordance with DCGEM 263-78.

3.2.2 **Stretch material for the back yoke and knees.** The knit stretch material must be cloth, knit, 48% cotton, 48% Kanecaron Modacrylin Fibre, 4% Elastane from Schoeller, style number 15257 or equivalent. The colour must be SAR International Orange in accordance with DSSPM 263-78 or Khaki in accordance with FED STD 595 #20180.

3.2.3 **Kneepad.** The removable kneepad must fit securely in the knee pad casing. Airflex Combat Knee Pads style: PAD-KC3 from Crye Precision, NSN: 8465-01-613-2824, colour Khaki with flexible cap, has been known to meet this requirement.

3.2.4 **Slide fasteners.** The slide fasteners used for the front fly of the pant must be a flame retardant treated, monofilament (coil) slide fastener, Class 3, Type 7 with automatic locking sliders and a long pull in accordance with D-83-001-005/SF. Lengths for the slide fasteners are specified in Appendix I of this annex – Scale of Measurements. The flame resistance must pass the FAR 25.853 Flammability Test and FMVSS 302 for Requirements of Burn Rate. The colour of the slide fasteners must be a good visual match to the woven shell material (see para 3.4.1). When tested in accordance with the applicable test methods, the slide fasteners must meet the requirements for colourfastness and strength. **Note:** YKK Canada slide fastener CFC 456 DALH1 E 9/16 "FR-AIR" (3939 Thimens Blvd, Ville St-Laurent, QC H4R

1X3 Tel.: (514) 332-3356) has been known to meet this technical requirement.

**3.2.5 Hook and loop fastener tape.** The hook and loop fastener tape must be Type II, Class 1 in accordance with A-A 55126A. The colour of the tape must match the shell material. The detailed requirements are as follows:

**Table I: Hook and Loop Fastener Details**

APPLICATION		FASTENER TAPE - HOOK				FASTENER TAPE - LOOP			
		width		length		width		length	
		in	cm	in	cm	in	cm	in	cm
1	Front tab closure	1-1/2	3.8	3	7.6	1-1/2	3.8	3	7.6
2	Low profile waist adjustment	As per sealed sample				1-1/2	3.8	3	7.6
3	Thigh front pocket/flap	1	2.5	4-1/4	11.0	1	2.5	1-3/4	4.4
4	Thigh side pocket/flap	2	5.1	2	5.1	1-1/2	3.8	2	5.1
5	Calf side pocket/flap	1	2.5	4-1/4	11.0	1	2.5	1-3/4	4.4
6	Bottom leg adjustor	1	2.5	1-3/4	4.4	1	2.5	8	20.3
7	Knee pad	Included on knee pad				As per sealed sample			
8	Back knee pad radial adjustor	2 x 1-1/2	2 x 3.8	2 x 1-1/2	2 x 3.8	1-1/2	3.8	7	17.8

**3.2.6 Drop cord for vertical kneepad adjustment.** The drop cord for the kneepad adjustment must be a commercially available elastic cord in accordance with the Table II.

**Table II - Technical Requirements for the Elastic Cord**

Description	Round elastic looping, polyester covered rubber	
Diameter	3.5 mm	Tolerance: ± 0.2 mm
Cover yarn	600D acetate or polyester	
Sheath	16 carriers	
Core	34's sq. cut rubber, 16 ends	
Picks per centimetre	28.37	
Stretch (%)	190%	Tolerance: ± 10%

**3.2.7 Cord lock.** The cord lock used for the kneepad drop cord must be a durable, commercially available, low profile design of acetal material.

**3.2.8 Cord end.** The cord lock and end used for the kneepad drop cord must be a durable, commercially available low profile design.

**3.2.9 Thread.** The thread for seaming, stitching, bartacks, and serging must be Thread, Aramid, Spun Staple, Tex 27, in accordance with Type II of A-A-55217. The colour must match the components being sewn.

3.2.10 **Labels.** A marking label in accordance with D-80-001-055/SF-001 and a care label in accordance with CAN/CGSB-86.1-2003 must be sewn to each pant. The colour for the labels used for Pant must be Khaki in accordance with FED STD 595 #20180.

### 3.3 Cutting

3.3.1 The shell parts of each garment must be cut in the direction of the warp.

3.3.2 The shell parts of each garment must be from the same piece of shell material, with the exception of pocket facings, flaps and welts.

### 3.4 Sewing

3.4.1 All seams must be in accordance with CAN/CGSB-54.1-M.

3.4.2 Unless otherwise specified, seams must be a minimum of 3/8-inch (9.5 mm) wide.

3.4.3 The inherent properties of FR material render it prone to excessive fraying. Additional allowance must be incorporated into the patterns to accommodate fraying. Care must be taken to ensure that all seam allowances be adhered to without compromise to the shape and finished dimensions outlined in the scale of measurements.

3.4.4 Unless otherwise specified, all stitching must be either lock stitched Type 301 or chain stitch Type 401 conforming to CAN/CGSB-54.1-M having not less than 9 nor more than 11 stitches per inch (2.5 cm). The cut edges may be finished with any of the 500 series stitches and must be no less than 10 stitches per inch (2.5 cm).

3.4.5 Where double-lapped seams are specified, numerical designation 2.04.03 of CAN/CGSB-54.1-M must be used. They may be lock or chain stitched, with the needles set 1/4-inch (6.4 mm) apart.

3.4.6 The following seams **must** be stitched, serged and double top stitched: Front crotch and front crotch gusset.

3.4.7 The stitches must present a regular even appearance without fabric pucker and must be free from skips that may result from faulty machine tension or other stitching malfunctions.

3.4.8 **Serging.** All exposed raw edges must be serged. Serging must be done using a three-thread serger, numerical designation 504 or 505, with a minimum gauge of 10 stitches per inch (2.5 cm). Simple overlock operations such as pocket edges may be two-thread serging, numerical designation 502 or 503, having not less than 10 stitches or more than 12 stitches per inch (2.5 cm). Width bite must be 3/8-inch (9.5 mm).

3.4.9 **Hook and loop fastener tape.** Hook and loop fastener tape must be stitched around all edges 1/8-inch (3.2 mm) gauge. Care must be taken to ensure stitching is formed into the hook and loop portion of the tape.

3.4.9.1 When tapes wider than 1-inch (2.5 cm) are used, they must be stitched around all edges and through the centre or have an 'X' enclosed in the box.

3.4.10 **Bartacks.** Unless otherwise specified, bartacks must be 1/2-inch (12.7 mm) long and must have not less than 20 cover stitches.

### 3.5 Construction

**3.5.1 Performance Requirements.** The pant must consist of a full length cargo pant design as follows:

- a. Front fly with low-profile slide fastener with internal placket and hook and loop closure at the waist to prevent irritation;
- b. Gusseted crotch area for ease of movement;
- c. Stretch material inserts at the back yoke and knees for ease of movement;
- d. Front thigh cargo pocket provides access to vertical kneepad adjuster;
- e. Hip cargo pocket suitable for carrying a water bottle, weapons magazine or other equipment in an upright position;
- f. Kneepad secured so that it stays in place during operational exercises;
- g. Single-hand operation of fasteners and pocket flaps and kneepad insertion and removal;
- h. Hook and loop tape to be positioned to effect proper closure;
- i. No snaps or buttons which could cause pressure points on the body; and
- j. Construction, design, fit, seamage and finishings to withstand regular operational exercises performed by SAR Technicians.

### 3.5.2 Assembly Requirements

**3.5.2.1 Waistband.** The waistband must have an integral waistband of quilted double layer construction as follows;

- a. Padded with a flexible foam material;
- b. Centre front fly with a two-way slide fastener, size as specified in Appendix I – Scale of Measurements;
- c. Secured at the top with hook and loop fastener as listed in Table I, with loop tape on the left side and hook on the right;
- d. Low-profile waist adjustment with hook and loop fasteners, as listed in Table I, with 2-inches (5 cm) of waist expansion over the rated pant size; and
- e. Five (5) belt loops with a finished width of 1-inch (2.5 cm) and a functional opening to accommodate a 2-inch (5 cm) wide belt, two (2) on the front and three (3) on the back waistband.

### 3.5.2.2 Pockets (Figures 2 and 3).

**3.5.2.2.1 Front hip quarter cut pockets.** A quarter cut pocket on each side hip, with pocket bag measuring 8-inches (20.4 cm) wide by 10-1/2 inches (26.7 cm) deep.

**3.5.2.2.2 Front thigh cargo pockets.** A bellowed cargo pocket on each front thigh centred between the waist and the knee as follows:

- a. Accessible from the top with flap secured using hook and loop fastener as listed in Table I; and
- b. Internal, vertical cord kneepad height adjustor with fasteners.

3.5.2.2.3 **Side thigh cargo pocket.** A cargo pocket, bellowed at the back, on each side thigh centred between the waist and the knee that is as follows:

- a. Accessible from the top with flap secured using hook and loop fastener as listed in Table I;
- b. Have a casing with elastic suppression at the top opening of the pocket; and
- c. Have a Care and Marking label as illustrated in Figure 4, on the inside flap of the left pocket.

3.5.2.2.4 **Side calf cargo pocket.** A bellowed pocket on each side calf centred between the knee and the bottom, accessible from the top with flap secured using hook and loop fastener as listed in Table I.

3.5.2.3 **Knee (Figures 2 and 3).** The Pant knee must have an external kneepad casing and securing system.

3.5.2.3.1 **Knee pad casing.** An external knee pad casing suitable for holding a removable knee pad as follows:

- a. Stitched to the stretch material to form a closed perimeter pouch with a central opening to accommodate the in-service knee pads NSN: 8465-01-613-2824;
- b. Drainage hole at the bottom of the pouch;
- c. Hook and loop fasteners as listed in Table I; and
- d. Cover flap to enclose the opening when the knee pad is not in place.

3.5.2.3.2 **Knee pad securing system.** A kneepad securing system to hold the kneepad into position as follows:

- a. Vertical cord height adjuster using an internal drop-cord, flexible material and fasteners; and
- b. External radial adjuster behind each knee of hook and loop construction, as listed in Table I, tabs closing to the back.

3.5.2.3.3 **Leg bottom adjustor.** The leg bottom must be a 2-inche (5 cm) double-layer construction with adjuster tab closing outward to the back and loop tape as listed in Table I, extending half the circumference of the bottom opening.

3.6 **Measurements.** Measurements must be as shown on the applicable Figures and Scale of Measurements (see Appendix I).

3.7 **Marking label.** A marking label in accordance with D-80-001-055/SF-001 must be stitched by the contractor into the seam on the underside of the left side thigh pocket flap. An example of the care and marking label is provided in Figure 4. The marking must be printed in black and must give the following information printed in characters not less than 1/8-inch (3.2 mm) nor more than 1/4-inch (6.4 mm) in height, with the exception of the size identification which must be twice the height:

- a. Abbreviated Nomenclature (PANT, ASARU / PANT, UARES);
- b. NATO Stock Number (see Table III);
- c. Size by Waist and Height (see Scale of Measurements – Appendix I);
- d. NATO size designation (see Scale of Measurements – Appendix I);
- e. Contract Number;
- f. Contractor Name. No initials, logos or trademarks must be used;
- g. Date of Manufacture;
- h. Fibre content;
- i. Care symbols (see para 3.8) in black ink;
- j. The following care instructions:

DO NOT USE LIQUID FABRIC SOFTENER. REMOVE KNEE PADS BEFORE  
WASHING / NE PAS UTILISER D'ASSOUPPLISSANT LIQUIDE. ENLEVER LES  
PROTEGE GENOUX AVANT LE LAVAGE

- k. User ID.

3.8 **Care labelling.** Care symbols must be included on the marking label. The following care symbols, as defined in CAN/CGSB-86.1-2003 must be used:

- a. Table 1 – Washing – symbol 6;
- b. Table 2 – Bleaching – symbol 3;
- c. Table 3 – Drying – symbol 4;
- d. Table 4 – Ironing/Pressing – symbol 2; and
- e. Table 5 – Professional Textile Care – symbol 3.

3.9 **Finishing.** The Pant must be cleaned, pressed, folded and packaged in accordance with CFTPO-General.

### 3.10 **Packaging**

3.10.1 **Packaging and packing.** Unless otherwise specified, the packaging, packing and delivery must be in accordance with the terms of the contract.

3.10.2 The information conveyed on the label must be the NATO Stock Number (NSN) and the Nomenclature in bilingual format (PANT, ASARU / PANT, UARES). The NATO Stock Number must be applied in Standard Bar Code Symbolology, UCC/EAN-128 with AI 7001, including HRI, in accordance with CFTPO-GENERAL.



**TABLE III: NSNs FOR PANT,  
ADVANCED SEARCH AND RESCUE UNIFORM (ASARU)**

<b>NSN</b>	<b>SIZE</b>
8415-20-010-0479	A/A
8415-20-010-0480	6728
8415-20-010-0481	6730
8415-20-010-0482	6732
8415-20-010-0483	6734
8415-20-010-0484	6736
8415-20-010-0485	6738
8415-20-010-0486	7030
8415-20-010-0487	7032
8415-20-010-0488	7034
8415-20-010-0489	7036
8415-20-010-0490	7038
8415-20-010-0491	7040
8415-20-010-0492	7330
8415-20-010-0493	7332
8415-20-010-0494	7334
8415-20-010-0495	7336
8415-20-010-0496	7338
8415-20-010-0497	7340
8415-20-010-0498	7632
8415-20-010-0499	7634
8415-20-010-0500	7636
8415-20-010-0501	7638
8415-20-010-0502	7640
8415-20-010-0503	SPECIAL

FIGURE 1: FRONT AND BACK VIEW

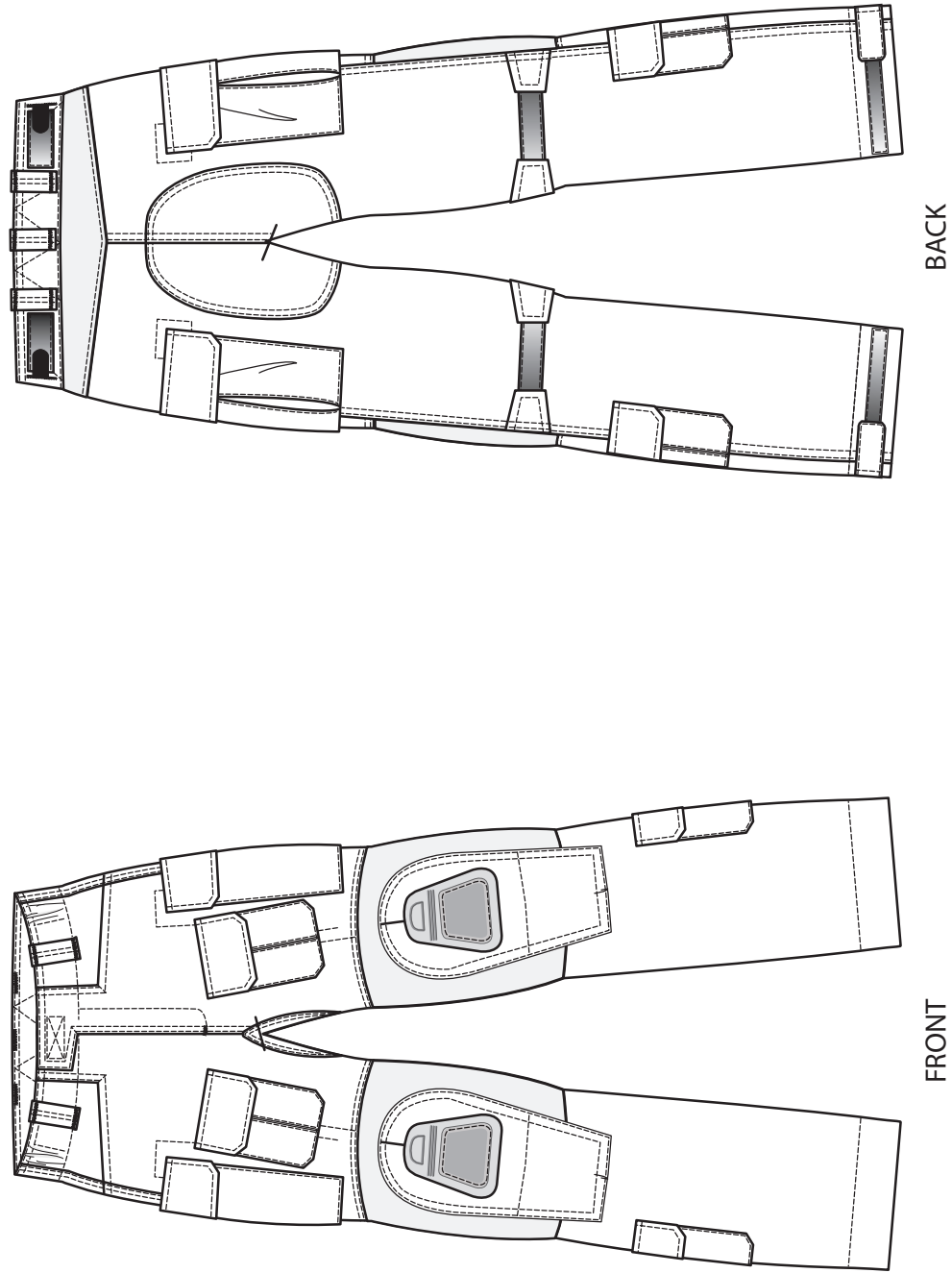


FIGURE 2: COMPONENT DETAILS - FRONT

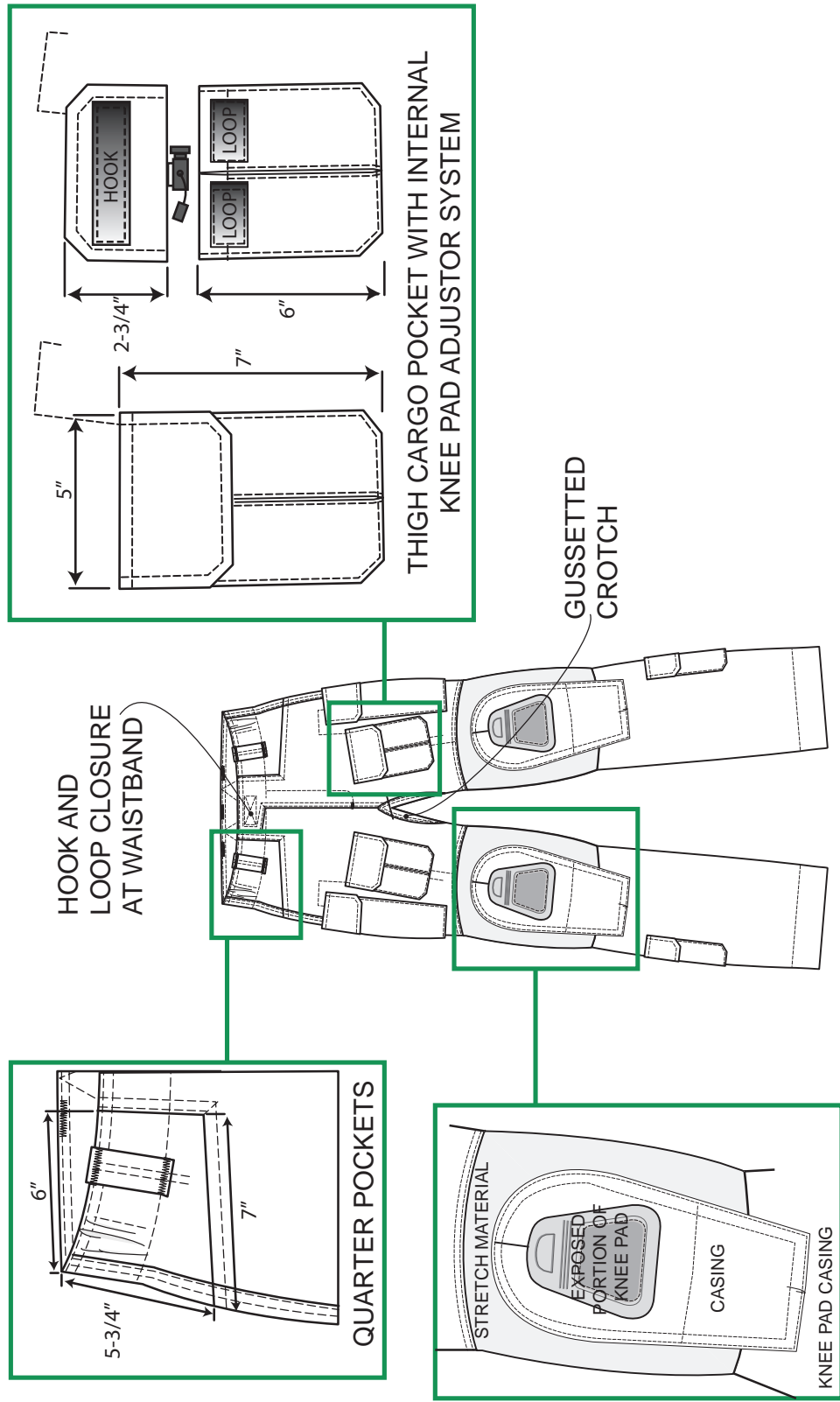


FIGURE 3: COMPONENT DETAILS - BACK

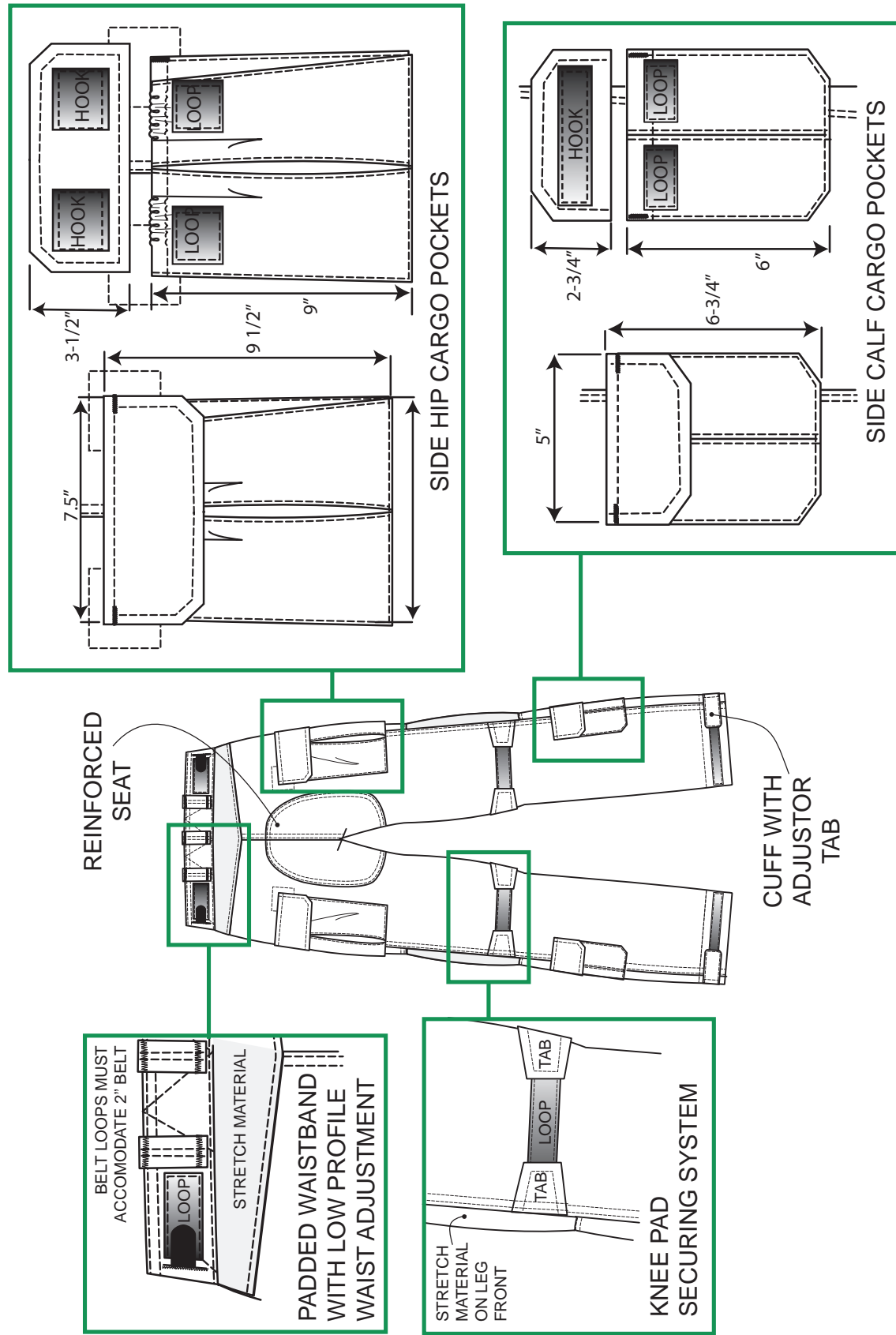








FIGURE 4: CARE AND MARKING LABEL

ITEM & CONTRACT INFO	ARTICLE ET INFO SUR LE CONTRAT
CARE	ENTRETIEN
USER ID	ID DE L'UTILISA- TEUR

PANT, ASARU  
PANT, UARES  
NSN/NNO: 8415-20-XXX-XXXX

**SIZE/TAILLE : 7034**

NATO SIZE / TAILLE OTAN : XXXX-XXX  
CONTRACT NO. / NO. DE CONTRAT: WXXX-XXXXX  
CONTRACTOR NAME/NOM D'ENTREPRENEUR: Jones & Company  
DATE OF / DE MANUFACTURE: MM/YY  
FIBRE CONTENT / TENEUR DE FIBRES: XXXXXXXXXXXXX



DO NOT USE LIQUID FABRIC SOFTENER. REMOVE ELBOW PADS  
BEFORE LAUNDERING / NE PAS UTILISER D'ASSOUPPLISSANT  
LIQUIDE. ENLEVER LES PROTEGE COUDES AVANT LE LAVAGE.

I.D. \_\_\_\_\_



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**AVIS**

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**SPECIFICATION**

**FOR**

**CLOTH, TWILL, ARAMID/FR VISCOSE,**

**185 g/m<sup>2</sup>**

**SPÉCIFICATION**

**POUR LE**

**TISSU À ARMURE SERGÉ**

**ARAMIDE/RAYONNE RÉSISTANT**

**AUX FLAMMES, 185 g/m<sup>2</sup>**

**1. SCOPE**

**1.1 Scope.** This specification in its entirety covers the requirements for Cloth, Twill, Aramid/FR Viscose, 185 g/m<sup>2</sup>.

**1.2 Description.** The cloth described by this specification is a woven fabric composed primarily of aramid and permanently flame resistant viscose fibres. The fabric may be solid coloured or it may be printed with one of the CADPAT™ patterns. The fabric is intended for use in flame resistant clothing worn by the Canadian Armed Forces.

**2. APPLICABLE DOCUMENTS**

**2.1 Government documents.** The following document forms part of this specification to the extent specified herein. The effective date is that in effect on the date of the invitation to tender. Copies may be obtained from the following address.

DSSPM 3-6-80-001 Specification for  
CADPAT™ (Canadian  
Disruptive Pattern)

**1. PORTÉE**

**1.1 Portée.** La présente spécification dans sa totalité vise les exigences pour tissu à armure serge, aramide/rayonne résistant aux flammes, 185 g/m<sup>2</sup>.

**1.2 Description.** Le tissu décrit par cette spécification est un tissu tissé composé principalement de fibres d'aramide et de fibres de viscose permanente ignifuges. Le tissu peut être solide de couleur ou peut être imprimé avec l'un des motifs DCamCMC. Le tissu est destiné à être utilisé dans les vêtements résistant aux flammes porté par les Forces armées canadiennes.

**2. DOCUMENTS APPLICABLES**

**2.1 Documents du gouvernement.** Le document suivant fait partie intégrante de la présente spécification dans la mesure prescrite par cette dernière. La version en vigueur à la date d'appel d'offres s'applique. Des copies peuvent être obtenues de l'adresse suivante.

DSSPM 3-6-80-001 Spécification DCamCMC  
(Dessin de camouflage  
canadien)

Department of National Defence (NDHQ)  
Major General George R. Pearkes Building  
101 Colonel By Drive  
Ottawa, Ontario K1A 0K2  
Attention: DSSPM 3

Ministère de la défense nationale (QGDN)  
Édifice Mgén George R. Pearkes  
101, promenade Colonel By  
Ottawa (Ontario) K1A 0K2  
À l'attention de: DAPES 3

**2.2 Other publications.** The following publications form part of this specification to the extent specified herein. The effective date is that in effect on the date of the invitation to tender. Sources are as shown.

**2.2 Autres publications.** Les publications suivantes font partie intégrante de la présente spécification dans la mesure prescrite par cette dernière. La version en vigueur à la date d'appel d'offres s'applique. La source de diffusion est celle qui est indiquée.

**AATCC Test Methods**

American Association of Textile Chemists and Colorists  
PO Box 12215  
Research Triangle Park, NC  
27709-2215 USA  
Telephone: 919-549-3526  
Website: [www.aatcc.org](http://www.aatcc.org)

**AATCC Test Methods**

American Association of Textile Chemists and Colorists  
PO Box 12215  
Research Triangle Park, NC  
27709-2215 États-Unis  
Téléphone: 919-549-3526  
Site Internet: [www.aatcc.org](http://www.aatcc.org)

**ASTM Standards**

ASTM International  
PO Box C700  
100 Barr Harbor Dr  
West Conshohocken, PA  
19428-2959 USA  
Telephone: 610-832-9585  
Email: [service@astm.org](mailto:service@astm.org)  
Website: [www.astm.org](http://www.astm.org)

**ASTM Standards**

ASTM International  
PO Box C700  
100 Barr Harbor Dr  
West Conshohocken, PA  
19428-2959 États-Unis  
Téléphone: 610-832-9585  
Courriel: [service@astm.org](mailto:service@astm.org)  
Site Internet: [www.astm.org](http://www.astm.org)

**CGSB Standards**

Canadian General Standards Board  
Place du Portage III, 6B1  
11 Laurier Street  
Gatineau, Quebec  
K1A 1G6 Canada  
Telephone: 819-956-0425 or 1-800-665-2472  
Email: [ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca](mailto:ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca)  
Website: <http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html>

**Normes de l'ONGC**

Office des normes générales du Canada  
Place du Portage III, 6B1  
11, rue Laurier  
Gatineau (Québec)  
K1A 1G6 Canada  
Téléphone: 819-956-0425 ou 1-800-665-2472  
Courriel: [ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca](mailto:ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca)  
Site Internet: <http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-fra.html>

**US Federal Standards and Military Specifications**

DLA Document Services  
Building 4/D  
700 Robbins Avenue  
Philadelphia, PA  
19111-5094 USA  
Telephone: 215-697-6396  
Download Documents:

**Normes fédérales américaines et spécifications militaires**

DLA Document Services  
Building 4/D  
700 Robbins Avenue  
Philadelphia, PA  
19111-5094 États-Unis  
Téléphone: 215-697-6396  
Télécharger les documents:

<http://quicksearch.dla.mil/>

### ISO International Standards

International Organization for Standardization  
ISO Central Secretariat  
Chemin de Blandonnet 8  
CP 401

1214 Vernier, Geneva

Switzerland

Telephone: +41 22 749 01 11

E-mail: [central@iso.org](mailto:central@iso.org)

Website: <http://www.iso.org/iso/home.html>

or

Standards Council of Canada

600-55 Metcalfe Street

Ottawa, Ontario

K1P 6L5 Canada

Telephone: 613-238-3222

Email: [info@scc.ca](mailto:info@scc.ca)

Website: <http://www.scc.ca/en>

<http://quicksearch.dla.mil/>

### Normes internationales ISO

Organisation internationale de normalisation

Secrétariat central de l'ISO

Chemin de Blandonnet 8

CP 401

1214 Vernier, Genève

Suisse

Téléphone: +41 22 749 01 11

Courriel: [central@iso.org](mailto:central@iso.org)

Site Internet: <http://www.iso.org/iso/fr/home.htm>

ou

Conseil canadien des normes

55, rue Metcalfe, bureau 600

Ottawa, Ontario

K1P 6L5 Canada

Téléphone: 613-238-3222

Courriel: [info@ccn.ca](mailto:info@ccn.ca)

Site Internet: <http://www.scc.ca/fr>

## 2.3 Sealed patterns

DSSPM 264-08 Cloth, Twill, 50 aramid/50 FR  
viscose, 170g/m<sup>2</sup>, for fabric  
construction and hand

DSSPM 259-01 Cloth, Twist, Nylon/Cotton,  
Lightweight, CADPAT™  
(TW), for construction,  
colours, pattern, finish, motif  
size, clarity, penetration,  
hand, print quality

DSSPM 253-02 Cloth, Twist, Nylon/Cotton,  
Lightweight, CADPAT™  
(AR), for construction,  
colours, motif size, colour  
distribution, print quality,  
penetration, clarity, hand,  
finish

DCGEM 263-78 For colour SAR International  
Orange: Cloth, Plain Weave,  
Nylon 5.75 oz/yd<sup>2</sup>

DCGEM 291-85 Cloth, Serge, Wool/Polyester,  
65/35, Black (for colour)

DCGEM 259-86 For colour Navy Blue: Cloth,

## 2.3 Modèles réglementaires.

DSSPM 264-08 Tissu 50 % aramide/50 %  
viscose ignifuge à armure  
sergé, 170g/m<sup>2</sup>, pour la  
confection et la main.

DSSPM 259-01 Tissu nylon/coton simple  
retors léger, DCam<sup>MC</sup>  
(RBT), pour la confection, les  
couleurs, le dessin, le fini, la  
taille des motifs, la clarté, la  
pénétration, la main et la  
qualité d'impression

DSSPM 253-02 Tissu nylon/coton simple  
retors léger, DCam<sup>MC</sup> (RA),  
pour la confection, les  
couleurs, le dessin, le fini, la  
taille des motifs, la clarté, la  
pénétration, la main et la  
qualité d'impression

DCGEM 263-78 Pour la couleur SAR orange  
international: tissu, armure  
unie, nylon, 5,75 oz/vg<sup>2</sup>

DCGEM 291-85 Tissu, armure serge, laine/  
polyester, 65/35, noir. Pour la  
couleur.

DCGEM 259-86 Pour la couleur bleu marine:



	Plain Weave, Aramid, 222 g/m <sup>2</sup> , Navy Blue		tissu aramide, armure unie, 222 g/m <sup>2</sup> , bleu marine
DSSPM 254-03	For colour Tan: Cloth, Plain Weave, Aramid, 200 g/m <sup>2</sup> , Tan	DSSPM 254-03	Pour la couleur havane: tissu aramide, armure unie, 200 g/m <sup>2</sup> , havane
DSSPM 253-04	For colour Canadian Air Force Green: Cloth, plain weave, flame resistant	DSSPM 253-04	Pour la couleur vert de la Force aérienne canadienne: tissu, armure unie, résistant aux flammes

## 2.4 Order of precedence

**2.4.1** In the event of any inconsistency in contract documents such as contract, specification and sealed patterns, the order of precedence will be contract, specification, and sealed pattern.

**2.4.2** In the event of a conflict between the text of this specification and the references cited herein, the text of this specification takes precedence.

**2.4.3** In the event of inconsistency within the specification, including inconsistency between languages, the Design Authority (DSSPM 2-2) must be contacted for clarification.

## 2.4 Ordre de préséance.

**2.4.1** En cas de divergence entre les documents contractuels, tels le contrat, la spécification et les modèles réglementaires, l'ordre de préséance sera: le contrat, la spécification et les modèles réglementaires.

**2.4.2** En cas de divergence entre les documents mentionnés aux présentes et le contenu de la présente spécification, cette dernière a préséance.

**2.4.3** En cas d'incohérence dans l'énoncé de la spécification, incluant l'incohérence entre les langues, il faut communiquer avec l'autorité responsable de la conception (DAPES 2-2) pour obtenir des précisions.

## 3. REQUIREMENTS

**3.1 Workmanship.** The material covered by this specification must be free of imperfections or blemishes such as may adversely affect its appearance or serviceability. For inspection purposes, imperfections and blemishes will be considered defects when clearly visible at a normal inspection distance of approximately 1 metre under good, preferably North Light, lighting conditions.

**3.2 Sealed patterns.** A sealed pattern, when available, will be supplied to the successful bidder. Sealed patterns, when furnished, will constitute the standard only to the extent defined in this Specification. Note that the order of precedence prevails (para 2.4). Sealed patterns must be returned to the Crown and under no circumstances may be mutilated or cut.

**3.3 Fabric.** The fabric described is a 2/1 twill weave and is depicted in Sealed Pattern DSSPM 264-08. However, alternative weave constructions that meet all other specified performance requirements may be

## 3. EXIGENCES

**3.1 Qualité d'exécution.** Le tissu visé par la présente spécification doit être exempt de défauts pouvant nuire à son aspect, sa qualité ou à sa tenue en service. Aux fins d'inspection, les imperfections et les défauts seront considérées comme des défauts lorsqu'elles sont clairement visibles à une distance d'inspection normale d'environ 1 mètre sous bonne conditions d'éclairage, de préférence la lumière du nord.

**3.2 Modèles réglementaires.** Un modèle réglementaire, lorsque disponible, sera fourni au soumissionnaire retenu. Lorsque fourni, le modèle réglementaire doit constituer la norme en ce qui a trait seulement dans la mesure définie dans la présente Spécification. Nota – L'ordre de préséance (par. 2.4) doit être respecté. Les modèles réglementaires doivent être renvoyés au gouvernement et en aucun cas peut être endommagés ni coupés.

**3.3 Tissu.** Le tissu décrit est une armure sergé 2/1 et est représenté dans le modèle réglementaire DSSPM 264-08. Cependant, les constructions de tissage alternatives conformes à toutes les autres exigences de

considered acceptable at the discretion of the Technical Authority and the Operational Requirements Authority. When tested in accordance with the applicable test methods, the finished fabric must comply with the requirements specified in Table I and, when applicable, DSSPM 3-6-80-001, Specification for CADPAT™.

**3.3.1** Note that the requirement for woven fabric count serves as a guideline and may vary with fabric structure.

**3.4 Yarns.** Warp and weft yarns are an intimate blend of aramid and flame resistant (FR) rayon (viscose) fibres. The addition of nylon fibres to the intimate blend may be required to impart the required strength and abrasion resistance. Carbon antistatic fibres may be required in order to impart the required electrostatic discharge properties (see Table I). Total carbon antistatic fibre content is to be selected by the producer but may not exceed 5% of the total blend.

**3.5 Colour and Print.** The solid colour or the printed CADPAT™ pattern required will be specified in the Specification for the finished garment or in the invitation to tender. A Sealed Pattern or colour coordinates may be referenced for colour.

**3.5.1 CADPAT™.** The requirements for the CADPAT™ prints as applicable to the fabric described herein are defined in DSSPM 3-6-80-001, Specification for CADPAT™.

**3.5.1.1** Printing shall be carried out using best commercial practice using a wet process with dyestuffs. The use of pigments is to be avoided, however, if necessary to impart the required colour and IRR properties, their use must be kept to a minimum in order to ensure a soft hand consistent with that of sealed pattern DSSPM 264-08. Note that the printed pattern must be clearly visible and clean on the reverse side of the textile so good penetration is required.

**3.5.2 Solid Colours.** Solid fabric colour may be obtained by using solution dyed or dope dyed fibres. The fabric may also be dyed using an appropriate class of dyes that will give the required degree of colour fastness (see Table I) and a uniform, good penetration of colour in the fibres and fabric. Fabric that deviates from the applicable sealed pattern or colour coordinates, or that does not visibly meet the colour penetration

performance spécifiées peuvent être considérés comme acceptables à la discrétion de l'autorité technique et l'autorité des exigences opérationnelles. Lors des essais réalisés conformément aux méthodes d'essai applicables, le tissu fini doit être conforme aux exigences prescrites au tableau I et, le cas échéant, DSSPM 3-6-80-001, Spécification DCamC<sup>MC</sup>.

**3.3.1** Noter que l'exigence tissé nombre de tissu sert de guide et peut varier avec la structure du tissu.

**3.4 Fils.** Les fils de chaîne et de trame sont un mélange intime de fibres aramides et de fibres de rayonne (viscose) ininflammable. L'addition des fibres en nylon au mélange intime peut être exigée pour donner la résistance de force et la résistance à l'abrasion exigée. Des fibres de carbone antistatiques peuvent être intégrées au tissu pour assurer une protection contre les décharges électrostatiques (voir tableau I). La teneur totale en fibres de carbone antistatiques, à déterminer par le fabricant, ne doit pas représenter plus 5 % du mélange.

**3.5 Couleur et imprimer.** La couleur unie ou le motif du DCamC<sup>MC</sup> imprimé requis seront précisées dans la spécification pour le vêtement fini ou dans l'appel d'offres. On peut citer un modèle réglementaire ou des coordonnées de couleur en référence pour la couleur.

**3.5.1 DCamC<sup>MC</sup>.** Les exigences pour les impressions DCamC<sup>MC</sup> comme applicable au tissu décrit ici sont définis dans DSSPM 3-6-80-001, Spécification DCamC<sup>MC</sup>.

**3.5.1.1** L'impression doit être exécutée selon les bonnes pratiques commerciales, utilisant un processus mouillé, au moyen de colorants. L'utilisation de pigments est à éviter, toutefois, si nécessaire pour conférer la couleur et les propriétés requises IRR, leur utilisation doit être limitée au minimum afin d'assurer une main douce compatible avec celle de modèle réglementaire DAPES 264-08. Note que le dessin doit être bien visible et net sur l'envers du tissu, une bonne pénétration est donc nécessaire.

**3.5.2 Couleurs Solides.** La couleur du tissu solide doit être obtenue à l'aide d'une teinture en solution ou d'une teinture dans la masse des fibres. Le tissu peut également être teint à l'aide d'une catégorie appropriée de teintures qui donneront le degré voulu de solidité de la couleur (voir le tableau I) ainsi qu'une bonne pénétration uniforme de la couleur dans les fibres et le tissu. Les tissus teints qui ne correspondent pas au

requirements will be rejected.

modèle réglementaire applicable ou aux coordonnées de couleur ou qui ne respectent visiblement pas les exigences relatives à la pénétration de la couleur doivent être rejetés.

**3.5.2.1** Visual colour matching is to be carried out in North sky light in the Northern hemisphere, Daylight D65, conditions in accordance with AATCC Evaluation Procedure 9, Visual Assessment of Colour Difference of Textiles, Option B. Unless otherwise specified, the colour difference between sealed pattern and the proposed fabric sample should be Grey Scale (GS) 4 or better.

**3.5.2.1** L'appariement des couleurs visibles doit être réalisé sous la lumière du nord dans les conditions de l'hémisphère Nord (lumière du jour D65), conformément à la procédure d'évaluation no 9 de l'AATCC, option B (évaluation visuelle de la différence de couleur des textiles). Sauf indication contraire, la différence de couleur entre le modèle réglementaire et l'échantillon de tissu proposé doit être de 4 ou plus sur l'échelle de gris.

**3.5.2.1.1** There must be minimal "flare" or metamerism when the light source changes (for example, no greater than a difference of GS 4). Should metamerism be observed on the applicable sealed pattern, the proposed fabric sample must exhibit comparable metamerism. The difference between the sealed pattern and the proposed fabric sample should be no more than GS 4 when the light source changes.

**3.5.2.1.1** Le métamérisme doit être minimal lorsque la source de lumière change (par exemple, une différence d'au plus 4 sur l'échelle de gris). Si le métamérisme est observé sur le modèle étanche applicable, l'échantillon de tissu proposé doit présenter le métamérisme comparable. La différence entre le modèle scellé et l'échantillon de tissu proposé ne devrait pas être plus de GS 4 lorsque les changements de source lumineuse.

**3.5.2.2 Colour coordinates:** Although CIE  $L^*a^*b^*$  coordinates may not be specified for some colours, instrumental colour readings, are to be used in conjunction with the visual evaluation.

**3.5.2.2 Coordonnées de couleur :** Bien que les coordonnées CIE  $L^*a^*b^*$  ne soient peut-être pas indiquées pour certaines couleurs, on doit utiliser les lectures des couleurs sur appareil avec l'évaluation visuelle.

**3.5.2.2.1** Illuminant D65, 10 degree observer, 8°/t geometry of illumination and viewing with specular component included, must be used for instrumental measurement and colour calculation.

**3.5.2.2.1** L'illuminant D65, à 10°, 8°/t géométrie d'illumination et de la visualisation avec composante spéculaire incluse, doit être utilisé pour la mesure instrumentale et le calcul de la couleur.

**3.5.2.2.2** Sample preparation for all colour measurements must be in accordance with AATCC Instrumental Measurement Procedure #6, A1.3, non-opaque samples. It has been found that at least 4 layers of self-fabric are usually required to provide consistent readings. A standard black backing is recommended. It is the responsibility of the operator to determine and follow a standard sample preparation which meets the stated conditions.

**3.5.2.2.2** La préparation d'un échantillon pour toutes les mesures de couleur doit se faire conformément à la procédure no 6, Instrumental Measurement Procedure de l'AATCC, A1.3, échantillons non opaques. Il a été découvert qu'au moins quatre épaisseurs de tissu à même sont généralement requises pour fournir des lectures constantes. Un support noir standard est recommandé. C'est la responsabilité de l'exploitant de déterminer et de suivre une procédure de préparation d'un échantillon standard qui satisfait aux conditions énoncées.

**3.5.2.2.3 Colour Acceptance.** For colour comparison and acceptance purposes, the applicable sealed pattern and the subject fabric sample must be measured using the same instrument on the same date under the same conditions. The measured CIE  $L^*a^*b^*$  colour coordinates for both the sealed pattern and the subject fabric must be reported. As well, the  $\Delta E_{CMC(2:1)}$  colour

**3.5.2.2.3 Acceptation du couleur.** Aux fins de comparaison des couleurs et d'acceptation, le modèle réglementaire et l'échantillon de tissu sujet applicables doivent être mesurés avec le même appareil, à la même date et dans les mêmes conditions. Les coordonnées de couleur CIE  $L^*a^*b^*$  mesurées pour le modèle réglementaire et le tissu sujet doivent être consignées

difference between the two must be calculated and reported. The  $\Delta E_{CMC(2:1)}$  between the sealed pattern and the proposed fabric must be no greater than 1.5, however,  $\Delta E_{CMC(2:1)}$  less than 1 is the goal.

**3.6 Finish.** The cloth is to be given a durable oil resistant and water repellent treatment.

**3.7 Piece marking.** Each piece of cloth must have a label attached to the selvage at one end. The label is to be made of linen, spun-bonded olefin or heavy cardboard with a reinforced eyelet for attaching a tying cord. The label must be legibly printed with the following information:

- a) Contractor's identification
- b) Gross length in metres (including allowance)
- c) Net length in metres
- d) Piece number
- e) Number of lengths per piece
- f) Nomenclature
- g) Colour
- h) Specification number
- i) Contract number, month and year
- j) NATO Stock Number

#### 4. QUALITY CONTROL / INSPECTION

**4.1** Unless otherwise specified in the contract or procurement documents, the contractor is responsible for the performance of all inspection requirements as specified herein. Contractors may utilize their own or any other inspection facility acceptable to the Government or its designated representative. The Government reserves the right to perform any of the inspections specified herein, where such inspections are deemed necessary to ensure material and services conform to prescribed requirements. The contractor is responsible for ensuring that all material or services submitted to the Government for acceptance comply with all requirements of the contract.

#### 5. PACKAGING

**5.1 Packaging and packing.** Unless otherwise specified, when delivered to Canada, packaging, packing, delivery and marking must be in accordance with the terms of the contract.

dans un rapport. De plus, la différence de couleur  $\Delta E_{CMC(2:1)}$  entre les deux doit être calculée et consignée dans un rapport. La différence  $\Delta E_{CMC(2:1)}$  entre le modèle réglementaire et le tissu proposé ne doit pas dépasser 1,5; toutefois, une résultat de  $\Delta E_{CMC(2:1)}$  moins de 1 est le but.

**3.6 Fini.** Le tissu doit recevoir un traitement oléofuge et hydrofuge durable.

**3.7 Marquage des pièces.** Une étiquette doit être apposée sur la lisière à une extrémité de chaque pièce. L'étiquette doit être en toile de lin, en oléfine thermoliée ou en carton fort et percée d'un œillet renforcé permettant d'attacher une ficelle; elle doit porter les indications suivantes en caractères lisibles:

- a) Identification de l'entrepreneur
- b) Longueur brute en mètres (y compris la réserve)
- c) Longueur nette en mètres
- d) Numéro de la pièce
- e) Nombre de longueurs par pièce
- f) Nomenclature
- g) Couleur
- h) Numéro de la spécification
- i) Numéro, mois et année du contrat
- j) Numéro de nomenclature OTAN

#### 4. CONTRÔLE DE LA QUALITÉ / INSPECTION

**4.1** Sauf indication contraire dans le contrat ou les documents d'achat, l'entrepreneur est tenu d'effectuer les inspections mentionnées dans la présente spécification. Il peut utiliser à cette fin son propre matériel d'inspection ou celui de tout autre établissement acceptable au gouvernement du Canada ou à son représentant désigné. Le gouvernement se réserve le droit d'effectuer les inspections mentionnées dans la présente spécification, lorsqu'elles sont nécessaires pour garantir que le matériel et les services sont conformes aux exigences prescrites. L'entrepreneur doit s'assurer que le matériel et les services proposés au gouvernement sont conformes aux exigences du contrat.

#### 5. CONDITIONNEMENT

**5.1 Conditionnement et emballage.** Sauf indication contraire, le conditionnement, l'emballage, la livraison et le marquage des contenants d'expédition doivent être conformes aux modalités du contrat.

## 6. NOTES

**6.1 Ordering data.** Procurement documents should specify the following:

- a) Title, number and date of this specification
- b) Colour required
- c) Packaging and marking of shipping containers
- d) The Design Authority

## 6.2 Definition of terms.

**6.2.1 Design Authority.** The Design Authority is the Government agency responsible for technical aspects of design and changes to design. Unless otherwise specified in the contract, the Design Authority is the Director Soldier Systems Program Management, DSSPM.

**6.2.2 Quality Assurance Authority.** The Quality Assurance Authority is the Government agency responsible for providing assurance that material and services supplied by the contractor conform to specified requirements. The Quality Assurance Authority is the Director Quality Assurance.

**6.2.3 Master sealed pattern.** A master sealed pattern is the authorized prototype of the item to be produced and is held only by the Government.

**6.2.4 Sealed pattern.** A sealed pattern is an exact duplicate of the master sealed pattern and is available to the manufacturer to be used as a guide in production.

## 7. ENVIRONMENTAL, HEALTH, AND SAFETY

**7.1 Recycled, recovered, and/or environmentally preferable materials.** Recycled, recovered, and/or environmentally preferable materials should be used to the maximum extent possible, provided that the materials meet or exceed the operational and maintenance requirements, and promote economically advantageous life cycle costs.

**7.1.1** Manufacturing processes with minimal environmental impact are encouraged.

## 6. REMARQUES

**6.1 Données de commande.** Les documents d'achat devraient préciser:

- a) Titre, numéro et date de la présente spécification
- b) Couleur requise
- c) Conditionnement et marquage des contenants d'expédition
- d) Autorité responsable de la conception

## 6.2 Définition des termes.

**6.2.1 Autorité responsable de la conception.** L'autorité responsable de la conception est l'organisme gouvernemental chargé des aspects techniques de la conception et des modifications connexes. Sauf indication contraire dans le contrat, il s'agit de la Direction, Administration du programme de l'équipement du soldat (DAPES).

**6.2.2 Autorité responsable de l'assurance de la qualité.** Organisme gouvernemental chargé d'assurer que le matériel et les services fournis par l'entrepreneur respectent les exigences prescrites. L'autorité responsable de l'assurance de la qualité est le directeur de l'assurance de la qualité.

**6.2.3 Modèle réglementaire principal.** Prototype autorisé de l'article qui doit être fabriqué et dont le gouvernement est le détenteur.

**6.2.4 Modèle réglementaire.** Copie exacte du modèle réglementaire principal mis à la disposition du fabricant qui doit l'utiliser comme un guide.

## 7. ENVIRONNEMENT, SANTÉ ET SÉCURITÉ

**7.1 Matériaux recyclés, récupérés et/ou écologiques.** Des matériaux recyclés, récupérés et/ou écologiques devraient être utilisés autant que possible, pourvu qu'ils respectent les exigences opérationnelles et les exigences en matière d'entretien, ou les dépassent, et qu'ils favorisent des économies pendant le cycle de vie des articles.

**7.1.1** Les procédés de fabrication ayant une incidence minime sur l'environnement sont recommandés.

**7.1.2** The use of environmentally preferable materials and manufacturing methods applies to the items covered by this specification as well as to any of the packaging and shipping materials and methods required for delivery.

**7.2** Although certification is not a requirement at this time, textile materials covered by this specification should be eligible for certification to OEKO-TEX Standard 100 for class II products.

**7.3** The production of a product to this specification, or the evaluation of a product to this specification, may require the use of materials and/or equipment that could be hazardous. This specification does not purport to address all safety, health and environmental concerns, if any, associated with its use. It is the responsibility of the user of this specification to establish appropriate safety, health and environmental practices and to determine the applicability of regulatory limitations prior to use.

**7.1.2** L'utilisation de matériaux et de procédés de fabrication écologiques s'applique aux articles visés par la présente spécification ainsi qu'aux matériaux et méthodes de conditionnement et d'emballage nécessaires pour la livraison.

**7.2** Bien que la certification n'est pas une exigence en ce moment, les textiles visés par la présente spécification devraient être admissibles à une certification selon la norme 100 d'OEKO-TEX pour les produits de classe II.

**7.3** La fabrication ou l'évaluation d'un produit conformément à la présente spécification pourrait nécessiter l'utilisation de matériel ou d'équipement dangereux. La présente spécification n'a pas pour objet de traiter de toutes les préoccupations relatives à la santé, à la sécurité et à l'environnement liées à son utilisation. Il incombe à l'utilisateur de la spécification d'établir au préalable des méthodes appropriées qui tiennent compte des questions d'environnement, de santé et de sécurité, et de déterminer les restrictions réglementaires applicables.

**Table I: Finished Cloth**

<b>Property</b>	<b>Test Method</b>	<b>Specified Requirement</b>	<b>Minimum Acceptable</b>	<b>Maximum Acceptable</b>
Fibre Content			25% aramid 35% FR viscose 1% carbon antistatic	65% aramid 65% FR viscose 10% nylon 5% carbon antistatic
Mass (g/m <sup>2</sup> )	CAN/CGSB-4.2 No. 5.1		170	200
Woven Fabric Count (yarns per cm)	CAN/CGSB-4.2 No. 6		warp: 22 weft: 21	warp: 24 weft: 23
Breaking Strength (N)	CAN/CGSB-4.2 No. 9.1	warp: 800 weft: 700	warp: 750 weft: 700	
Tearing Strength (N)	CAN/CGSB-4.2 No. 12.1	warp: 40 weft: 40	warp: 35 weft: 35	
Abrasion Resistance	ISO 12947-2 at 12 kPa Test to failure. Report number of cycles to failure and condition of specimen at 35,000 and 45,000 cycles.		>45,000 cycles no thin areas or holes	
Air permeability (cm <sup>3</sup> /cm <sup>2</sup> /s)	CAN/CGSB-4.2 No. 36		30	
Dimensional Stability (after 3 wash-dry cycles)	CAN/CGSB-4.2 No. 58 (III.E3) or No. 24 (3.E.III)			warp: 3.0% weft: 3.0%
Colourfastness to Light ( <u>Excluding</u> Canadian Air Force Green for which there is no requirement)	AATCC 16.3 Option 3			Grey Scale 4 after 40 AATCC Fading Units, for each colour
Colourfastness to Crocking (all colours)	AATCC 116	dry: GS 5 wet: GS 5		dry: GS 4 wet: GS 3
Water Repellency	CAN/CGSB-4.2 No. 26.2		80	

Property	Test Method	Specified Requirement	Minimum Acceptable	Maximum Acceptable
Flame Resistance (edge ignition)	CAN/CGSB-4.2 No. 27.10			Average damaged length: warp: 100 mm weft: 100 mm  Average after flame: 2 .0 sec
Thermal Protective Performance (TPP) with spacer, single layer	CAN/CGSB-4.2 No. 78.1	10	9	
Thermal Shrinkage Resistance (at 260°C)	CAN/CGSB-155.20 para 7.3.1			5%
Static Decay	FED-STD-191A Method 5931 Test at 20°C & 20% RH; test warp and filling; charge to +5000V and -5000V; report results for each direction	Fabric must charge to at least $\pm 4000V$ ; less than 0.5 second overall average time to decay, no single measurement greater than 0.5 sec		
Seam Efficiency	ASTM D1683 and Note 1		warp: 80% weft: 80%	
CADPAT™ Colour and Infra-red Reflectance	DSSPM 3-6-80-001			

**Note 1 Seam Efficiency.** Seams for testing must be constructed with seam type 2.04.03 and stitch type 301 in accordance with CAN/CGSB-54.1, Parts 1 and 2. Seams must be a minimum of 3/8" wide. The distance between rows of stitching must be 1/4". There must be 10 to 12 stitches per inch. The thread must be spun staple aramid in accordance with A-A-55217, Type II, tex 27. The size and type of needle used must be that which best suits the sewing operation involved.



Tableau I: Tissu fini

Propriété	Méthode d'essai*	Exigence spécifiée	Minimum acceptable	Maximum acceptable
Teneur en fibre			25% aramides 35% rayonne inflammable 1% carbone antistatiques	65% aramides 65% rayonne inflammable 10% nylon 5% carbone antistatiques
Masse (g/m <sup>2</sup> )	CAN/CGSB-4.2 N° 5.1		170	200
Contexture (fils par cm)	CAN/CGSB-4.2 N° 6		Chaîne: 22 Trame: 21	Chaîne: 24 Trame: 23
Résistance à la rupture (N)	CAN/CGSB-4.2 N° 9.1	Chaîne: 800 Trame: 700	Chaîne: 750 Trame: 700	
Résistance à la déchirure (N)	CAN/CGSB-4.2 N° 12.1	Chaîne: 40 Trame: 40	Chaîne: 35 Trame: 35	
Résistance à l'abrasion	ISO 12947-2 à 12 kPa Essai à l'échec. Rapportez le nombre de cycles à l'échec et l'état du spécimen à 35000 et 45000 cycles.		> 45 000 cycles Pas de zones minces ni de trous	
Perméabilité à l'air (cm <sup>3</sup> /cm <sup>2</sup> /s)	CAN/CGSB-4.2 N° 36		30	
Stabilité dimensionnelle (après trois cycles de lavage-séchage)	CAN/CGSB-4.2 N° 58 (III.E3) ou N° 24 (3.E.III)			Chaîne: 3.0 % Trame: 3.0 %
Solidité de la couleur à la lumière ( <u>À l'exclusion</u> du vert de la Force aérienne canadienne pour lequel il n'y a aucune exigence)	AATCC 16.3 Option 3			GS: 4 après l'exposition à 40 unités de décoloration de l'AATCC, pour chacune des trois couleurs
Solidité de la couleur au frottement (toutes les couleurs)	AATCC 116	Sec: GS 5 Mouillé: GS 5		Sec: GS 4 Mouillé: GS 3
Résistance au mouillage superficiel	CAN/CGSB-4.2 N° 26.2		80	

Propriété	Méthode d'essai*	Exigence spécifiée	Minimum acceptable	Maximum acceptable
Résistance à l'inflammation (allumage du bord)	CAN/CGSB-4.2 N° 27.10			Longueur moyenne endommagée: Chaîne: 100 mm Trame: 100 mm  Flamme résiduelle: 2.0s
Évaluation de la protection thermique, une seule couche d'espacement	CAN/CGSB-4.2 N° 78.1	10	9	
Résistance à la contraction thermique (à 260°C)	CAN/CGSB-155.20 par. 7.3.1			5 %
Détérioration statique	FED-STD-191 Method 5931 Essai à 20° C et 20 % HR; essai chaîne et trame; charges de +5000 V et de -5000 V; consigner les résultats obtenus pour les deux sens	Dans chaque sens soumettre le tissu à une charge d'au moins $\pm 4000$ V; moins de 0,5 s en moyenne jusqu'à la détérioration, pas de mesure supérieure à 0,5 s		
Efficacité des coutures	ASTM D1683 et note 1		Chaîne: 80 % Trame: 80 %	
Couleur et Réflexion infrarouge	DSSPM 3-6-80-001			

**Note 1 Solidité des coutures.** Pour les essais, les coutures doivent être de type 2.04.03 et exécutées avec des points 301, conformément à la norme CAN/CGSB-54.1, parties 1 et 2. Les coutures doivent avoir au moins 3/8 po de largeur. La distance entre les piqûres doit être de ¼ po. Il doit y avoir de 10 à 12 points par pouce. Le fil doit être constitué de fibres d'aramides coupées 27 tex, conformément au type II de la norme A-A-55217. Le calibre et le type d'aiguille doivent convenir aux coutures exécutées.

## NOTICE



Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originalement doivent continuer de s'appliquer.

## AVIS

This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

## SPECIFICATION

## CLOTH, KNIT, BASE LAYER,

## FLAME RESISTANT,

200 g/m<sup>2</sup>

## 1. SCOPE

**1.1 Scope.** This specification in its entirety describes the requirements for a flame resistant knit fabric to be used as torso fabric for flame resistant hybrid design combat shirts. The hybrid shirt is intended for wear under personal protection vests (fragmentation or flotation) in combat operations. The hybrid shirt will have a knit body (torso) and woven sleeves so that when under the vest the garment looks like a traditional combat shirt. The knit cloth described herein may also be appropriate for use in other clothing items such as operational t-shirts.

## 2. APPLICABLE DOCUMENTS

## 2.1 Government documents. Not Applicable

**2.2 Other documents.** The following documents form part of this specification to the extent specified herein. Effective dates are those in effect on the date of invitation to tender. Source is as shown.

**CAN/CGSB-4.2 Textile Test Methods**  
**CAN/CGSB-155.22 Fireline Workwear for Forest Firefighters**  
 Canadian General Standards Board  
 Place du Portage III, 6B1  
 11 Laurier Street

## SPÉCIFICATION

## TISSU, TRICOT, COUCHE DE BASE,

## RÉSISTANT AUX FLAMMES,

200 g/m<sup>2</sup>

## 1. PORTÉE

**1.1 Portée.** La présente spécification dans sa totalité décrit les exigences relatives au tissu tricot résistant aux flammes utilisé comme tissu de torse pour une chemise de combat de conception hybride résistant aux flammes. La chemise hybride est conçue pour être portée sous des vestes de protection individuelle (fragmentation ou flottation) dans les opérations de combat. La chemise hybride sera constituée d'un corps (torse) en tricot et de manches tissées de façon à ce que sous la veste, le vêtement ressemble à la chemise de combat traditionnelle. Le tissu tricoté décrit ici peut également être approprié pour l'utilisation dans d'autres articles vestimentaires tels que les t-shirts opérationnels.

## 2. DOCUMENTS APPLICABLES

## 2.1 Documents du gouvernement. Sans objet.

**2.2 Autres publications.** Les documents suivants font partie intégrante de la présente spécification selon les modalités indiquées ci-après. La version en vigueur à la date de l'appel d'offres s'applique. La source de diffusion est celle indiquée.

**CAN/CGSB-4.2 Méthodes pour épreuves textiles**  
**CAN/CGSB-155.22 Vêtements de travail portés par les sapeurs-pompiers forestiers à la ligne de feu**  
 Office des normes générales du Canada  
 Place du Portage III, 6B1

Gatineau, Quebec K1A 1G6  
 Telephone: 819-956-0425 or 1-800-665-2472  
 Email: [ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca](mailto:ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca)  
 Website: <http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-eng.html>

11, rue Laurier  
 Gatineau (Québec) K1A 1G6  
 Téléphone : 819-956-0425 ou 1-800-665-2472  
 Courriel : [ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca](mailto:ncr.cgsb-ongc@tpsgc-pwgsc.gc.ca)  
 Site Web : <http://www.tpsgc-pwgsc.gc.ca/ongc-cgsb/index-fra.html>

### **ISO International Standards**

IHS Canada  
 240 Catherine Street, Suite 305  
 Ottawa, ON  
 K2P 2G8 Canada  
 Website: <http://www.ihs.com>  
 or ISO: <http://www.iso.org>

### **Normes internationales ISO**

IHS Canada  
 240, rue Catherine, bureau 305  
 Ottawa Ontario  
 K2P 2G8 Canada  
 Site Web : <http://www.ihs.com>  
 ou ISO : <http://www.iso.org>

### **AATCC Technical Manual**

P.O. Box 12215  
 Research Triangle Park, NC  
 27709, USA  
 Telephone: 919-549-3526  
 Website: [www.aatcc.org](http://www.aatcc.org)

### **AATCC Technical Manual**

P.O. Box 12215  
 Research Triangle Park, NC  
 27709, ÉTATS-UNIS  
 Téléphone : 919-549-3526  
 Site Web : [www.aatcc.org](http://www.aatcc.org)

### **ASTM International – Standards & Publications - Section 7: Textiles**

ASTM Headquarters  
 100 Barr Harbour Dr  
 PO Box C700  
 West Conshohocken, PA 19428-2959 US

### **ASTM International – Standards & Publications Section 7: Textiles**

ASTM Headquarters  
 100 Barr Harbour Dr  
 PO Box C700  
 West Conshohocken, PA 19428-2959 ÉTATS-UNIS

### **Federal Standard No. 595C – Colors used in Government Procurement - #26132 and #36081**

General Services Administration  
 Federal Supply Service  
 FSS Product Acquisition Center  
 Supply Standards Division (FLAS)  
 Arlington, VA  
 22202 USA

### **Federal Standard No. 595C – Colors used in Government Procurement - #26132 and #36081**

General Services Administration  
 Federal Supply Service  
 FSS Product Acquisition Center  
 Supply Standards Division (FLAS)  
 Arlington, VA  
 22202 ÉTATS-UNIS

**2.3 Sealed Patterns.** Not applicable

**2.3 Modèles réglementaires.** Sans objet

**2.4 Order of Precedence.**

**2.4 Ordre de préséance.**

**2.4.1** In the event of a conflict between the text of this specification and the references cited herein, the text of this specification must take precedence.

**2.4.1** En cas de divergence entre la spécification et les documents mentionnés aux présentes, les dispositions de la spécification prévaudront.

**2.4.2** In the event of inconsistency within this specification, including inconsistency between official languages, the Technical Authority (DSSPM 2-11) must be consulted for clarification.

**2.4.2** En cas d'incohérence dans l'énoncé de la spécification, y compris dans les détails techniques entre les deux langues officielles, il faut communiquer avec l'autorité technique (DAPES 2-11) pour obtenir des précisions.

**2.4.3** Nothing in this document supersedes applicable laws and regulations, unless a specific exemption has been obtained.

**2.4.3** Aucun élément du présent document ne remplace les lois et règlements applicables, à moins qu'une exemption particulière n'ait été obtenue.

### 3. REQUIREMENTS

**3.1 Workmanship.** The material covered by this specification must be free of imperfections or blemishes such as may adversely affect its appearance, quality or serviceability. Good commercial standard practices must apply throughout. For inspection purposes, imperfections and blemishes will be considered defects when clearly visible at a normal inspection distance of approximately 1 metre under good, preferably North Light, lighting conditions. No knitting or yarn defect will be acceptable if the integrity of the fabric is in question in any way. Any hole, cut, tear, mend, drop stitch, loose knit, miss knit, slub, streak, knitted-in-waste, permanent fold, pleat or crease; any spot or stain, discolouration or colour not as specified; any shaded part, any objectionable odour are considered poor commercial standard and unacceptable.

**3.2 Sealed Pattern.** A Sealed Pattern, when available, will be supplied to the successful bidder. Sealed Patterns constitute the standard only in regard to any properties not defined in this specification. Note, however, that the order of precedence prevails (paragraph 2.4). Under no circumstances may Sealed Patterns be mutilated or cut and must be returned to the Crown on completion of the contract for which it is issued.

**3.1 Description of product.** This specification describes the requirements for a knitted textile. Fibre content is not specified. When tested in accordance with the specified test methods, the fabric must comply with the performance requirements specified in Table I.

**3.3 Fabric Properties.** The knit cloth must:

- a) be flame resistant;
- b) not melt, drip, stick or shrink excessively when exposed to high heat;
- c) be comfortable and non-irritating worn next-to-skin, therefore it must
  - have a pleasing hand,
  - transport moisture (sweat), away from the skin,
  - dry quickly,
  - be breathable,
  - allow for heat dissipation,

### 3. EXIGENCES

**3.1 Qualité d'exécution.** Le tissu visé par la présente spécification doit être exempt de défauts pouvant nuire à son aspect, à sa qualité ou à sa tenue en service. Les bonnes pratiques commerciales usuelles doivent être constamment appliquées. À des fins d'inspection, les imperfections et la décoloration seront considérés comme défauts lorsqu'elles sont clairement visibles à une distance d'inspection normale d'environ un mètre sous un bon éclairage, de préférence la lumière du nord. Aucun défaut dans le tricotage ou les fils n'est acceptable si l'intégrité du tissu est en cause. Un trou, une coupure, une déchirure, un raccommodage, une maille coulée, une maille lâche, une maille perdue, une bouloche, une strie, une ouverture dans le tricot, un pli permanent, une tache, une décoloration, une couleur non prescrite, une partie ombragée et une odeur désagréable sont tous considérés comme de mauvaises pratiques commerciales et sont inacceptables.

**3.2 Modèle réglementaire.** Un modèle réglementaire, lorsque disponible, sera fourni au soumissionnaire retenu. Les modèles réglementaires constituent le modèle normalisé en ce qui a trait seulement à toute propriété non définie dans la présente spécification. Nota : l'ordre de préséance (art. 2.4) doit être respecté. Les modèles réglementaires ne doivent en aucun cas être endommagés ni coupés, et ils doivent être retournés au gouvernement à la fin du contrat pour lequel ils ont été fournis.

**3.1 Description du produit.** Cette spécification décrit les exigences pour un textile tricoté. Le teneur en fibres n'est pas spécifié. Lorsqu'il est testé conformément aux méthodes d'essai spécifiées, le tissu doit être conforme aux exigences de performance spécifiées dans le tableau I.

**3.3 Propriétés de tissu.** Le tissu tricoté doit:

- a) être résistant aux flammes;
- b) ne pas fondre, goutter, coller ou rétrécir excessivement quand exposé à la chaleur élevée;
- c) être confortable et non irritant porté à côté de la peau, donc il doit
  - avoir une main agréable,
  - transporter l'humidité (sueur) loin de la peau,
  - sécher rapidement,
  - être perméable à l'air,

- not contain any fibres, finishes or treatments that are irritating to the skin or hazardous to human health;
- d) have antimicrobial properties to prevent or inhibit the growth of odour causing microorganisms on the fabric;
- e) have good shape retention; and
- f) withstand high laundering temperatures.

**3.4** The use of thermoplastic fibres should not exceed 40% by weight and up to 5% elastomer fibres (additional to the generic thermoplastic fibre content) may be incorporated to impart stretch recovery. The fabric structure should be appropriate for the end use in next to skin garments. Jersey and interlock knits have been found to be acceptable in similar applications.

**3.5 Dyeing.** Dyeing is to be carried out using good commercial practices. Sulphur dyes may not be used. Dyes, treatments, or finishes containing copper may not be used. Complete penetration of all component fibres is required. Colour must be uniform across all fibres such that colour speckling does not occur. The finished, dyed cloth must be free from dyeing defects such as shading, streaking, botching, barre, spots, frosting, etc.

**3.6 Colour.** The colour required will be specified in the Specification for the finished garment or in the invitation to tender. The colour required must match the applicable referenced standard colour chip. If sealed patterns are referenced for colour in end item technical data, the Technical Authority must be contacted for information regarding colour matching and colour acceptance criteria. When colour matching is questionable or proves challenging, the Technical Authority must be contacted to determine colour acceptance.

**3.6.1** The following colour references will apply when specified:

Tan: Fed-Std-595 Chip #20180

Coyote Brown: Fed-Std-595 Chip #20150

- permettre la dissipation thermique,
- ne pas contenir de fibres, de finitions ou de traitements irritants pour la peau ou dangereux pour la santé humaine;
- d) avoir des propriétés antimicrobiennes pour prévenir ou inhiber la croissance des micro-organismes qui causent les odeurs sur le tissu;
- e) avoir une bonne rétention de forme; et
- f) résister à des températures élevées de blanchiment.

**3.4** L'utilisation de fibres thermoplastiques ne doit pas dépasser 40% en poids, y compris jusqu'à 5% de fibres élastomères (En plus de la teneur en fibres thermoplastiques générique) qui peuvent être incorporés pour conférer la récupération étirement. La structure du tissu doit être appropriée pour l'utilisation finale dans les vêtements à côté de la peau. On a trouvé les tricotés de types jersey et interlock ont été acceptable dans des applications similaires.

**3.5 Teinture.** La teinture doit être effectuée conformément aux bonnes pratiques commerciales. Les colorants au soufre ne doivent pas être utilisés. Il ne faut pas non plus utiliser les teintures, les traitements ou les apprêts contenant du cuivre. La pénétration complète de toutes les fibres composant le tissu est requise. La couleur doit être homogène sur toutes les fibres, de sorte qu'il n'y ait pas de tacheture des couleurs. Le tissu teint fini doit être exempt de défauts de teinture comme le manque d'unisson, les rayures, la teinture ratée, la barrure, les taches, le blanchissement, etc.

**3.6 Couleur.** La couleur requise seront précisées dans la spécification pour le vêtement fini ou dans l'appel d'offres. La couleur requise doit correspondre à la puce de couleur standard. Si les modèles réglementaires sont référencés pour la couleur dans les données techniques de l'article final, l'autorité technique doit être contactée pour obtenir des informations concernant la correspondance des couleurs et le critère d'acceptation de la couleur. Lorsque la correspondance des couleurs est douteuse ou prouve difficile, l'autorité technique doit être contacté pour déterminer la couleur d'acceptation.

**3.6.1** Les références de couleur suivants s'appliquent lorsque spécifié:

Havane: Fed-Std-595 Chip #20180

Coyote brun: Fed-Std-595 Chip #20150

**3.6.1.1** Visual colour matching is to be carried out in accordance with AATCC Evaluation Procedure 9 option B, D75 daylight.

**3.6.1.1.1** Unless otherwise specified, the colour difference between the colour standard and the proposed fabric sample should be Grey Scale (GS) 4 or better.

**3.6.1.1.2** There must be minimal “flare” or metamerism when the light source changes (for example, no greater than a difference of GS 4). The difference between the colour standard and the proposed fabric sample should be no more than GS 4 when the light source changes.

**3.6.1.2 Colour coordinates:** CIE L\*a\*b\* coordinates are not applicable at this time. Colour measurements taken from a colour chip reference must not be considered definitive.

**3.7 Anti-Odour/Odour-Resistant Properties.** The cloth must not support microbial growth that may contribute to retention of body odours on the cloth. This may be an inherent property of the cloth, or it may be provided by a treatment, finish or product added or applied during fabric production. The method of imparting this property must be reported.

**3.7.1** Fabrics must comply with the requirements of Table I and any applied treatment must be durable to a minimum of 20 in-service launderings.

**3.7.2** Any anti-odour, odour-resistant or antimicrobial product present in the fabric must be acceptable for use on a textile substrate that will be in direct, prolonged contact with the skin. If applied in Canada, the products used to impart antimicrobial properties to the fabric must have a Pest Control Product Registration Number that has been issued by the Pest Management Regulatory Agency of Health Canada as an antimicrobial. If applied outside of Canada, the products used to impart antimicrobial properties to the fabric must be registered with the *United States Environment Protection Act under the Federal Insecticide, Fungicide, and Rodenticide Act* as an antimicrobial. If anti-odour, odour-resistant or antimicrobial products present in the fabric do not require registration in accordance with the aforementioned government agencies and acts, documentation supporting the exemption must

**3.6.1.1** L'appariement des couleurs visibles doit être réalisé conformément à la procédure d'évaluation n° 9 de l'AATCC, option B, lumière du jour D75.

**3.6.1.1.1** Sauf indication contraire, la différence de couleur entre le standard du couleur et l'échantillon de tissu proposé doit être de 4 ou plus sur l'échelle de gris.

**3.6.1.1.2** Le métamérisme doit être minimal lorsque la source de lumière change (par exemple, une différence d'au plus 4 sur l'échelle de gris). La différence entre le standard du couleur et l'échantillon de tissu proposé ne devrait pas être plus de GS 4 lorsque les changements de source lumineuse.

**3.6.1.2 Coordonnées de couleur:** Les coordonnées CIE L\*a\*b\* ne soient pas spécifiées à ce moment. Les mesures de couleur prises à partir d'une référence de puce de couleur ne doivent pas être considérées comme définitives.

**3.7 Propriétés antiodeurs.** Le tissu ne devrait pas permettre la croissance microbienne qui peut contribuer à conserver les odeurs corporelles. Il peut s'agir d'une propriété inhérente du tissu ou d'un traitement, d'un enduit ou d'un produit ajouté au tissu ou appliqué sur celui-ci pendant la production. La méthode pour conférer cette propriété doit être indiquée.

**3.7.1** Les tissus doivent être conformes aux exigences énoncées au tableau I et tout traitement appliqué devrait résister à au moins 20 lavages en service.

**3.7.2** Le produit antiodeur ou antimicrobien présent dans le tissu doit être approuvé pour utilisation sur le substrat en textile qui sera en contact direct avec la peau pendant une longue période. Lorsque les tissus sont traités au Canada, l'Agence de réglementation de la lutte antiparasitaire de Santé Canada doit avoir délivré un numéro d'enregistrement de produit antiparasitaire pour le produit utilisé pour conférer les propriétés antimicrobiennes au tissu, à titre d'enduit antimicrobien. Lorsque les tissus sont traités à l'extérieur du Canada, le produit utilisé pour le traitement antimicrobien doit être enregistré auprès de la *United States Environment Protection Act* en vertu de la *Federal Insecticide, Fungicide, and Rodenticide Act* comme produit antimicrobien. Si le produit antiodeur ou antimicrobien présent dans le tissu n'a pas à être enregistré conformément aux



be provided.

organismes gouvernementaux et à lois susmentionnées, l'entrepreneur doit fournir la documentation justifiant l'exemption.

#### 4. QUALITY CONTROL/INSPECTION

**4.1** Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Contractors may utilize their own or any other inspection facility acceptable to the Government or its designated representative. The Government reserves the right to perform any of the inspections specified herein, where such inspections are deemed necessary to ensure materials and services submitted to the Government for acceptance comply with all requirements of the contract.

#### 4. CONTRÔLE DE LA QUALITÉ ET INSPECTION

**4.1** Sauf indication contraire dans le contrat ou les bons de commande, l'entrepreneur est tenu d'effectuer les inspections susmentionnées dans la présente spécification. Il peut utiliser à cette fin son propre matériel d'inspection ou celui de tout autre établissement acceptable au gouvernement du Canada ou à son représentant désigné. Le gouvernement se réserve le droit d'effectuer les inspections mentionnées dans la présente spécification, lorsqu'elles sont nécessaires pour assurer que le matériel et les services présentés au gouvernement pour acceptation sont conformes aux exigences du contrat.

#### 5. PACKAGING

**5.1 Packaging and packing.** Unless otherwise specified, packaging and packing as well as delivery must be in accordance with the terms of the contract.

**5.2 Piece Marking.** Each piece of cloth must have a label attached to the selvedge at one end. The label is to be made of linen, spun-bonded olefin or heavy cardboard with a reinforced eyelet for attaching a tying cord. The label must be legibly printed with the following information:

- a) Contractor's identification
- b) Contract number, month and year
- c) Gross length in metres (including allowance)
- d) Net length in metres
- e) Piece number
- f) Number of lengths per piece
- g) Nomenclature
- h) Colour
- i) Specification number
- j) Date of manufacture
- k) NATO Stock Number

#### 5. CONDITIONNEMENT

**5.1 Conditionnement et emballage.** Sauf indication contraire, le conditionnement, l'emballage et la livraison doivent être conformes aux modalités du contrat.

**5.2 Marquage des pièces.** Chaque pièce de tissu doit porter, à une extrémité, une étiquette fixée à la lisière. L'étiquette doit être en toile de lin, en oléfine thermoliée ou en carton fort et percée d'un œillet renforcé permettant d'attacher une ficelle; elle doit porter les indications suivantes en caractères lisibles :

- a) Identification de l'entrepreneur
- b) Numéro du contrat, mois et année
- c) Longueur brute en mètres, y compris la réserve
- d) Longueur nette en mètres
- e) Numéro de la pièce
- f) Nombre de longueurs par pièce
- g) Nomenclature
- h) Couleur
- i) Numéro de la spécification
- j) Date de fabrication
- k) Numéro de nomenclature OTAN

#### 6. NOTES

**6.2 Technical Authority.** The Technical Authority is the Government agency responsible for technical aspects of design and changes to design.

#### 6. NOTES

**6.2 Autorité technique.** L'autorité technique est l'organisme gouvernemental chargé des aspects techniques de la conception et des modifications



The Technical Authority, for the items covered by this specification, is the Director Soldier Systems Program Management (DSSPM), Department of National Defence.

**6.3 Quality Assurance Authority.** The Quality Assurance Authority is the Government agency responsible for providing assurance that material and services supplied by the contractor conform to specified requirements. The Quality Assurance Authority is Director of Quality of Assurance (DQA), Department of National Defence.

#### **6.4 Definition of Terms.**

**6.4.1 Master Sealed Pattern.** A Master Sealed Pattern is the authorized prototype of the item to be produced and is held only by Canada.

**6.4.2 Sealed Pattern.** A Sealed Pattern is a duplicate of the Master Sealed Pattern and is available to the manufacturer to be used as a guide in production.

### **7. ENVIRONMENTAL, HEALTH, AND SAFETY**

**7.1 Recycled, recovered, and/or environmentally preferable materials.** Recycled, recovered, and/or environmentally preferable materials should be used to the maximum extent possible, provided that the materials meet or exceed the operational and maintenance requirements, and promote economically advantageous life cycle costs.

**7.1.1** Manufacturing processes with minimal environmental impact are encouraged.

**7.1.2** The use of environmentally preferable materials and manufacturing methods applies to the items covered by this specification as well as to any of the packaging and shipping materials and methods required for delivery.

**7.2** Although certification is not a requirement at this time, textile materials covered by this specification should be eligible for certification to OEKO-TEX Standard 100 for class II products.

**7.3** The production of a product to this specification, or the evaluation of a product to this

connexes. Dans le cas des articles visés par la présente spécification, il s'agit du Directeur – Administration du programme de l'équipement du soldat (DAPES) du ministère de la Défense nationale.

**6.3 Autorité responsable de l'assurance de la qualité.** L'autorité responsable de l'assurance de la qualité est l'organisme gouvernemental chargé d'assurer que le matériel et les services fournis par l'entrepreneur satisfont aux exigences prescrites. L'autorité responsable de l'assurance de la qualité est le Directeur – Assurance de la qualité (DAQ) du ministère de la Défense nationale.

#### **6.4 Définition des termes.**

**6.4.1 Modèle réglementaire principal.** Prototype autorisé de l'article qui doit être fabriqué et dont le Canada est le seul détenteur.

**6.4.2 Modèle réglementaire.** Copie exacte du modèle réglementaire principal mis à la disposition du fabricant qui doit l'utiliser comme un guide pour produire l'article.

### **7. ENVIRONNEMENT, SANTÉ ET SÉCURITÉ**

**7.1 Matériaux recyclés, récupérés et/ou écologiques.** Des matériaux recyclés, récupérés et/ou écologiques devraient être utilisés autant que possible, pourvu qu'ils respectent les exigences opérationnelles et les exigences en matière d'entretien, ou les dépassent, et qu'ils favorisent des économies pendant le cycle de vie des articles.

**7.1.1** Les procédés de fabrication ayant une incidence minimale sur l'environnement sont recommandés.

**7.1.2** L'utilisation de matériaux et de procédés de fabrication écologiques s'applique aux articles visés par la présente spécification ainsi qu'aux matériaux et méthodes de conditionnement et d'emballage nécessaires pour la livraison.

**7.2** Bien que la certification ne est pas une exigence en ce moment, les textiles visés par la présente spécification devraient être admissibles à une certification selon la norme 100 d'OEKO-TEX pour les produits de classe II.

**7.3** La fabrication ou l'évaluation d'un produit

specification, may require the use of materials and/or equipment that could be hazardous. This specification does not purport to address all safety, health and environmental concerns, if any, associated with its use. It is the responsibility of the user of this specification to establish appropriate safety, health and environmental practices and to determine the applicability of regulatory limitations prior to use.

conformément à la présente spécification pourrait nécessiter l'utilisation de matériel ou d'équipement dangereux. La présente spécification n'a pas pour objet de traiter de toutes les préoccupations relatives à la santé, à la sécurité et à l'environnement liées à son utilisation. Il incombe à l'utilisateur de la spécification d'établir au préalable des méthodes appropriées qui tiennent compte des questions d'environnement, de santé et de sécurité, et de déterminer les restrictions réglementaires applicables.

**TABLE I: Requirements for Cloth, Knit, Base Layer, Flame Resistant, 200 g/m<sup>2</sup>**

Property	Test Method	Minimum Acceptable	Maximum Acceptable
Nominal Mass*	CAN/CGSB-4.2 No. 5.1	130 g/m <sup>2</sup>	230 g/m <sup>2</sup>
Dimensional Change in Laundering (5 cycles)	CAN/CGSB-4.2 No. 58 IIIIE <sup>Note 1</sup>		Length: ±5% Width: ±5%
Colourfastness to Laundering	CAN/CGSB-4.2 No. 19.1 Test No. 2		Colour change: GS 4 Staining: GS 4 (except nylon: GS 3)
Colourfastness to Perspiration	CAN/CGSB-4.2 No. 23		Colour change: GS 4 Staining: GS 4
Resistance to Pilling (after 3 hours)	CAN/CGSB-4.2 No. 51.1	3	
Burst Strength	ASTM D3787	175 N	
Stretch Properties	ASTM D2594 <sup>Note 2</sup>		
Stretch		Length: 35% Width: 50%	
Fabric recovery - after 1 hour		Length: 90% Width: 90%	
Drying Time – after laundering (5 cycles)	AATCC 199 <sup>Note 1</sup>		180 minutes
Air Permeability	CAN/CGSB-4.2 No. 36	80 cm <sup>3</sup> /cm <sup>2</sup> /s	
Wicking – vertical	AATCC 197 Option A <sup>Note 3</sup>	length: 7 cm in 15 minutes width: 7 cm in 15 minutes	
Thermal Resistance - R <sub>ct</sub> (sweating guarded hot-plate)	ISO 11092		0.030 m <sup>2</sup> *K/W (0.20 Clo)
Heat Resistance & Thermal Shrinkage	CAN/CGSB-155.22 Para 6.1	No melting, no dripping, no ignition Maximum 10% thermal shrinkage (each direction)	
Thermal Stability	NFPA 1975 Para 8.3	No melting, no ignition, no sticking with a maximum blocking resistance rating of 2, easy to separate layers	
Formaldehyde Release	AATCC 112		70 ppm
pH	CAN/CGSB-4.2 No. 74	5.5	8.5
Anti-bacterial assessment Initial After 20 Washes <sup>Note 1</sup>	ISO 20743	95% reduction 95% reduction	

Property	Test Method	Minimum Acceptable	Maximum Acceptable
Flame Resistance	ASTM D6413		After flame: 2 sec Damaged length: 152 mm (6 inches) No melting and no dripping
Thermal Protective Performance (with spacer)	CAN/CGSB-4.2 No. 78.1	8	

\* The mass requirement quoted is the range of nominal fabric mass expected to meet the requirements. Production tolerance must not exceed +/-10% of the nominal mass quoted by the contractor.

#### Testing Notes:

**Note 1:** Laundering conditions must be in accordance with CAN/CGSB-4.2 No.58 Test III E. When multiple wash cycles are specified, the last 2 wash cycles must be blanks: no detergent, soap, etc. - water only, cycles as specified.

**Note 2:** Section 10.4 of ASTM D2594 for loose fitting apparel fabrics (0-5lbf cycling) must be used. Equation 3 of Section 11.1.1 must be used to calculate Fabric Stretch (%). Additionally, Fabric Recovery (%) must be calculated as follows:

$$\text{Fabric recovery, \%} = 100 \times (A - (C - A)) / A$$

Where:

A = original distance between bench marks prior to force application

C = distance between bench marks following one (1) hour recovery after tension is released from the specimen.

**Note 3:** Observe the wicking behavior on the side of the fabric that would be worn next-to-skin in the finished garment. Intervals of 10 mm are to be marked along the specimen between the 20 mm and 150 mm lines. Record and report the time that it takes for the water to reach each marked interval. Terminate the test after 15 minutes and report the maximum wicking distance.

**Tableau I – Exigences pour Tissue, tricot, couche de base, résistant aux flammes, 200 g/m<sup>2</sup>**

Propriété	Méthode d'essai	Minimum acceptable	Maximum acceptable
Masse nominale	CAN/CGSB-4.2 No. 5.1	130 g/m <sup>2</sup>	230 g/m <sup>2</sup>
Changement dimensionnel au lavage (5 cycles)	CAN/CGSB-4.2 No. 58 IIIIE <sup>Note 1</sup>		Longueur: ± 5 % Largeur: ± 5 %
Solidité de la couleur au lavage	CAN/CGSB-4.2 No. 19.1 Essai n° 2		Changement de couleur : échelle de gris 4 Tachage : échelle de gris 4 (sauf nylon : échelle de gris 3)
Solidité de la couleur à la sueur	CAN/CGSB-4.2 No. 23		Changement de couleur : GS 4 Tachage : GS 4
Résistance au boulochage (après 3 heures)	CAN/CGSB-4.2 No. 51.1	3	
Résistance à l'éclatement	ASTM D3787	175 N	
Propriétés d'allongement Étirement	ASTM D2594 <sup>Note 2</sup>	Longueur : 35 % Largeur : 50 %	
Reprise de la forme – après 1 heure		Longueur : 90 % Largeur : 90 %	
Temps de séchage - après lavage (5 cycles)	AATCC 199 <sup>Note 1</sup>		180 min
Perméabilité à l'air	CAN/CGSB-4.2 No. 36	80 cm <sup>3</sup> /cm <sup>2</sup> /s	
Imbibition par capillarité – verticale	AATCC 197 Option A <sup>Note 3</sup>	Longueur: 7 cm en 15 minutes Largeur: 7 cm en 15 minutes	
Résistance thermique - R <sub>ct</sub> (essai de la plaque chaude gardée transpirante)	ISO 11092		0,030 m <sup>2</sup> *K/W (0,20 Clo)
Résistance à la chaleur et Retrait thermique	CAN/CGSB-155.22 art. 6.1	Pas de fusion, pas de gouttes, pas d'allumage Retrait thermique maximal de 10% (chaque direction)	
Stabilité thermique	NFPA 1975 art. 8.3	Pas de fusion, pas d'allumage, pas de collage, avec une résistance maximale au blocage de 2, faciles à séparer les couches	
Libération de formaldéhyde	AATCC 112		70 ppm
pH	CAN/CGSB-4.2 No. 74	5.5	8.5

Propriété	Méthode d'essai	Minimum acceptable	Maximum acceptable
Évaluation antibactérienne Initiale Après 20 lavages <sup>Note 1</sup>	ISO 20743	réduction de 95 % réduction de 95 %	
Resistance aux flammes	ASTM D6413		Flamme persistante moyenne: 2 sec Longueur moyenne endommagée: 152 mm (6 pouces) Pas de fusion, pas de gouttes
Efficacité de la protection thermique – avec espacement	CAN/CGSB-4.2 No. 78.1	8	

\* L'exigence de masse citée est la gamme de masse nominale de tissu prévu pour répondre aux exigences. La tolérance de production ne doit pas dépasser +/- 10% de la masse nominale indiquée par le entrepreneur.

#### Notes concernant les essais:

**Note 1:** Les conditions de lavage doivent être conformes à la norme CAN/CGSB-4.2, n° 58, méthode III E. Lorsque plusieurs cycles de lavage sont spécifiés, les deux derniers cycles de lavage doivent être à blanc : sans javellisant, sans lessive, etc. eau seulement, cycles comme il est indiqué.

**Note 2:** L'article 10.4 de ASTM 2594 relatif aux tissus pour les vêtements amples doit être utilisé (0-5 lb- $\pi$ ). L'équation 3 de l'article 11.1.1 doit être utilisée pour calculer l'étirement du tissu (%). De plus, les valeurs de la reprise de la forme du tissu doivent être calculées comme suit :

$$\% \text{ de reprise de la forme du tissu} = 100 \times (A - (C - A)) / A$$

Où :

A = distance initiale entre les points de référence avant l'application d'une force;

C = distance entre les points de référence après un temps de reprise d'une (1) heure une fois la traction relâchée.

**Note 3:** Observer le comportement de l'imbibition par capillarité sur le côté du tissu qui serait porté à côté de la peau dans le vêtement fini. Des intervalles de 10 mm doivent être marqués le long de l'échantillon entre les lignes de 20 mm et de 150 mm. Enregistrez le temps qu'il faut pour que l'eau atteigne chaque intervalle marqué. Terminez le test après 15 minutes et enregistrez la distance maximale de l'imbibition par capillarité.



This documentation has been reviewed by the technical authority and does not contain controlled goods. Disclosure notices and handling instructions originally received with the document shall continue to apply.

NOTICE

**Bid Technical Evaluation Plan  
Shirt, Light Weight, Heavy Weight and Pants,  
Advanced Search and Rescue Uniform (ASARU)**

**1. SCOPE**

**1.1 PURPOSE.** The purpose of this document is to describe how the Department of National Defence (DND) will perform the Bid Technical Evaluation for the Advanced Search and Rescue Uniform (ASARU).

**1.2 GENERAL METHOD.** The Bid Technical Evaluation of the ASARU will be conducted by a team of DND Subject Matter Experts (SMEs). They will examine the documentary and physical evidence provided by the bidder to confirm compliance with all the requirements detailed in the Request for Proposal and supporting annexes.

**2. TECHNICAL EVALUATION METHOD**

**2.1 CONTEXT.** The Technical Evaluation methodology detailed below will be used to determine all the technically compliant bids.

**2.2 TECHNICAL BID EVALUATION METHODOLOGY**

**2.2.1 OUTLINE.** Technical evaluation will be conducted in two phases designed to ensure technical compliance with the requirement.

**2.2.1.1 PHASE 1.** The evaluators will examine the provided documentary evidence, as detailed in Table 1, which will include the appropriate test results from accredited independent laboratories in order to determine the conformance of materials to the mandated specifications outlined in Annex J. Non-compliant bids will not be considered further.

**2.2.1.2 PHASE 2.** The evaluators will examine the provided physical samples for the quality of workmanship and for conformance to specified materials and measurements outlined in Annexes C, D and E. Non-compliant bids will not be considered further.

**2.3 SPECIFIC**

**2.3.1 DOCUMENTARY EVIDENCE/ BID SAMPLES.** The following documentary evidence and bid samples must be submitted with the bid.

**Table 1 – Documentary Evidence and Physical Samples to be submitted**

Requirement
Test results as detailed in Annex J
Textile Samples as detailed in Annex J



One (1) sample of the Shirt, Light Weight, ASARU in size 7040.
One (1) sample of the Shirt, Heavy Weight, ASARU in size 7040.
One (1) sample of the Pants, ASARU in size 7034.

**2.3.2** WORKMANSHIP AND CONSTRUCTION EVALUATION. The quality of workmanship and construction will be evaluated using the criteria outlined in Table 2.

**2.3.3** MATERIAL SUBSTITUTIONS. In the event that a component (**excluding the textiles identified in Annex J that require yardage/samples**) that may include items such as hook and loop fastener, slide fastener and cord, is not available to the bidder in the time frame to manufacture the physical samples, the bidder may use a similar substitute component, on the condition that a letter addressing the substitution is submitted with the bid samples, together with a statement that, should the bidder be awarded the contract, all materials will be strictly in accordance with the technical requirement outlined in Annex C, D and E.

**3. DEFINITIONS**

- 3.1** DEVIATION. A deviation is defined a failure to meet an essential performance or design requirement outlined in Annexes C, D and E.
- 3.2** INFRACTION. An infraction is defined as a workmanship or construction issue evaluated to directly affect the serviceability of the garment.
- 3.3** OBSERVATION. An observation is defined as a workmanship or construction issue evaluated to be non-compliant that does not necessarily affect serviceability of the garment but affects overall quality assurance.

**4. NON-COMPLIANCE CRITERIA**

- 4.1** DEVIATIONS. Samples must have no deviations. Samples evaluated to contain a single workmanship or construction deviation will be deemed non-compliant.
- 4.2** INFRACTIONS. A maximum of three (3) workmanship and construction infractions will be accepted. Samples evaluated to contain more than three (3) infractions will be deemed non-compliant. Infractions noted and referenced in the Bid Technical Evaluation must be corrected at pre-production.

**4.3 OBSERVATIONS.** Observations will not impact compliance. However, observations noted and referenced must be corrected at pre-production. **Workmanship or construction issues found with the submission not listed in Table 2 will be deemed as an observation.**

**Table 2 – Workmanship and Construction Evaluation**

Detail	Reference			Criteria	Classification of Infraction <sup>1</sup>		
	Annex C (LW Shirt)	Annex D (HW Shirt)	Annex E (Pants)		Deviation	Infraction	Observation
Cutting	3.3	3.3	3.3	Shell parts of the LW Shirt, HW Shirt and Pants are not cut in the direction of the warp as shown on the paper patterns.			X
				Outer shell parts of the LW Shirt, HW Shirt and Pants are not cut of the same piece of material.			X
Sewing	3.4	3.4	3.4	<ul style="list-style-type: none"> <li>Seams twisted, pleated, or puckered;</li> <li>Part of the ensemble caught in any unrelated operation or stitching;</li> <li>Thread breaks not secured;</li> <li>Cut threads or holes showing evidence of reworking</li> </ul>		X	
				<ul style="list-style-type: none"> <li>Ends of seams and stitches (when not caught in other seams or stitching) not back stitched or bartacked;</li> <li>Sewing defects causing open seams of more than ¼ inch (0.635 cm);</li> <li>Thread colour is not in accordance with that specified</li> </ul>		X	
				<ul style="list-style-type: none"> <li>Gauge of stitching uneven (seams, hems or top stitching);</li> <li>Stitch tension:               <ol style="list-style-type: none"> <li>Loose tension in any area more than 2-inches;</li> <li>Tight tension (stitches break when normal strain is applied to the seam or stitching);</li> </ol> </li> </ul>		X	

<sup>1</sup>The classification of “infraction” is for the purposes of evaluation only.

Detail	Reference			Criteria	Classification of Infraction <sup>1</sup>		
	Annex C (LW Shirt)	Annex D (HW Shirt)	Annex E (Pants)		Deviation	Infraction	Observation
Hook and Loop Fastener Tape	3.4.10	3.4.9	3.4.9	<ul style="list-style-type: none"> <li>Hook and loop fastener tape is not stitched and positioned as detailed in para 3.5 Construction;</li> <li>Stitching is not formed into the hook and loop portion of the tape;</li> <li>Hook and loop is not positioned to effect proper closure of assembly (i.e. non-functional).</li> </ul>			X
Bartacks	3.4.12	3.4.10	3.4.10	<ul style="list-style-type: none"> <li>Bartacks are not positioned as detailed in para 3.7 Construction or as show on applicable Figures;</li> <li>Insecure bartacks or not serving intended purpose;</li> <li>Loose, incomplete or broken stitches.</li> </ul>			X
Button and Strap Assembly	n/a	3.2.6, 3.2.8	n/a	<ul style="list-style-type: none"> <li>Buttons and loops are not positioned to effect closure.</li> </ul>			X
Scale of Measurements	3.6	3.6	3.6	<ul style="list-style-type: none"> <li>Measurements out of tolerance from that detailed in the Scale of Measurements (Appendix I).</li> </ul>		X	
Component Measurements	3.6	3.6	3.6	<ul style="list-style-type: none"> <li>Measurements with tolerances exceeding <b>plus or minus</b> 1/4-inch (6.35 mm) from that detailed in applicable Figures. This includes, but is not limited to, positioning on garment and functional lengths.</li> </ul>		X	
Marking, Care, and User Labels	3.7, 3.8	3.7, 3.8	3.7, 3.8	<ul style="list-style-type: none"> <li>Labeling omitted, incorrect, illegible, or incomplete.</li> </ul>			X

Detail	Reference			Criteria	Classification of Infraction <sup>1</sup>		
	Annex C (LW Shirt)	Annex D (HW Shirt)	Annex E (Pants)		Deviation	Infraction	Observation
Construction - General	3.5	3.5	3.5	<ul style="list-style-type: none"> <li>Thread ends not trimmed throughout the garment;</li> <li>Needle chews likely to develop into a hole;</li> <li>Components missing or wrong size of component used;</li> <li>Cuts, tears, holes, mends, lumps, creases, weak places, or other deficiencies seriously affected serviceability;</li> <li>Any operation improperly performed.</li> </ul>			X
Construction - General	n/a	n/a	3.5	<ul style="list-style-type: none"> <li>Any draw cord caught in the hem, casing, or tunnel stitching restricting the functionality of the assembly;</li> <li>Any draw cord ends not knotted and/or fused;</li> <li>Any draw cord insufficient in length for function.</li> </ul>			X
Construction - General	3.5	3.5	3.5	<ul style="list-style-type: none"> <li>Any part of slide fastener assembly bent, broken, or otherwise defective;</li> <li>Any part of the slide fastener not attached to the assembly.</li> </ul>			X



NOTICE

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AVIS

Cette documentation a été révisée par l'autorité technique et ne contient pas de marchandises contrôlées. Les avis de divulgation et les instructions de manutention reçues originellement doivent continuer de s'appliquer.

## **Pre-Production and Production Technical Validation Plan Shirt, Light Weight, Heavy Weight and Pants, Advanced Search and Rescue Uniform (ASARU)**

## 1.0 SCOPE

**1.1 PURPOSE.** The purpose of this document is to describe how The Department of National Defence (DND) will perform the pre-production validation of the Advanced Search and Rescue Uniform (ASARU).

**1.2 GENERAL METHOD.** The DND Technical Authority (TA) will examine the contractor provided documentary and physical evidence to confirm compliance with the requirements detailed in the contract and its annexes.

## 2.0 EVALUATION METHOD

**2.1 PRE-PRODUCTION.** The TA will validate the Contractor provided documentation and physical samples.

**2.1.1 DOCUMENTATION.** The Contractor must submit all contract mandated documentation including the test results and certificates of compliance outlined in Tables I, II and III.

**Table 1 – Mandatory Pre-Production Material Testing Documentation – Shirt Lightweight**

Material	Reference	Requirement and Reference	Testing Requirements and Frequency	
			Pre-Production	
Slide Fasteners	Annex C, 3.2.5	<b>ALL SLIDE FASTENERS</b> must in accordance with D-83-001-005/SF-001 and all other requirements specified in Annex C, para 3.2.5.	Certificate of Compliance showing applicable information from the source of supply.	

**Table 2 – Mandatory Pre-Production Material Testing Documentation – Shirt Heavy weight**

Material	Reference	Requirement and Reference	Testing Requirements and Frequency	
			Pre-Production	
Slide Fasteners	Annex D, para 3.2.4	<b>ALL SLIDE FASTENERS</b> must in accordance with D-83-001-005/SF-001 and all other requirements specified in Annex D, para 3.2.4.	Certificate of Compliance showing applicable information from the source of supply.	
Buttons	Annex D, para 3.2.6	<b>BUTTONS</b> must in accordance with CF-B-854, Drawings 373118 and all other requirements specified in Annex D, para 3.2.6	Certificate of Compliance showing applicable information from the source of supply.	

**Table 3 – Mandatory Pre-Production Material Testing Documentation - Pants**

Material	Reference	Requirement and Reference	Testing Requirements and Frequency	
			Pre-Production	
Slide Fastener	Annex E, para 3.2.4	<b>SLIDE FASTENER</b> must be in accordance with D-83-001-005/SF-001 and all other requirements specified in Annex E, para 3.2.4.	Certificate of Compliance showing applicable information from the source of supply.	
Drop Cord	Annex E para 3.2.6	<b>DROP CORD</b> must be in accordance with Annex E, para 3.2.6, Table II.	Certificate of Compliance showing applicable information from the source of supply.	
Cord Lock	Annex E, para 3.2.7	<b>DRAWCORD LOCK</b> must be in accordance with Annex E, para 3.2.7	Certificate of Compliance showing applicable information from the source of supply.	
Cord end	Annex E, para 3.2.8	<b>CORD END</b> must be in accordance with Annex E, para 3.2.8.	Certificate of Compliance showing applicable information from the source of supply.	

**2.1.2** PHYSICAL SAMPLES. The Contractor must submit the pre-production samples listed in Table IV:

**Table 4 – Physical Samples to be submitted at Pre-Production**

Time Period	Requirement
Pre-Production Stage	Patterns as detailed in Annex K
Pre-Production Stage	One (1) sample of the Shirt, Light Weight, ASARU in size 7040.
Pre-Production Stage	One (1) sample of the Shirt, Heavy Weight, ASARU in size 7040.
Pre-Production Stage	One (1) sample of the Pants, ASARU in size 7034.

**2.1.3** MATERIAL SUBSTITUTIONS. No material substitutions allowed at the Pre-Production Stage. All materials must be strictly in accordance with the technical requirements outlined in **Annexes C, D, E, F and G.**

**2.1.4 WORKMANSHIP AND CONSTRUCTION VALIDATION.** Workmanship and construction of the sample will be evaluated using the criteria outlined in Table V.

**2.1.5 VALIDATION CRITERIA DEFINITIONS.** The following definitions will be applied to the sample validation.

**2.1.5.1 DEVIATION.** A deviation is defined as a failure to meet an essential performance or design requirement outlined in Annexes C, D and E. Samples must have no Deviations. Samples evaluated to contain a single workmanship or construction deviation will be deemed non-compliant and the Contractor will be required to produce a new pre-production sample within a specified time period.

**2.1.5.2 INFRACTION.** An infraction is defined as a workmanship or construction issue evaluated to directly affect the serviceability of the garment. A maximum of three (3) workmanship and construction infractions will be accepted. Samples evaluated to contain more than three (3) infractions will be deemed non-compliant and the Contractor will be required to produce a new pre-production sample within a specified time period.

**2.1.5.3 OBSERVATION.** An observation is defined as a workmanship or construction issue that does not necessarily affect serviceability of the garment but affects overall quality assurance. Observations will not impact compliance. However, observations noted and referenced in the pre-production evaluation must be corrected at production. **Workmanship or construction issues found with the submission not listed in Table V will be deemed as an observation.**

**Table 5 – Workmanship and Construction Evaluation**

Detail	Reference			Classification of Infraction <sup>1</sup>		
	Annex C (LW Shirt)	Annex D (HW Shirt)	Annex E (Pants)	Deviation	Infraction	Observation
Cutting	3.3	3.3	3.3			X
						X

<sup>1</sup>The classification of “infraction” is for the purposes of evaluation only.



Detail	Reference			Criteria	Classification of Infraction <sup>1</sup>		
	Annex C (LW Shirt)	Annex D (HW Shirt)	Annex E (Pants)		Deviation	Infraction	Observation
Sewing				<ul style="list-style-type: none"> <li>Seams twisted, pleated, or puckered;</li> <li>Part of the ensemble caught in any unrelated operation or stitching;</li> <li>Thread breaks not secured;</li> <li>Cut threads or holes showing evidence of reworking</li> </ul>		X	
	3.4	3.4	3.4	<ul style="list-style-type: none"> <li>Ends of seams and stitches (when not caught in other seams or stitching) not back stitched or bartacked;</li> <li>Sewing defects causing open seams of more than ¼ inch (0.635 cm).</li> <li>Thread colour is not in accordance with that specified</li> </ul>		X	
				<ul style="list-style-type: none"> <li>Gauge of stitching uneven (seams, hems or top stitching);</li> <li>Stitch tension:               <ol style="list-style-type: none"> <li>Loose tension in any area more than 2-inches;</li> <li>Tight tension (stitches break when normal strain is applied to the seam or stitching);</li> </ol> </li> </ul>		X	
				<ul style="list-style-type: none"> <li>Hook and loop fastener tape is not stitched and positioned as detailed in para 3.7 Construction;</li> <li>Stitching is not formed into the hook and loop portion of the tape; and</li> <li>Hook and loop is not positioned to effect proper closure of assembly (i.e. non-functional).</li> </ul>			X
Bartacks	3.4.10	3.4.9	3.4.9	<ul style="list-style-type: none"> <li>Bartacks are not positioned as detailed in para 3.7 Construction or as show on applicable Figures;</li> <li>Insecure bartacks or not serving intended purpose;</li> <li>Loose, incomplete or broken stitches.</li> </ul>			X
Button and Strap Assembly	n/a	3.2.6, 3.2.8	n/a	<ul style="list-style-type: none"> <li>Buttons and loops are not positioned to effect closure.</li> </ul>			X

Detail	Reference			Criteria	Classification of Infraction <sup>1</sup>		
	Annex C (LW Shirt)	Annex D (HW Shirt)	Annex E (Pants)		Deviation	Infraction	Observation
Scale of Measurements	3.6	3.6	3.6	<ul style="list-style-type: none"> <li>Measurements out of tolerance from that detailed in the Scale of Measurements (Table I).</li> </ul>		X	
Component Measurements	3.6	3.6	3.6	<ul style="list-style-type: none"> <li>Measurements with tolerances exceeding <b>plus or minus</b> 1/4-inch (6.35 mm) from that detailed in applicable Figures. This includes, but is not limited to, positioning on garment and functional lengths.</li> </ul>		X	
Marking, Care, and User Labels	3.7, 3.8	3.7, 3.8	3.7, 3.8	<ul style="list-style-type: none"> <li>Labeling omitted, incorrect, illegible, or incomplete.</li> </ul>			X
Construction - General	3.5	3.5	3.5	<ul style="list-style-type: none"> <li>Thread ends not trimmed throughout the garment;</li> <li>Needle chews likely to develop into a hole;</li> <li>Components missing or wrong size of component used;</li> <li>Cuts, tears, holes, mends, lumps, creases, weak places, or other deficiencies seriously affected serviceability;</li> <li>Any operation improperly performed.</li> </ul>			X
Construction - General	n/a	n/a	3.5	<ul style="list-style-type: none"> <li>Any draw cord caught in the hem, casing, or tunnel stitching restricting the functionality of the assembly;</li> <li>Any draw cord ends not knotted and/or fused;</li> <li>Any draw cord insufficient in length for function.</li> </ul>			X
Construction - General	3.5	3.5	3.5	<ul style="list-style-type: none"> <li>Any part of slide fastener assembly bent, broken, or otherwise defective;</li> <li>Any part of the slide fastener not attached to the assembly.</li> </ul>			X

**2.2 PRODUCTION.** At the discretion of the DND Quality Assurance Representative (DNQAR), the Government of Canada reserves the right to conduct a validation inspection throughout the production period on delivered product to confirm a Contractor's continued ability to meet the mandated technical specifications. In addition to this general validation requirement, production samples may be requested as per Table 6 below:

**Table 6**

Time Period	Requirement
Production Stage	One (1) sample of the Shirt, Light Weight, ASARU in size 7040
Production Stage	One (1) sample of the Shirt, Heavy Weight, ASARU in size 7040
Production Stage	One (1) sample of the Pants, ASARU in size 7034

**2.2.1 LABORATORY ANALYSIS.** In addition, laboratory analysis in accordance with those requirements detailed in Annex J shall be submitted.



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**Pre-Award, Pre-Production and Production  
Textile Testing Requirements**

1. Fabric Samples, tests and test results will be required for each textile at the frequency stated below before the material is delivered to Canada, or put into garment production when contractor supplied textile.
2. All tests and test methods must be in accordance with the specified requirements. All testing must be conducted by an accredited independent laboratory familiar with textile testing. Testing carried out by university textile testing laboratories and NATO member nation government laboratories will also be acceptable. Should a non-accredited laboratory be required for specific tests, approval must be sought and received in writing from the Technical Authority, DSSPM 2-2 in advance.
3. The test interval is subject to change. It may be increased or decreased at the discretion of DND. DND may also request additional tests and samples at any time.
4. When a fabric sample is required, the sample must be clearly identified and traceable to production lots and part or reference numbers. The contractor must provide the QA documentation to assure the fact that the test results submitted were obtained on fabric from the same production as the submitted sample.
5. When requested, a Manufacturer's Technical Data sheet must provide representative data for

**Essais de textiles – Exigences préalables à  
l'adjudication et exigences relatives à la présérie  
et à la production**

1. Échantillons de tissu, des essais et des résultats d'essai seront exigés pour chaque textile à la fréquence prescrite ci-dessous avant que le tissu soit livré au gouvernement, ou avant qu'il puisse être utilisé pour la production du vêtement quand le tissu en question est fourni par l'entrepreneur.
2. Tous les essais et toutes les méthodes d'essai doivent être conformes aux exigences prescrites. Les essais doivent être menés par un laboratoire indépendant accrédité ayant une bonne expérience des essais textiles. Les essais réalisés par des laboratoires universitaires effectuant des essais textiles et les laboratoires du gouvernement membre de l'OTAN seront aussi acceptables. Si un laboratoire non accrédité menait certains essais, il faudrait obtenir au préalable l'autorisation écrite de l'autorité technique, DAPES 2-11.
3. La fréquence des essais peut être modifiée, soit augmentée ou diminuée, à la discrétion du MDN. Le MDN peut aussi exiger d'autres essais et échantillons en tout temps.
4. Lorsqu'un échantillon de tissu est nécessaire, il doit être clairement identifié et être traçable aux lots de production et au numéro de la partie ou du référence. L'entrepreneur doit fournir la documentation d'assurance de la qualité garantissant que les résultats des essais présentés ont été obtenus avec le tissu provenant du même lot de production que l'échantillon soumis.
5. Sur demande, une fiche technique du fabricant doit fournir des données représentatives pour le

the product proposed and must be applicable to the sample submitted for evaluation.

produit proposé et doit être applicable à l'échantillon soumis pour évaluation.

**6.** Reporting of test results for all properties may not be required at all stages, however, it is mandatory that the requirements be met in accordance with the applicable specification in its entirety. Canada reserves the right to carry out testing of any specified property in order to confirm the compliance of the fabric with the applicable specification in its entirety.

**6.** Même s'il n'est parfois pas nécessaire de présenter un rapport sur les résultats d'essai pour certains articles, il est obligatoire que les exigences soient respectées conformément à la spécification applicable dans sa totalité. Le Canada se réserve le droit de mettre à l'essai n'importe laquelle des propriétés afin de s'assurer de la conformité du tissu à toutes les exigences de la spécification applicable.

**7.** The pre-production testing and sample must be from the production that is intended for use in this current contract, so are production samples and testing. The pre-production samples must be representative of the finished product in all respects.

**7.** Les résultats d'essai et l'échantillon de la pré-production, de même que les résultats d'essai et les échantillons de production, doivent provenir du tissu que l'entrepreneur prévoit utiliser pour le présent contrat. Les échantillons de présérie doivent être représentatifs du produit fini sous tous les rapports.

**8.** Complete test results must be submitted before the material is put into garment production when there is any change in the source of supply for the material. Department of National Defence (DND) written approval is required prior to using any material from a new supplier.

**8.** Les résultats complets des essais doivent être soumis avant que le tissu soit utilisé pour la production du vêtement en cas de changement de la source d'approvisionnement. L'approbation écrite du ministère de la Défense nationale (le MDN) est nécessaire avant d'utiliser un matériau provenant d'un nouveau fournisseur.

**9.** When there is any change in the source of supply, complete test results must be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.

**9.** Les résultats complets des essais doivent être soumis avant que le tissu soit utilisé pour la production du vêtement en cas de changement de la source d'approvisionnement. L'approbation écrite du ministère de la Défense nationale (le MDN) est nécessaire avant d'utiliser un matériau provenant d'un nouveau fournisseur.

**10.** If Options on the contract are exercised two (2) meter full width samples of each fabric and the associated full test results in accordance with the applicable specification in its entirety must be submitted prior to delivery of options quantities. Production requirements apply for the duration of the Options period.

**10.** Si les options sur le contrat sont exercées, pour chaque tissu, un échantillon de largeur totale de deux (2) mètres et ses résultats de test complets associés conformément à la spécification applicable dans sa totalité doit être soumis avant la livraison des quantités d'options. Les exigences de production sont applicables pour la durée de la période des options.

**11.** The following textile testing requirements apply throughout the duration of the contract at the frequency stated below.

Testing Requirements and Frequency				
Fabric	Requirement	Pre-Award	Pre-Production	Production
Cloth, Twill, Aramid/FR Viscose, 185 g/m <sup>2</sup> , SAR International Orange <sup>Note 1</sup>	DSSPM 2-2-80-239 DCGEM 263-78 for colour	- Full testing - Half (0.5) meter full width fabric sample	- Full testing before garment production begins - One (1) meter full width fabric sample	- Full testing every 15,000 meters of fabric production, or part thereof, or when supplier changes - One (1) meter full width fabric sample
Cloth, Knit, Base Layer, Flame Resistant, 200 g/m <sup>2</sup> , Tan	DSSPM 2-2-80-249	- Full testing - Half (0.5) meter full width fabric sample	- Full testing before garment production begins - One (1) meter full width fabric sample	- Full testing every 15,000 meters of fabric production, or part thereof, or when supplier changes - One (1) meter full width fabric sample
Cloth, Stretch, Knit or Woven, SAR International Orange or Tan	DSSPM 2-6-87-0479 (3.4.2)	- Manufacturer's Technical Data Sheet <sup>Note 2</sup> - Half (0.5) meter full width fabric sample	- Manufacturer's Technical Data Sheet <sup>Note 2</sup> - One (1) meter full width fabric sample	

**Note 1 At Pre-Award only:** If the proposed product is not available in the specified colour, in addition to the required fabric samples for fabric construction evaluation, which may be any colour, a lab sample of the specified colour on the required fabric must be submitted. This lab sample may be a lab dyed swatch of the required colour in the correct fabric construction, OR, if producer coloured fibre is proposed, it may be a batt (1 gram) of the producer colour fibre, a finger skein of the yarn, or a fabric swatch of the required colour in a similar fabric construction. All producer coloured fibre samples must consist of the specified fibre composition. Where the fabric construction sample provided at pre-award is an alternate colour, the requirement for colourfastness testing for that sample is waived.

**Note 2 The Manufacturer's Technical Data Sheet** must provide technical information to demonstrate that the product proposed/supplied meets the specified requirements. The Technical Data Sheet must report test results or performance levels that are representative of the product. The document must be current. Test methods/procedures used to obtain results report must be referenced. It may be an internal document Canada reserves the right to verify the statements made in the Technical Data Sheet. Full test results, demonstrating the product's compliance, will be accepted in lieu of a Technical Data Sheet.

**11.** Les exigences relatives aux essais textiles suivants s'appliquent pendant toute la durée du contrat à la fréquence indiquée ci-dessous.

Exigences de test et fréquence				
Tissu	Exigences	Pré-adjudication	Pré-production	Production
Tissu à armure sergé, aramide/rayonne résistant aux flammes, 185 g/m <sup>2</sup> , SAR orange international <sup>Note 1</sup>	DSSPM 2-2-80-239 DCGEM 263-78 pour le couleur	- Essais complets - 0.5 mètre de tissu, échantillon de pleine largeur	- Essais complets avant la production du vêtement - Un (1) mètre de tissu, échantillon de pleine largeur	- Essais complets de tous les 15 000 mètres de production de tissus, ou d'une partie de ceux-ci, ou lorsque le fournisseur change - Un (1) mètre de tissu, échantillon de pleine largeur
Tissu, tricot, couche de base, résistant aux flammes, 200 g/m <sup>2</sup> , havane	DSSPM 2-2-80-249	- Essais complets - 0.5 mètre de tissu, échantillon de pleine largeur	- Essais complets avant la production du vêtement - Un (1) mètre de tissu, échantillon de pleine largeur	- Essais complets de tous les 15 000 mètres de production de tissus, ou d'une partie de ceux-ci, ou lorsque le fournisseur change - Un (1) mètre de tissu, échantillon de pleine largeur
Tissu, extensible, tricot ou tissé, SAR orange international ou havane	DSSPM 2-6-87-0479 (3.4.2)	- une fiche technique du fabricant <sup>Note 2</sup> - 0.5 mètre de tissu, échantillon de pleine largeur	- une fiche technique du fabricant <sup>Note 2</sup> - Un (1) mètre de tissu, échantillon de pleine largeur	

**Note 1 : À pré-adjudication :** Si le produit proposé n'est pas disponible dans la couleur spécifiée, en plus des échantillons de tissu requis pour l'évaluation de la construction du tissu, qui peut être n'importe quelle couleur, un échantillon de laboratoire de teinture de la couleur indiquée sur le tissu requis doit être soumis. Cet échantillon de couleur peut être un échantillon du tissu de construction adéquate teint en laboratoire de la couleur requise OU si les fibres teintées du fabricant sont fournies, il peut s'agir d'un nappage des fibres teintées du fabricant (1 gram), d'un écheveau de fil ou d'un échantillon de tissu d'une construction semblable de la couleur requise. Tous les échantillons de fibres teintées du fabricant doivent respecter la teneur en fibres requise. Lorsque l'échantillon de tissu soumis pour l'évaluation de la construction est une autre couleur, l'exigence pour les tests de solidité des couleurs pour cet échantillon est levée.

**Note 2 : La fiche technique du fabricant** doit fournir des informations techniques démontrant que le produit proposé / fourni répond aux exigences spécifiées. La fiche technique doit indiquer les résultats des tests ou les niveaux de performance représentatifs du produit. Le document doit être actuel. Les méthodes / procédures d'essai utilisées pour obtenir les résultats déclarés doivent être référencées. Ce peut être un document interne. Le Canada se réserve le droit de vérifier les déclarations faites dans la fiche technique. Les résultats complets des tests, démontrant la conformité du produit, seront acceptés à la place d'une fiche technique.

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**Pattern Submission Requirements for Pre-production and Production**

1. **PURPOSE.** The purpose of this Annex is to identify the requirements for the patterns that the contractor must provide as a deliverable to the contract.

2. **PATTERNS**

2.1. The term "Pattern" is defined as the combination of fully graded Patterns and the complete Grade Rule Table to reflect one item (i.e.: Item A: shirt = 1 Pattern includes one electronic pattern with all sizes fully graded).

2.2. The Patterns must be delivered with all internal information including Seam Allowance, Grain Lines, Notches, Internal Lines, Internal Messages, Piece List and any other information as required to reproduce the patterns. If the seam allowance is not 3/8", seam lines must be indicated on the patterns.

2.3. The patterns delivered must match the sizes in the Scales of Measurement.

3. **DELIVERY REQUIREMENTS.** The contractor must deliver the patterns in the quantities and formats described below:

3.1. ELECTRONIC PATTERNS.

- a. The preferred electronic format is to be in Gerber Accumark.zip format; and
- b. The alternate format is AAMA.dxf for the patterns and AAMA.rul for the Rule Table.

3.2. PAPER PATTERNS:

- a. One copy of the master size in paper format; and
- b. One copy of the graded nests in each height group.



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## Special Size Requirements

**1. PURPOSE.** The purpose of this Annex is to describe the requirements to be met by the Contractor when a special size is requested by Department of National Defence (DND).

### 2. SPECIAL SIZES

2.1. The term “special size” is defined as those sizes outside the realm of the scale of measurements in order to obtain a proper fit. When the contractor is requested to provide a special size, DND will supply the following body measurements with the order:

- a. Height without shoes;
- b. Chest / bust circumference;
- c. Waist circumference;
- d. Hip circumference (women only);
- e. Neck circumference;
- f. Sleeve length;
- g. Inseam; and
- h. Alteration notes, if required.

2.2. The Contractor must create any paper patterns required for special size garments.

2.3. Special size garments must be made in full technical compliance with the technical data included as annexes to this requisition. Please refer to Annexes C, D and E for the NATO Stock Number for the special size.