

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 0A1 / Noyau 0A1
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

Title - Sujet SHIRTS, HOT WEATHER, HYBRID	
Solicitation No. - N° de l'invitation W8476-134002/A	Date 2012-12-05
Client Reference No. - N° de référence du client W8476-134002	
GETS Reference No. - N° de référence de SEAG PW-\$\$PR-707-61699	
File No. - N° de dossier pr707.W8476-134002	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2013-01-31	
Time Zone Fuseau horaire Eastern Standard Time EST	
F.O.B. - F.A.B. Specified Herein - Précisé dans les présentes Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input checked="" type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Elder, Sylvie	Buyer Id - Id de l'acheteur pr707
Telephone No. - N° de téléphone (819) 956-3830 ()	FAX No. - N° de FAX (819) 956-5454
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: See herein	

Instructions: See Herein

Instructions: Voir aux présentes

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
6B1, Place du Portage
Gatineau, Québec K1A 0S5

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

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Annex B- Manufacturing Data for shirt, hot weather hybrid DSSPM 2-6-87-8832, dated September 2009, revised October 2, 2012

Annex C- DSSPM 2-2-80-500 Specification for CADPAT™ TW, dated 31 January 2012

Annex D- DSSPM 2-2-80-501 Specification for CADPAT™ AR, dated 01 March 2012

Annex E DSSPM 2-2-80-239 Specification for cloth, twill aramid/FR viscose, 185g/m² dated 27 January 2011

Annex F- DSSPM 2-2-80-248 Specification for cloth, knit jersey, 60/40 cotton/nylon, 130g/m² dated 28 August 2012

Annex G –Pre-award, Pre-production, and Production requirements shirt, hot weather hybrid, dated October 2012

Annex H – Pre-award, pre-production and production textiles testing requirements, dated 10 October 2012

Annex I – Requirement for Special Sizes, dated October 2012

Annex J –Size Roll, dated August 2012

Annex K- CFTPO general- Canadian Forces Transportation Packaging Order, dated 15 July 2011

PART 1 - GENERAL INFORMATION

1. SECURITY REQUIREMENT

There is no security requirement associated with the requirement.

2. REQUIREMENT

The "Requirement" is detailed Annex A of the resulting contract clauses.

3. DEBRIEFINGS

After contract award, 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 of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

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>) 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 (2012-11-19) 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: sixty (60) calendar days

Insert: one hundred and twenty (120) calendar days

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.

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 questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

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.

5. TECHNICAL DATA AND SAMPLES

Technical data and sample (if applicable) may be viewed (by appointment only) at the following offices:

Public Works & Government Services Canada
Supply Directorate
6th floor
1550 ave D'Estimauville
Quebec, Que. G1J 0C7
TEL: 418-649-2840 or 418-649-2872
FAX: 418-648-2209

Public Works & Government Services Canada
Place Bonaventure, South-East Portal
800 de La Gauchetière Street West, 7th Floor
Montreal, Quebec H5A 1L6
TEL: 514-496-3404
FAX: 514-496-3822

Public Works & Government Services Canada
Suite 480, 33 City Centre Drive
Mississauga, Ont. L5B 2N5
TEL: 905-615-2070
FAX 905-615-2060

Public Works & Government Services Canada
Suite 100, 167 Lombard Avenue
P.O. Box 1408
Winnipeg, Manitoba R3C 2Z1
TEL: 204-983-3774
FAX: 204-983-7796

Public Works & Government Services Canada
Telus Plaza North
10025 Jasper Avenue, 5th Floor
Edmonton, AB T5J 1S6
TEL: (780) 497-3649
FAX: (780) 497-3510

6. SPECIFICATIONS AND STANDARDS**6.1 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

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

7. 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

1. BID PREPARATION INSTRUCTIONS

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

Section I - Technical Bid (2 hard copies)

Section II - Financial Bid (1 hard copy)

Section III - Certifications (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 are encouraged to:

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and/or 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 pre-award sample, Part 4, Evaluation Procedures, 1.1.1 Mandatory Technical Criteria).

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Goods and Services Tax (GST) is to be shown separately, if applicable.

1.1 Exchange Rate Fluctuation

C3011T 2010/01/11 Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

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. Canada may/will retain the services of private contractor(s), Amtek Engineering and Promaxis, who may/will participate in the evaluation process and within project requirement.

(c) If the evaluating team is missing technical information to complete the evaluation, the Contracting Authority will request the information which the bidder must submit by fax or e-mail within 2 working days from request. The documents should be dated no later than the Request for Proposal closing date. Failure to comply with the request within the specified timeframe will result in the bid being declared non-responsive.

1.1 TECHNICAL EVALUATION

1.1.1 MANDATORY TECHNICAL CRITERIA

PRE-AWARD SAMPLES AND SUPPORTING DOCUMENTATION

SHIRT SAMPLE AND TESTING

As part of the technical evaluation, to confirm a Bidder's capability of meeting the technical requirements, one (1) pre-award sample of the item in size medium in Canadian Disruptive Pattern (CADPAT™ (AR)) manufactured in accordance with Annex B and test results listed at Annex H must be included with the bid.

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

The Bidder must deliver the required pre-award sample 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. Failure to submit the required pre-award sample, test results within the specified time frame will result in the bid being declared non-responsive. The samples submitted by the Bidder will remain the property of Canada.

Laboratory analysis of the product offered showing test results for specific tests listed at Annexes G and H must be provided with the pre-award sample. Testing must be performed by an independent accredited laboratory establishment and must be in accordance with the test methods detailed in the Requirement. The laboratory report must be dated within 6 months of the solicitation posting date. If a company has successfully supplied the cloth for a contract for this item within the past two years, then it is acceptable to submit the cloth sample and associated test data from that previous contract for pre-award evaluation

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

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

FABRIC SAMPLES AND TESTING

DSSPM 2-2-80-239 , Cloth, Twill, Aramid/FR, Viscose 185 g/m²

-One (1) meter full width fabric sample of each of the proposed products, in each CADPAT™ pattern is required.

-Full tests results including the specified results for CADPAT™ (TW) and CADPAT™ (AR) prints must be reported for each fabric.

DSSPM 2-2-80-248, Cloth, knit, jersey, 60/40 cotton/nylon, 130 g/m² Canadian Average Green and Light Sand

-One (1) meter full width fabric is required for each colour.

-Full tests results must be reported. Full tests results are not required for both colours, however, all tests related to colour properties are required for each colour

For the anti microbial product used, when treated in Canada a copy of the Pest Control Product Registration information is required. When treated outside of Canada the fabric must be registered with the *United States Environment Protection Act* in accordance with DSSPM 2-2-80-248, paragraph 3.2.7. Evidence of this registration must be submitted.

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.

1.2 FINANCIAL EVALUATION

1.2.1 MANDATORY FINANCIAL CRITERIA

- a) The Bidder must submit firm unit prices in Canadian dollars, GST extra, DDP (Montreal, Qc and Edmonton, Alb) 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 option and “as and when requested” quantities. The Bidder is requested to quote firm unit pricing at no more than two decimal points.

1.2.2 SACC MANUAL CLAUSE

A9033T 2012/07/16 Financial Capability

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, 100% of the option quantity and 100% of the “as and when requested” quantities.

For evaluation of the option, the cost will be evaluated by multiplying the maximum quantity (50,000) with the price given for year 1.

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.

(a) 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. 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.

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications to be awarded a contract. Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to Canada is subject to verification by Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

1. CERTIFICATIONS PRECEDENT TO CONTRACT AWARD

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

1.1 CODE OF CONDUCT

1.1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies, for himself and his affiliates, to be in compliance with the Code of Conduct and Certifications clause of the Standard instructions. The related documentation hereinafter mentioned will help Canada in confirming that the certifications are true. By submitting a bid, the Bidder certifies that it is aware, and that its affiliates are aware, that Canada may request additional information, certifications, consent forms and other evidentiary elements proving identity or eligibility. Canada may also verify the information provided by the Bidder, including the information relating to the acts or convictions specified herein, through independent research, use of any government resources or by contacting third parties. Canada will declare non-responsive any bid in respect of which the information requested is missing or inaccurate, or in respect of which the information contained in the certifications is found to be untrue, in any respect, by Canada. The Bidder and any of the Bidder's affiliates, will also be required to remain free and clear of any acts or convictions specified herein during the period of any contract arising from this bid solicitation.

Bidders who are incorporated, including those bidding as a joint venture, must provide with their bid or promptly thereafter a complete list of names of all individuals who are currently directors of the Bidder. Bidders bidding as sole proprietorship, including those bidding as a joint venture, must provide the name of the owner with their bid or promptly thereafter. Bidders bidding as societies, firms, partnerships or associations of persons do not need to provide lists of names. If the required names have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply will render the bid non-responsive. Providing the required names is a mandatory requirement for contract award.

Canada may, at any time, request that a Bidder provide properly completed and Signed Consent Forms (Consent to a Criminal Record Verification form- PWGSC-TPSGC 229)

<http://www.tpsgc-pwpsc.gc.ca/app-acq/forms/formulaires-forms-eng.html>) for any or all individuals aforementioned within the time specified. Failure to provide such Consent Forms within the time period provided will result in the bid being declared non-responsive.

1.2 FEDERAL CONTRACTORS PROGRAM - CERTIFICATION

1.2.1 FEDERAL CONTRACTORS PROGRAM - \$200,000 OR MORE

1. The Federal Contractors Program (FCP) requires that some suppliers, including a supplier who is a member of a joint venture, bidding for federal government contracts, valued at \$200,000 or more (including all applicable taxes), make a formal commitment to implement employment equity. This is a condition precedent to contract award. If the Bidder, or, if the Bidder is a joint venture and if any member of the joint venture, is subject to the FCP, evidence of its commitment must be provided before the award of the Contract.

Suppliers who have been declared ineligible contractors by Human Resources and Skills Development Canada (HRSDC) are no longer eligible to receive government contracts over the threshold for solicitation of bids as set out in the *Government Contract Regulations*. Suppliers may be declared ineligible contractors either as a result of a finding of non-compliance by HRSDC, or following their voluntary withdrawal from the FCP for a reason other than

the reduction of their workforce to less than 100 employees. Any bids from ineligible contractors, including a bid from a joint venture that has a member who is an ineligible contractor, will be declared non-responsive.

2. If the Bidder does not fall within the exceptions enumerated in 3.(a) or (b) below, or does not have a valid certificate number confirming its adherence to the FCP, the Bidder must fax (819-953-8768) a copy of the signed form LAB 1168, Certificate of Commitment to Implement Employment Equity, <http://www.servicecanada.gc.ca/cgi-bin/search/eforms/index.cgi?app=profile&form=lab1168&dept=sc&lang=e> to the Labour Branch of HRSDC.

3. The Bidder, or, if the Bidder is a joint venture the member of the joint venture, certifies its status with the FCP, as follows:

The Bidder or the member of the joint venture

- (a) () is not subject to the FCP, having a workforce of less than 100 full time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada;
- (b) () is not subject to the FCP, being a regulated employer under the *Employment Equity Act*, S.C. 1995, c. 44;
- (c) () is subject to the requirements of the FCP, having a workforce of 100 or more full time or part-time permanent employees, and/or temporary employees having worked 12 weeks or more in Canada, but has not previously obtained a certificate number from HRSDC, (having not bid on requirements of \$200,000 or more), in which case a duly signed certificate of commitment is attached;
- (d) () is subject to the FCP, and has a valid certificate number as follows: _____ (e.g. has not been declared an ineligible contractor by HRSDC).

Further information on the FCP is available on the following HRSDC Website:

<http://www.hrsdc.gc.ca/en/labour/equality/fcp/index.shtml>

1.3 CANADIAN CONTENT CERTIFICATION

SACC MANUAL CLAUSE

A3050T 2010/01/11 Canadian Content Definition

RULES OF ORIGIN - TEXTILES

With reference to the Canadian Content Certification clause, item on this solicitation are considered to be Canadian goods if they meet the following 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.

Solicitation No. - N° de l'invitation

W8476-134002/A

Amd. No. - N° de la modif.

File No. - N° du dossier

pr707W8476-134002

Buyer ID - Id de l'acheteur

pr707

CCC No./N° CCC - FMS No/ N° VME

W8476-134002

CANADIAN CONTENT CERTIFICATION

This procurement is limited to Canadian goods.

The Bidder certifies that:

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

PLANT LOCATION

Items will be manufactured at: _____

1.4 SAMPLES AND PRODUCTION CERTIFICATION

The Bidder certifies that:

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

PART 6 - RESULTING CONTRACT CLAUSES

1. SECURITY REQUIREMENT

There is no security requirement associated with the requirement.

2. REQUIREMENT

The Contractor must provide the items detailed the "Requirement" at Annex A.

3. STANDARD CLAUSES AND CONDITIONS

All instructions, 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.

3.1 General Conditions

2010A (2012/11/19), General Conditions - Goods (Medium complexity) apply to and form part of the Contract.

The text under Subsection 4 of Section 29 - Code of Conduct and Certifications Contract of 2010A referenced above is replaced by:

During the entire period of the Contract, the Contractor must diligently update, by written notice to the Contracting Authority, the list of names of all individuals who are directors of the Contractor whenever there is a change. As well, whenever requested by Canada, the Contractor must provide the corresponding Consent Forms.

4. TERM OF CONTRACT

4.1 Delivery Date

Delivery Required (Desirable) - Firm Quantity

All firm deliverables are requested complete 240 days after contract award.

Delivery - Firm Quantity - Phased

The first delivery must be made within 60 calendar days from the date of the written notice of approval of pre-production samples. The quantity delivered must be 1,000 each. The balance must be delivered at the rate of 2,000 each weekly after the first delivery until completion of the Contract.

The Crown reserves the right to amend the Size Roll (Annex J) for items 1 and 2 at no cost to the Crown. The Contractor will advise DND before the production quantity has reached the 70% threshold (25,550 shirts). DND will then advise the Contractor if the size roll has to be amended. If required a revised size roll will be provided to the contractor for the remaining 30% of the production.

A production priority list per size may be sent to the supplier after acceptance of the pre-production samples.

Delivery - Option Quantity

The delivery of the option quantity must commence within 60 calendar days from receipt of the contract amendment and after final delivery of the contract quantity. The quantity delivered must be 1,000 each. The balance must be shipped at a rate of 2,000 each weekly after the first delivery until completion of the option quantity.

4.1.1 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) 7 CF Supply Depot Lancaster Park
Edmonton, Alta
780-973-4011, ext. 4524

(b) 25 CF Supply Depot Montreal
Montreal, Qué.
514-252-2777, ext. 2363

4.1.2 Preparation for Delivery

The Contractor must prepare all items for delivery in accordance with Canadian Forces Transportation Packaging Orders as outlined at Annex K.

4.1.3 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 and Edmonton, Alb. Incoterms 2000 for shipments from commercial contractor.

4.2 SACC Manual Clauses

D5510C 2012/07/16 Quality Assurance Authority (DND) - Canadian-based Contractor
D5540C 2010/08/16 ISO 9001:2008 - Quality Management Systems - Requirements (QAC Q)
D5606C 2012/07/16 Release Documents (DND) - Canadian-based Contractor
D6010C 2007/11/30 Palletization

5. AUTHORITIES**5.1 Contracting Authority**

The Contracting Authority for the Contract is:

Sylvie Elder
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 : 819-956-3830 Facsimile: 819-956-5454
E-mail address: sylvie.elder@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.

5.2 Project Authority

The Project Authority for the Contract is:

Name: _____ (to be advised at contract)

Title: _____

Organization _____

Address _____

Telephone : _____ Facsimile: _____

E-mail address: _____

The Project 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 matter concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project 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.

5.3 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.

5.4 Procurement Authority

The Procurement Authority for the Contract is:

_____ (Name of Procurement Authority)

_____ (Title)

_____ (Organization)

_____ (Address)

Telephone: ____-____-____

Facsimile: ____-____-____

E-mail: _____ (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.

5.5 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. PAYMENT**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 Goods and Services Tax is extra, if applicable.

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.

6.2 SACC Manual Clauses

H1001C 2008/05/12 Multiple Payments

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. Invoices must be distributed as follows:

(a) The original and one (1) copy must be forwarded to the following address for certification and payment :

National Defence Headquarters
MGen George R. Pearkes Building
101 Colonel By Drive
Ottawa, ON K1A 0K2
Attn: DLP _____

(b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

(c) One (1) copy must be forwarded to the consignee and clearly stamped "COPY DO NOT PAY"

Note : The original invoice (PDF format) can be sent by e-mail to the DND Procurement Officer at julie.losier@forces.gc.ca or can be mailed to the above address and be stamped with the word "ORIGINAL" and the other copies must be stamped with the word "COPY".

7.1 Release Documents - Distribution

The Contractor must prepare the release documents in a current electronic format and distribute them as follows:

- (a) One (1) copy mailed to consignee marked: "Attention: Receipts Officer";
- (b) Two (2) copies with shipment (in a waterproof envelope) to the consignee;
- (c) One (1) copy to the Contracting Authority;
- (d) One (1) copy to:

National Defence Headquarters
Mgen George R. Pearkes Building
101 Colonel By Drive
Ottawa, ON K1A OK2
Attention: _____

- (e) One (1) copy to the Quality Assurance Representative;
- (f) One (1) copy to the Contractor; and
- (g) For all non-Canadian contractors, one (1) copy to:

DQA/Contract Administration
National Defence Headquarters
Mgen George R. Pearkes Building
101 Colonel By Drive
Ottawa, ON K1A OK2
E-mail: ContractAdmin.DQA@forces.gc.ca

Note : The original inspection document CF 1280 (PDF format) can be sent by e-mail to the DND Procurement Authority julie.losier@forces.gc.ca or can be mailed to the above address.

8. CERTIFICATIONS

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

8.1 SACC Manual Clauses

A3060C 2008/05/12 Canadian Content Certification

9. APPLICABLE LAWS

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

10. 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 general conditions 2010A (2012/07/16), General Conditions - Goods (Medium Complexity);
- c) Annex A, Requirement;
- d) Manufacturing data for shirt, hybrid, hot weather;
- e) Specifications;

- f) Drawings;
 g) Sealed Patterns;
 h) the Contractor's bid dated _____

11. DEFENCE CONTRACT

SACC Manual Clause A9006C (2012/07/16) Defence Contract

12. SACC MANUAL CLAUSES

C2801C 2011/05/16 Priority Rating - Canadian-based Contractors

13. MATERIALS: CONTRACTOR TOTAL SUPPLY

The Contractor will be responsible for obtaining all materials required in the manufacture of the items specified. The delivery stated for the items allows the necessary time to obtain such materials.

14. PROCEDURES FOR DESIGN CHANGE/DEVIATIONS

The Contractor must follow these procedures for any proposed design change/deviation to contract specifications.

The Contractor must complete Part 1 of the Design Change/Deviation form DND 672 and forward one (1) 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.

15. PLANT CLOSING

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

2012-2013

Christmas Holiday FROM _____ TO _____
 Summer Holiday FROM _____ TO _____

2013-2014

Christmas Holiday FROM _____ TO _____
 Summer Holiday FROM _____ TO _____

2014-2015

Christmas Holiday FROM _____ TO _____
 Summer Holiday FROM _____ TO _____

2015-2016

Christmas Holiday FROM _____ TO _____
 Summer Holiday FROM _____ TO _____

16. PLANT LOCATION

Items will be manufactured at: _____

17. SUBCONTRACTOR(S)

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

Solicitation No. - N° de l'invitation

W8476-134002/A

Amd. No. - N° de la modif.

Buyer ID - Id de l'acheteur

pr707

Client Ref. No. - N° de réf. du client

W8476-134002

File No. - N° du dossier

pr707W8476-134002

CCC No./N° CCC - FMS No/ N° VME

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.

18. OVERSHIPMENT

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

19. OWNERSHIP OF PRODUCT - CADPAT™

All products and materials provided to perform the work and any modifications made by the Contractor are the property of Canada.

Patterns and technical data are patented and copyrighted to Her Majesty the Queen of Canada.

The printed textile and any garments made are for the sole end use of the Department of National Defence. The contractor acknowledges that it must not manufacture, sell or offer for sale goods incorporating the CADPAT™ pattern and colours to any person or entity other than Canada without the Minister's prior written authorization.

It is an explicit condition of this agreement that any second quality garments or goods produced pursuant to the contract will not be released, sold or offered to be sold, directly or indirectly to any person or corporation other than Canada without the Minister's prior written authorization.

20. QUALITY PLAN

No later than 30 days after the effective date of the Contract, the Contractor must submit for acceptance by the Department of National Defence (DND) a Quality Plan prepared according to the latest issue (at contract date) of ISO 10005:2005 "Quality management systems - Guidelines for quality plans". The Quality Plan must describe how the Contractor will conform to the specified quality requirements of the Contract and specify how the required quality activities are to be carried out, including quality assurance of subcontractors. The Contractor must include a traceability matrix from the elements of the specified quality requirements to the corresponding paragraphs in the Quality Plan.

The documents referenced in the Quality Plan must be made available when requested by Public Works and Government Services Canada or DND.

If the Quality Plan was submitted as part of the bidding process, the Contractor must review and, where appropriate, revise the submitted plan to reflect any changes in requirements or planning which may have occurred as a result of pre-contract negotiations.

Upon acceptance of the Quality Plan by DND, the Contractor must implement the Quality Plan. The Contractor must make appropriate amendments to the Quality Plan throughout the term of the contract to reflect current and planned quality activities. Amendments to the Quality Plan must be acceptable to DND.

The contract will be subject to the quality requirements of ISO 9001:2008. While ISO certification is not required, the Contractor will be required to implement a quality system which meets all of the elements of ISO:2008 (QAC-Q).

This document can be obtained from HIS Canada, 305-240 Catherine Street, Ottawa, Ontario: Telephone (613) 237-4250 or 1-800-567-1914 Ext 1; Facsimile (613-237-4251).

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 after award of contract at a date determined by the Crown. Participants may include representatives of the Contractor, DND Design Authority, DNDQAR, DND project Authority, Contracting Authority and the DND Procurement 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.

22. PROGRESS REPORT

The Contractor must submit a progress report on the last working day of each month covering all phases of the work. One (1) copy must be distributed to each one of the DNDQAR, the DND Procurement Authority and the Contracting Authority.

2. The progress report must contain at a minimum the following:

- a. A summary of work accomplished during the report period, material purchased and stages of production;
- b. A summary of work planned for the ensuing period;
- c. A statement as to whether the work is proceeding according to plan, full explanation for deviations from the work plan;
- d. Identification of current and potential problems which may affect the progress of the work and the proposed solutions to those problems; and
- e. Delivery status of item by size and destination

23. PRE-PRODUCTION SAMPLES**SHIRT EVALUATION**

1. The Contractor must provide one pre-production sample of the item in CADPAT™ TW in sizes extra-small, small, medium, large, X-large and XX-large in accordance with Annex B, accompanied by the sealed samples if applicable, to the Procurement Authority for acceptance within 45 calendar days from date of contract award.

2. If the first samples are rejected, the Contractor must submit the second samples within 20 calendar days of notification of rejection from the Technical Authority.

3. The Contractor must carry out all required inspection and tests to verify conformance to the technical requirements of the Contract.

4. The Contractor must provide the samples, a copy of the inspection and test reports and certificates of compliance, to the Procurement Authority, transportation charges prepaid, and without charge to Canada. The samples submitted by the Contractor will remain the property of Canada.

Laboratory analysis of the product offered showing test results for specific tests listed at Annexes G and H must be provided with the pre-production samples. Testing must be performed by an independent accredited laboratory establishment and must be in accordance with the test methods detailed in Annex H. The laboratory report must not be dated before the publication date of the Request for Proposal.

5. The Technical Authority will notify the Contractor, in writing, of the conditional acceptance, acceptance or rejection of the samples. A copy of this notification will be provided by the Technical Authority to the Contracting Authority. The notice of conditional acceptance or acceptance does not relieve the Contractor from complying with all requirements of the specifications and all other conditions of the Contract.

6. 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 samples are acceptable. Any production of items before sample acceptance will be at the sole risk of the Contractor.

7. Rejection by the Technical Authority of the second samples submitted by the Contractor for failing to meet the contract requirements, will be grounds for termination of the Contract for default.

8. The samples may not be required if the Contractor is currently in production. The request for waiver of samples must be made by the Contractor in writing to the Contracting Authority. The waiving of this requirement will be at the discretion of the Technical Authority, through a contract amendment.

In addition to those materials covered in Annex H, the following certificates shall be included:

- Slide fasteners –tests reports for flame resistance, colour fastness and strength shall be submitted for the slide fastener at the pre-production stage
- Hook and loop fastener tape- Certificate of compliance
- Thread - Certificate of compliance
- Cord - Certificate of compliance

FABRIC EVALUATION

DSSPM 2-2-80-239, Cloth, Twill, Aramid/FR Viscose 185 g/m²

-After award of contract and prior to commencing garment production, full test for the fabric production lots that will be used in garment production must be reported. Test results are required for each CADPAT™ pattern.

-Submission of two (2) meters full width fabric sample of each CADPAT™ pattern is required.

DSSPM 2-2-80-248, Cloth, knit, jersey, 60/40 cotton/nylon, 130 g/m² Canadian Average Green and Light Sand

-After award of contract and prior to commencing garment production, full test results for the fabric production lots that will be used in garment production must be reported. Test results are required for each colour.

- One (1) metre piece of the finished fabric is required for each colour.

- For the anti microbial product to be used, and when treated in Canada a copy of the Pest Control Product Registration information is required. When treated outside of Canada the fabric must be registered with the *United States Environment Protection Act* in accordance with DSSPM 2-2-80-248. Evidence of this registration must be submitted.

Production

If required, a production sample might be requested by the Technical Authority. It will be manufactured in accordance with Annex B. All tests and supporting documentation must be in accordance with the requirements at Annexes G and H.

For each new production lot, colour and/or new dye lot of fabric used in garment production, and when source of supply changes, full test results must be reported.

A one (1) meter full width fabric sample is required for each new production lot and/or dye lot of fabric, and when source of supply changes.

CERTIFICATE OF COMPLIANCE - DEFINITION

A certificate of compliance is defined for this Contract as a signed and dated certification by an appropriate official of the component manufacturer (e.g. zipper, hook and loop, webbing, etc.). It must specifically address the adherence of the offered component to the specification or manufacturing data of the technical requirement.

A separate certificate of compliance is required for each individual product or component. It must be dated after RFP posting date; and must certify that the product for which the Certificate of Compliance was issued is the same product used in the pre-award sample, in the pre-production samples and in the production units as applicable.

The Contractor is to note that copies of invoices, purchase orders and Certificate of Compliance for products or components that are not manufactured by the certifier are not suitable for use as a Certificate.

23.1 Sealed Samples - Guidance Only

The sealed samples are representative of the required item but are not part of the technical requirement. The sealed samples may not meet the technical requirement in all respects and must be used for guidance only during production.

23.2 Sealed Samples - Return to Sender

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

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

24. SPECIFICATIONS AND STANDARDS**24.1 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

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

25. 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.

ANNEX A REQUIREMENT

1. TECHNICAL REQUIREMENT

The Contractor is required to provide Canada for the Department of National Defence with hybrid shirts in accordance with Manufacturing Data for shirt, hot weather hybrid DSSPM 2-6-87-8832, dated September 2009 revised October 2, 2012, Specification for CADPAT™ TW, DSSPM2-2-80-500, dated 31 January 2012, Specification for CADPAT™ AR, DSSPM2-2-80-501 dated 01 March 2012, Specification for cloth, twill aramid/FR viscose, 185g/m², DSSPM 2-2-80-239, dated 27 January 2011, Specification for cloth, knit jersey, 60/40 cotton/nylon, 130g/m², DSSPM 2-2-80-248, dated 28 August 2012, patterns, drawings and sealed samples.

2. ADDRESSES

Destination Address	Invoicing Address
WB941 Department of National Defence 25 CFSD Montreal 6363 Notre Dame St. E. Montreal, Quebec H1N 1V9	W8476 Department of National Defence 101 Colonel By Drive Ottawa, Ont K1A 0K2 DLP 5-3-3
W248A Department of National Defence 7 CF Supply Depot 195 Ave & 82nd St., Bldg. 236 Edmonton, Alberta T5J 4J5	W8476 Department of National Defence 101 Colonel By Drive Ottawa, Ont K1A 0K2 DLP 5-3-3

3. DELIVERABLES

CONTRACT QUANTITY

Firm Quantity

Item	Description	Unit of Issue	Destination	Firm Quantity	Firm Unit Price, DDP, Transportation costs included, GST extra
1	Shirt hot weather hybrid, CADPAT™ AR	Each	Edmonton	8,000	\$ _____
	Shirt hot weather hybrid, CADPAT™ AR	Each	Montreal	24,000	\$ _____

Item	Description	Unit of Issue	Destination	Firm Quantity	Firm Unit Price, DDP, Transportation costs included, GST extra
2	Shirt hot weather hybrid, CADPAT™ TW	Each	Montreal	4,500	\$ _____

The size-roll is included at annex J

4. "AS AND WHEN REQUESTED" QUANTITIES - Identified as Items 3 and 4

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 3 and 4 is only an approximation of requirements.

Order for "as and when requested" quantities will be made on Form 942.

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

The delivery of the "as and when requested" quantities must be made within 45 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.

Financial Limitation

The total cost to Canada resulting from orders of "as and when requested" quantities must not exceed the sum of \$ **officer to insert at contract** (to be established at contract) 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.

"As and When Requested" Quantity - Special sizes

Item	Description	Estimated Quantity	Unit of Issue	Firm Unit Price, DDP, Transportation costs included, GST extra
3	Shirt hot weather hybrid, CADPAT™ AR	200	Each	\$ _____

"As and When Requested" Quantity - Special sizes

Item	Description	Estimated Quantity	Unit of Issue	Firm Unit Price, DDP, Transportation costs included, GST extra
4	Shirt hot weather hybrid, CADPAT™ TW	100	Each	\$ _____

5. OPTION QUANTITY - Identified as Item 5

The Contractor grants to Canada the irrevocable option to acquire the goods described under item 5 and under the same terms and conditions and at the prices stated in the Contract. The option may only be exercised by the Contracting Authority for a minimum of 5,000 up to a maximum of 50,000 for all amendments in total, distributed amongst the items and destinations and will be evidenced through a contract amendment.

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

Three contract amendments may result.

A size roll will be provided if and when the option is exercised.

DND will have the right to change the CADPAT™ AR and TW for black if the option is exercised.

OPTION

Item	Description	Estimated Quantity for the 3 years	Unit of Issue	Firm Unit Price, DDP, Transportation costs included, GST extra
5	Shirt hot weather hybrid, CADPAT™ TW or AR and black	50,000	Each	year 1 \$ _____ year 2 \$ _____ year 3 \$ _____

Year 1 -up to 24 months from contract award

Year 2 - 24 months from contract award

Year 3 - 36 months from contract award

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.

**MANUFACTURING DATA
FOR
SHIRT, HOT WEATHER, HYBRID**

1.0 SCOPE

1.1 Scope. This Manufacturing Data covers the materials, design, construction, and inspection requirements for Hybrid Shirt with a knit material body and FR fabric arms. The requirement is for three types of Shirt, Hot Weather, Hybrid: Type I - CADPAT™ AR (Arid Regions), Type II - CADPAT™ TW (Temperate Woodlands) and Type III - Black.

1.2 Intended use. The Hybrid Shirt is worn by CF personnel in hot environments exclusively during operations.

1.3 Classification. The garment shall be supplied in one of the following types as specified in the contract:

Type I	Shirt, Hot Weather. Hybrid, CADPAT™ Arid and Light Sand NSN 8415-20-004-8832 A/A
Type II	Shirt, Hot Weather. Hybrid, CADPAT™ Temperate Woodlands and Green NSN 8415-20-005-4383 A/A
Type III	Shirt, Hot Weather. Hybrid, Black NSN 8415-20-005-4389 A/A

1.4 CADPAT™. The information contained herein is Copyright to Her Majesty the Queen of Canada, as is its associated pattern. The term CADPAT™, with and without extensions, is a registered Trademark belonging to the Department of National Defence (DND). Any of the data contained in this specification, and its associated pattern, may be used only for goods for Canada. The printed textile and any items made therefrom shall be for the sole end use of DND. There shall be no selling or offering for sale of goods incorporating the CADPAT™ pattern and colours to any person or entity other than Canada without the Minister's prior written authorization. Explicit in this is that any goods of not first quality produced shall not be released, sold, or offered for sale, directly or indirectly, to any person or corporation other than Canada without the Minister's prior written authorization.

OPI: DSSPM 2-6


Canada

Copyright © 2008 by Department of National Defence Canada

Annex B - 1/16

1.4.1 The information, data, know-how, formulas, algorithms, software, processes, systems, methods, designs, text, works, figures, tables, sketches, photographs, plans, drawings, specifications, samples, reports, names, inventions and/or ideas contained herein (hereinafter "Intellectual Property") is the exclusive property of Her Majesty The Queen in Right of Canada as represented by the Minister of National Defence (hereinafter referred as "DND"). No one has the right to reproduce, disclose, disseminate, or utilize, in any manner or in any form, this Intellectual Property, or any part thereof, without the prior written consent of DND. For further information on the restrictions applicable to this Intellectual Property, or to request consent from DND, please contact the Contracting Authority.

2.0 GOVERNMENT 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 shall be that in effect on the date of the applicable design data list, the invitation to tender or the contract.

SPECIFICATIONS AND STANDARDS

D-80-001-028/SF-001 Cord, Plaited, Spun Synthetic Fibre

D-83-001-005/SF-001 Fasteners, Slide, Interlocking

2.2 Other publications. The following documents form part of this Manufacturing Data to the extent specified herein. Effective date shall 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- 4.131 Cotton-Covered or Polyester-Covered Polyester Thread

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

General Services Administration (FED-STD)

Federal Supply Service
FSS Product Acquisition Center
Supply Standards Division (FLAS)
Arlington, Virginia
22202 USA
Telephone: 703-605-2567
Email: jennifer.moffat@gsa.gov
Download Documents: <http://assist.daps.dla.mil/quicksearch/>

A-A-55217 Commercial Item Description – Thread, Aramid, Spun Staple

A-A-55126 Commercial Item Description – Fasteners Tapes, Hook and Loop,

Synthetic

Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC
20591 USA
Telephone: (866) 835-5322

FAR 25.853

Part 25 – Airworthiness Standards: Transportation Category Airplanes
Subpart D – Design And Construction Fire Protection – Compartment Interiors

Federal Motor Vehicle Safety Standard
U.S. Department of Transportation
Office of Vehicle Safety Compliance
400 7th Street, SW
Room 6111
Washington, DC
20590 USA

FMVSS 302

Flammability of Interior Materials

2.3 DSSPM documents. The following documents form part of the Technical Data Package for the Hybrid Shirt:

DSSPM 2-2-80-500 – **Annex C** Specification For CADPAT™ TW [Canadian Disruptive Pattern (Temperate Woodlands)]

DSSPM 2-2-80-501 – **Annex D** Specification For CADPAT™ AR [Canadian Disruptive Pattern (Arid)]

DSSPM 2-2-80-239 - **Annex E** Specification for Cloth, Twill, Aramid / FR Viscose, 185 g/m²

DSSPM 2-2-80-248 - **Annex F** Specification for Cloth, Knit, Jersey, 60/40 Cotton / Nylon, 130 g/m²

CFTPO-GENERAL - **Annex K** Canadian Forces Transportation Packaging Order

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

Figure I Shirt, Hot Weather, Hybrid – Front and Back Views

Figure II Construction Details – Sleeve Pockets and Cuffs

Figure III Care and Marking Label

2.5 Sealed patterns.

DSSPM 105-09* Shirt, Hot Weather, Hybrid (sealed for design guidance)

DSSPM 262-09 Cloth, Knit, Jersey, 60/40 Cotton/Nylon, 130 g/m², Colour Light Sand

DSSPM 263-02 Cloth, CADPAT™(AR) for Colour Light Sand. This is the lightest of the three (3) colours represented.

DSSPM 259-01 Cloth, CADPAT™(TW) for Colour Canadian Average Green. This is the darker green of the two (2) green colours represented.

DCGEM 291-85

Cloth, Serge, Wool/Polyester, 65/35, Black (for colour)

*NOTE: Sealed Sample DSSPM 105-09 contains the following deviations:

1. The Care and Marking Label printed on the sealed sample is not correct. See Section 3.10 and Figure III for correct labelling information.
2. The hanger loop on the sealed sample has not been secured by bartacks. See paragraph 3.7.6.1.1 for hanger loop instructions.
3. The placement of the flap above the sleeve pocket on the sealed sample is not correct. See paragraph 3.7.1.2.1 and Figure II for details.

2.6 Paper patterns. DND will provide the paper patterns for all sizes under Style Code **SHHYB14**. Size **medium** shall be issued for tendering purposes.

2.7 Order of precedence.

2.7.1 In the event of inconsistency between contract documents, such as contract, technical data, and sealed patterns, the order of precedence shall be contract, technical data, and sealed patterns.

2.7.2 In the event of a conflict between the text of this manufacturing data and the references cited herein, the text of this manufacturing data shall take precedence.

2.7.3 In the event of inconsistency within this manufacturing data, the Design Authority (DSSPM 2-6) shall be contacted for clarification.

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

3.0 REQUIREMENTS

3.1 Sealed patterns. A sealed pattern, when available will be supplied to the successful tenderer. The sealed pattern shall constitute the standard in regard to any properties not defined in this Manufacturing Data.

3.2 Design. The design shall be in accordance with Sealed Pattern DSSPM 105-09 and shall incorporate the following features:

- a. Lined, mandarin collar;
- b. Slide fastener closure at neck;
- c. Flame retardant cloth sleeves, shoulders, and outer collar;
- d. No melt, no drip t-shirt jersey cloth body and inner collar;
- e. Semi-bellows pockets on upper sleeve with pencil pocket and hook and loop fastener closure;
- f. Mid sleeve elbow reinforcement;
- g. Adjustable cuff with hook and loop tape and bellows opening; and
- h. Hang loop on the back of the collar;

3.2.1 Unless otherwise specified, this garment shall be governed by the Scale of Measurements (see Table I).

3.3 Preproduction Sample. When specified in the contract, preproduction samples shall be a requirement. Preproduction samples shall 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.

3.4 Materials.

3.4.1 Knit material for the body, underarms and inside collar. The knit material shall be Cloth, Knit, Jersey, 60/40 Cotton / Nylon, 130 g/m² in accordance with DSSPM 2-2-80-248 (**Annex F**). The colour used on Type I Shirt shall be Light Sand in accordance with DSSPM 263-02 (the lightest of the colours represented). The colour used on Type II Shirt shall be Canadian Average Green in accordance with DSSPM 259-01 (the darker green). The colour used on Type III Shirt shall be black in accordance with DCGEM 291-85

3.4.2 Shell material for the sleeves, sleeve pockets, shoulders, hang loop, and collar. The material used shall be cloth, twill weave, 170 g/m² in accordance with DSSPM 2-2-80-239 (**Annex E**). The colour used for Type I Shirt shall be CADPAT™ Arid Regions (AR) in accordance with DSSPM 2-2-80-501 (**Annex D**). The colour used for Type II Shirt shall be CADPAT™ Temperate Woodlands (TW) in accordance with DSSPM 2-2-80-500 (**Annex C**). The colour used for Type III Shirt shall be black in accordance with DCGEM 291-85.

3.4.3 Slide fasteners. The slide fastener used for the front neck opening shall 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 shall pass the FAR 25.853 Flammability Test and FMVSS 302 for Requirements of Burn Rate. The colour of the slide fasteners shall be a good visual match to the knit fabric (see para 3.4.1) used as the body. The slide fastener length used for all sizes of shirt shall be 10 inches (25.4 cm). When tested in accordance with the applicable test methods, the slide fasteners shall 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.

3.4.4 Hook and loop fastener tape. The tape shall be regular nylon, hook and loop fastener tape in accordance with Type I, Class 1 of A-A-55126. This Manufacturing Data specifies the use of plain backed, 1-inch, 2-inch and 4-inch wide hook and loop fastener tapes, details are defined in Table II. The colour for Type I shirts shall be Light Sand in accordance with Sealed Pattern DSSPM 263-02. The color used for Type II shirts shall be Canadian Average Green in accordance with Sealed Pattern DSSPM 281-01. The colour for Type III shirts shall black in accordance with DCGEM 291-85

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	Shoulder pocket flap closure	1.0	2.5	4.0	10.1	n/a	n/a	n/a	n/a
2	Shoulder pocket flap (outside)	n/a	n/a	n/a	n/a	2.0	5.0	4.0	10.2
3	Shoulder pocket bag (outside)	n/a	n/a	n/a	n/a	4.0	10.2	6.0	15.2
4	Cuff	1.0	2.5	2.0	5.0	1.0	2.5	6.5	16.5

3.4.5 Thread.

3.4.5.1 Thread for flame retardant fabric components. All flame retardant fabric components shall be sewn with Thread, Aramid, Spun Staple thread, Tex 27, in accordance with Type II of A-A-55217. The colour shall match the components being sewn.

3.4.5.1.1 The thread specified above shall be used for all sewing operations (seaming and serging) on the garments' sleeves, as well as all seams where a flame retardant fabric component is joined to a non-flame retardant fabric component (i.e. seaming of knit material to flame retardant material used on underarm and upper sleeve, stitching of the collar materials and the slide fastener placket).

3.4.5.2 Thread for non-flame retardant fabric components. All non-flame retardant fabric components shall be sewn with polyester covered, polyester thread, tex ticket no. R 27 tex (metric size 120), in accordance with Class B, Type 1 of CAN/CGSB-4.131. The colour shall match the components being sewn.

3.4.5.2.1 The thread specified above shall be used for the flatlock seaming of the knit material body.

3.4.5.3 Thread for sewing of hook and loop fastener tape. All hook and loop fastener tape shall be sewn with Thread, Aramid, Spun Staple thread, Tex 27, in accordance with Type II of A-A-55217. The colour shall match the components being sewn. See para 3.6.12 for detailed sewing instructions regarding the hook and loop fastener tape.

3.4.6 Slide fastener pull. The material used for the pull on the slide fastener slider shall be plaited cord of spun synthetic fibre, Type I, conforming to D-80-001-028/SF-001. The colour shall be a good visual match to the knit fabric (see para 3.4.1) used as the body.

3.4.7 Marking and care information. Marking and care information shall be printed via heat transfer on the inside centre back bottom near the hem. For details of the text, see paragraph 3.10. The colour of the printing for Type I shirt shall be black or dark brown. The colour of the printing for Type II and Type III shirts shall be white. The printing shall not show through to the face of the garment.

3.5 Cutting

3.5.1 Garments shall be cut using Government supplied paper patterns. Patterns include seam allowance but do not include make-up allowance. The contractor shall be responsible for any changes which may be required for make-up allowance to suit production methods, but the design, grade or requirements specified herein shall not be changed.

NOTE: Paper patterns will not be supplied to contractors involved with special sizes, except upon request. In these instances the contractor shall be responsible for adjusting the pattern drawings to accommodate the measurements, stance and figure of the individual to be fitted.

3.5.2 The shell parts of each garment shall be cut in the direction of the warp as shown on the pattern drawings or the drawing.

3.5.3 The shell parts of each garment shall be cut from the same piece of shell material. Knit components shall be cut from the same dye lot so there is no shade variation between components.

3.5.4 The specified materials shall be cut and used in accordance with the best commercial standards and practices.

3.6 Sewing

3.6.1 All seams and stitchings shall be in accordance with CAN/CGSB-54.1-M.

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

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

3.6.4 Unless otherwise stated, all seaming and stitching shall be class 300 lockstitch series. Unless otherwise stated, there shall be a gauge of 8 to 10 stitches per inch (2.5 cm) in all seams and stitchings.

3.6.5 Coverstitching of the hem shall 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).

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

3.6.7 All ends of lockstitched seams, stitchings and breaks in thread shall be securely backstitched.

3.6.8 Where seaming, turning and stitching is specified, the ends shall be properly worked out before stitching.

3.6.9 The tension of the needle and bobbin thread shall be adjusted to ensure correctly formed stitches.

3.6.10 Bartacks. Bartacks shall be 3/8-inch (9.5 mm) long and shall not have less than 15 cover stitches.

3.6.11 Serging. All exposed raw edges shall be serged. Serging shall 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 shall be 3/8-inch (9.5 mm).

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

3.6.12.1 When tapes wider than 1-inch (2.5 cm) are used, they shall be stitched around all edges and through the center or have a 'X' enclosed in the box.

3.6.12.2 For best results, a 110 (#18) needle with round point may be used.

3.7 Construction

3.7.1 Sleeves. The sleeves shall consist of three sections: upper, middle and lower. The mid sleeve portion shall consist of two layers of shell fabric (see para 3.4.2) to provide a reinforcement for the elbow. Each sleeve shall be a set-in type with a semi-bellows pocket located on the upper sleeve piece and an adjustable cuff.

3.7.1.1 Semi-bellows pocket. Each pocket shall be made of two pieces of shell material. A pencil pocket, made from one piece of shell fabric, shall be sewn to the top of the pocket front.

3.7.1.1.1 The pocket piece shall be seamed along the top edge, turned and stitched 3/4-inch (1.9 cm) gauge.

3.7.1.1.2 Pencil pocket. A pencil pocket shall be positioned on the outside, front edge of the pocket as indicated on the paper patterns. The pencil pocket shall be made from one piece of shell material.

The top edge shall be turned under and stitched 1/2-inch (12.7 cm) gauge. The long edge of the pencil pocket shall be positioned in line with the front edge of the pocket. The remaining edge shall be serged and stitched to the pocket at 1/8-inch (3.2 mm) gauge.

3.7.1.1.3 The loop fastener tape on the pocket shall be 6-inches long (15.2 cm) and made of one (1) piece of 4 inch (10.2 cm) wide OR two (2) pieces of 2-inch (5.0 cm) wide. The loop shall be sewn to the pocket front as shown in Figure II. The tape shall be stitched around all edges and through the center or have a 'X' enclosed in the box formed by the two pieces of tape.

3.7.1.1.4 The sides and bottom edge of the pocket shall be serged. The bellows cut shall be seamed to form the box corner. The raw edge of the pencil pocket shall be caught in the serging of the front side edge.

3.7.1.1.5 The side and bottom shall be folded in line with the corners and stitched 1/16-inch (1.6 mm) gauge to form back and lower walls of the pocket. The bottom of the pencil pocket shall be folded and sewn in this stitching.

3.7.1.1.6 The cargo pockets shall be positioned on the upper sleeve piece, as shown on the paper pattern, the serged edges turned under, and stitched 1/16-inch (1.6 mm) gauge along the back side and lower edge. The front raw edge of the pencil pocket shall be folded and sewn in the stitching of the remaining edge with a double row of stitching. Bartacks shall be positioned at each of the upper corners of the pocket bag.

3.7.1.2 Semi-bellows pocket flaps. With right sides together, the raw edges shall be serged, seamed across both ends, turned and stitched 1/8-inch (3.5 mm) gauge. A piece of hook fastener tape measuring 4-inches (10.0 cm) long by 1-inch (2.5 cm) wide shall be seamed to the underside, in line with the finished back edge. A piece of loop fastener tape measuring 4 inches (10.2 cm) long by 2-inches (5.0 cm) wide shall be sewn to the front in line with the finished back edge. The tape shall be stitched around all edges and through the center or have an 'X' enclosed in the box.

3.7.1.2.1 Each flap shall be positioned as per the paper pattern, seamed, turned down and stitched 1/4-inch (6.4 mm) gauge to enclose raw edge. There shall be horizontal bartacks placed at each upper corner of the flap.

3.7.1.3 Sleeve cuff. The sleeve cuff shall consist of two pieces and a gusset, and the bottom edge finished with a binding of shell material. The cuff shall be adjustable with the use of hook and loop fastener tape. Refer to Figure II, the sealed sample and the paper patterns for construction.

3.7.1.4 Middle and lower sleeve pieces. The raw edges of the middle and lower sleeve pieces shall be seamed together, serged, and topstitched at 1/4-inch (6.4 mm) gauge.

3.7.1.4.1 After the pieces are assembled, the middle and lower sleeve pieces shall be seamed and serged together at the underarm.

3.7.1.4.2 The bottom edge of the cuff and the raw edge of the binding shall be seamed together and turned under and stitched 1/8-inch gauge as shown on the sealed sample.

3.7.2 Shoulder piece. The raw edge of the shoulder piece shall be seamed, serged and topstitched 1/4-inch gauge (6.4 mm) to the upper sleeve piece.

3.7.3 Body and underarm knit piece. The front, back, two sides and underarm pieces shall be sewn together using flat lock stitching as shown on the sealed sample.

3.7.4 Sleeve and body assembly. The raw edges of the body and underarm knit piece shall be seamed and serged to the upper sleeve and shoulder piece, turned and topstitched 1/4-inch (6.4 mm)

gauge as shown on the sealed sample. The middle and lower sleeve assembly shall be seamed and serged to the upper sleeve, turned and topstitched 1/4-inch (6.4 mm)

3.7.5 Collar. The collar shall be constructed of two layers; the outer layer of shell material (see para 3.4.2) and the inner layer of knit material (see para 3.4.1).

3.7.5.1 The top edge of the inner and outer collar shall be seamed together. The outer collar shall be seamed and serged to the neckline.

3.7.5.2 Zipper facing. The zipper facing must be positioned on the right, inside and shall consist of three layers; one layer of shell fabric (see para 3.4.2) sandwiched between two layers of knit fabric (see 3.4.1). Raw edges of the facing materials shall be serged together. The facing shall be stitched to the right tape of the slide fastener.

3.7.5.3 Front closure. The slide fastener and placket shall be stitched to the raw edge of the centre front opening and collar. The top of the zipper facing shall be folded over to the outside and included in the seam.

3.7.5.4 The raw edge of the under collar shall be turned under 1/4-inch (6.4 mm) and topstitched at the neckline, through all layers with a double row of stitching. The front closure and collar shall be topstitched at 1/4-inch (6.4 mm) gauge.

3.7.6 Hang loop. There shall be a hang loop made of shell material (see para 3.4.2) located on the back of the collar as per Figure I and the sealed sample. The finished width of the hang loop shall be 1/4-inch (6.3 mm).

3.7.6.1 The raw edges of the hang loop shall be included in the stitching of the collar seam. In addition, it shall be secured with bar tacks for strength.

3.7.7 Bottom hem. The bottom hem shall be turned up 1-inch (2.5 cm) and coverstitched as shown on the sealed pattern.

3.7.8 Slide fastener pull. A length of cord shall be threaded and knotted at the end of the slider as shown on the sealed sample. The ends of the cord shall be heat sealed to prevent fraying. The functional length of this pull shall be 2-1/4 inches (5.7 cm).

3.8 Measurements. Measurements shall be as shown on the applicable Figures and the Scale of Measurements (see Table I).

3.9 Pressing. The shirt shall be properly pressed in accordance with good commercial practices.

3.10 Marking. Marking and care information with shall be printed via heat transfer method on the inside centre bottom on the back near the hem. The colour of the printing used on Type I Shirt shall be black or dark brown. The colour of the printing used on Type II and III Shirts shall be white. The printing shall not show through to the face of the garment. See Figure III for an example. Care symbols in accordance with CAN/CGSB-86.1-2003 shall be included on the label. The marking shall give the following information, in French and English, printed in characters not less than 1/8-inch (3.2 mm) or more than 1/4-inch (6.4 mm) in height, with the exception of the size which will be twice the size of the other characters.

- a. Abbreviated nomenclature: Shirt, Hot Weather, Hybrid / Chemise, hybride, pour temps chaud;
- b. NATO Stock Number (NSN) for the applicable size (numbers will be designated in the contract);

- c. Size (chest measurement): XS (29-32), S (33-36), M (37-40), L (41-44), XL (45-48) or 2XL (49-52) / Taille (mesure du poitrine): TP (29-32), P (33-36), M (37-40), G (41-44), TG (45-48) ou 2TG (49-52)
- d. The following care symbols in accordance with CAN/CGSB-86.1-2003:
- Table 1 – Washing – Symbol 8;
 - Table 2 - Bleaching - Symbol 3;
 - Table 3 - Drying - Symbol 2;
 - Table 4 - Ironing/Pressing - Symbol 3; and
 - Table 5 - Professional Textile Care – Symbol 3.
- e. The following care instructions in both English and French:
1. WASH NEW GARMENTS BEFORE WEARING;
 2. LAUNDER GARMENTS SEPARATELY IN HOT WATER. A SECOND CLEAN WATER RINSE IS RECOMMENDED. DO NOT USE CHLORINE BLEACH.
-
1. LAVER LE VÊTEMENT NEUF AVANT DE LE PORTER.
 2. LAVER LES VÊTEMENTS SEPARÉMENT DES AUTRES AVEC DE L'EAU CHAUDE. DEUX RINCAGES SONT RECOMMANDÉS. NE PAS UTILISER D'AGENTS DE BLANCHIMENT.
- f. A line for user identification purposes.

3.11 Finishing. The shirt shall be cleaned, smoothed and folded. Garments shall be individually packaged in accordance with CFTPO-GENERAL (**Annex K**). The abbreviated nomenclature for the label on the bags should read "Shirt, Hot Weather, Hybrid / Chemise, hybride, pour temps chaud".

4. QUALITY CONTROL/INSPECTION

4.1 The contractor shall be responsible for the performance of all inspections and tests necessary to demonstrate that the material and services conform to the requirements of this manufacturing data. The contractor may utilize his own inspection and test equipment, or that of any other facility acceptable to the Quality Assurance Authority.

4.2 The Quality Assurance Authority reserves the right to perform any verification of the activities deemed necessary to confirm that the material and services conform to the contract requirements.

5. PACKAGING

5.1 Packaging and packing. Unless otherwise specified, the packaging, packing and delivery shall be in accordance with the terms of the contract.

6. NOTES

6.1 Ordering data. Procurement documents should specify the following:

- a. Title and date of manufacturing data;
- b. NATO stock number and size required;
- c. Preproduction requirements;

- d. Packaging and packing requirements;
- e. The Design Authority; and
- f. The Quality Assurance Authority.

6.2 Definition of terms.

6.2.1 Design authority. The Design Authority is the Government agency responsible for the technical aspects and changes to the 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 appointed agency responsible for ensuring that materiel and services supplied by the contractor conform to specified requirements. The Quality Assurance Authority will be stipulated in the contract.

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 guide in production.

6.3 DND green procurement. The production of a product to this manufacturing data, or the evaluation of a product to this manufacturing data, may require the use of materials and/or equipment that could be hazardous. This manufacturing data 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 manufacturing data to establish appropriate safety, health and environmental practices and to determine the applicability of regulatory limitations prior to use.

**TABLE III – NATO STOCK NUMBERS FOR
 SHIRT, HOT WEATHER, HYBRID, CADPAT™ AR**

NATO STOCK NUMBER	SIZE
8415-20-004-8832	A/A
8415-20-004-8833	EXTRA SMALL
8415-20-004-8834	SMALL
8415-20-004-8835	MEDIUM
8415-20-004-8836	LARGE
8415-20-004-8837	EXTRA LARGE
8415-20-004-8838	EXTRA EXTRA LARGE
8415-20-007-0338	SPECIAL SIZE

**TABLE IV – NATO STOCK NUMBERS FOR
 SHIRT, HOT WEATHER, HYBRID, CADPAT™ TW**

NATO STOCK NUMBER	SIZE
8415-20-005-4383	A/A
8415-20-005-4384	EXTRA SMALL
8415-20-005-4385	SMALL
8415-20-005-4386	MEDIUM
8415-20-005-4387	LARGE
8415-20-005-4388	EXTRA LARGE
8415-20-007-1153	EXTRA EXTRA LARGE
8415-20-007-0339	SPECIAL SIZE

**TABLE V – NATO STOCK NUMBERS FOR
 SHIRT, HOT WEATHER, HYBRID, BLACK**

NATO STOCK NUMBER	SIZE
8415-20-005-4389	A/A
8415-20-005-4390	EXTRA SMALL
8415-20-005-4391	SMALL
8415-20-005-4392	MEDIUM
8415-20-005-4393	LARGE
8415-20-005-4394	EXTRA LARGE
8415-20-007-1154	EXTRA EXTRA LARGE
8415-20-007-0340	SPECIAL SIZE

BODY MEASUREMENTS		MEASUREMENTS OF FINISHED GARMENT								
SIZE	CHEST	CHEST CIRCUMFERENCE RELAXED	BOTTOM CIRCUMFERENCE RELAXED	FRONT LENGTH FROM TOP OF COLLAR	BACK WIDTH 5" FROM NECK SEAM	BACK LENGTH FROM NECK SEAM	NECK SEAM CIRCUMFERENCE, CLOSED	SLEEVE INSEAM INCLUDING CUFF	SLEEVE CIRCUMFERENCE AT SEAM ABOVE ELBOW	BOTTOM SLEEVE CIRCUMFERENCE
X-SMALL	29-32	35	36	25 1/2	13 1/2	29	17	19 1/2	13 3/4	14
SMALL	33-36	39	40	26 1/2	15	30	17 3/4	20 1/2	14 3/4	14 1/2
MEDIUM	37-40	43	44	27 1/2	16 1/2	31	18 1/2	21 1/2	15 3/4	15
LARGE	41-44	47	48	28 1/2	18	32	19 1/4	22 1/2	16 3/4	15 1/2
X-LARGE	45-48	51	52	29 1/2	19 1/2	33	20	23 1/2	17 3/4	16
XX-LARGE	49-52	55	56	30 1/2	21	34	20 3/4	24 1/2	18 3/4	16 1/2
TOLERANCE PLUS OR MINUS		1	1	1/2	1/2	3/4	3/8	1/2	1/2	1/4

FIGURE I - SHIRT, HOT WEATHER, HYBRID - FRONT AND BACK VIEWS

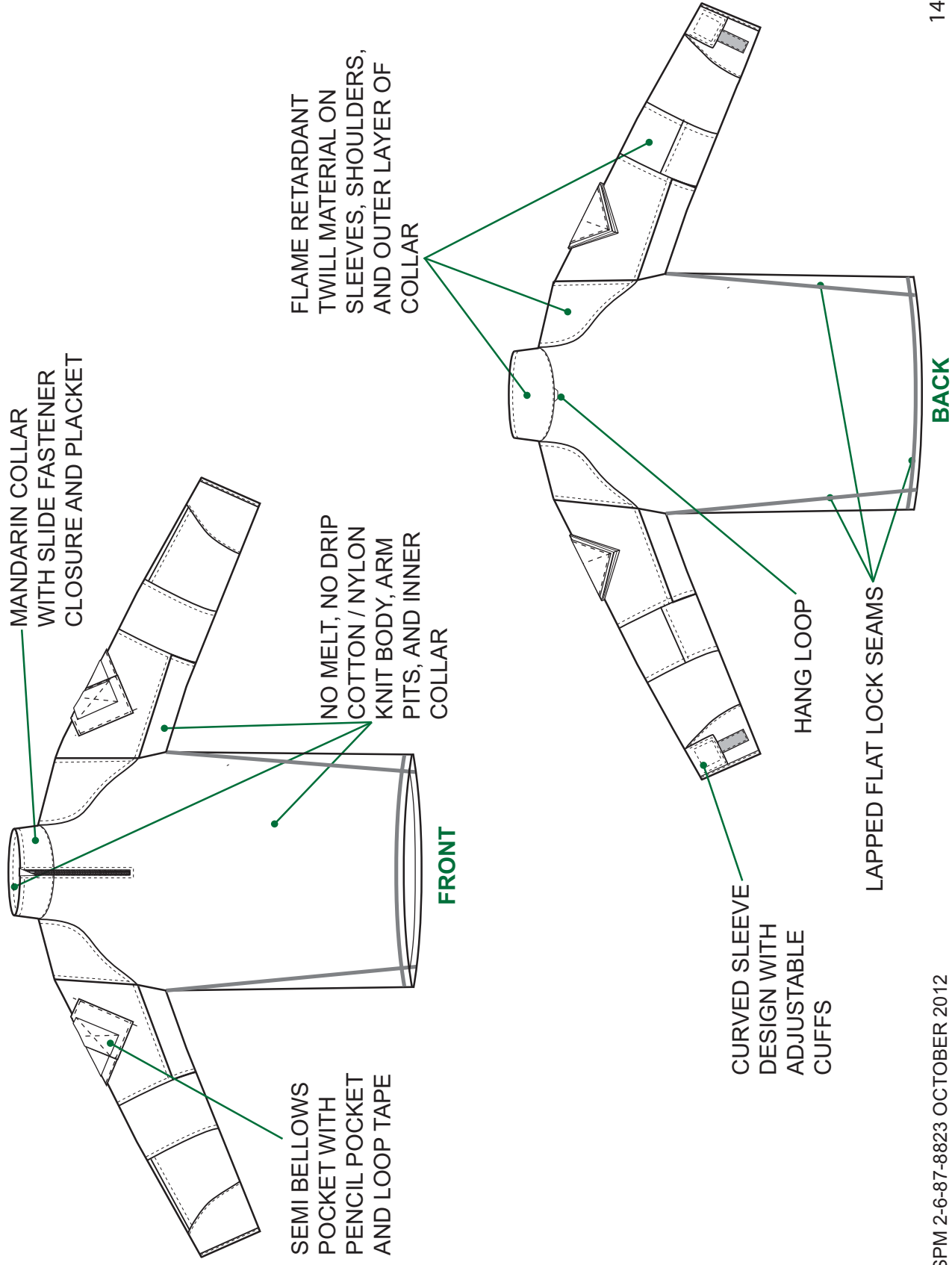


FIGURE II - CONSTRUCTION DETAILS - SLEEVE POCKETS AND CUFFS

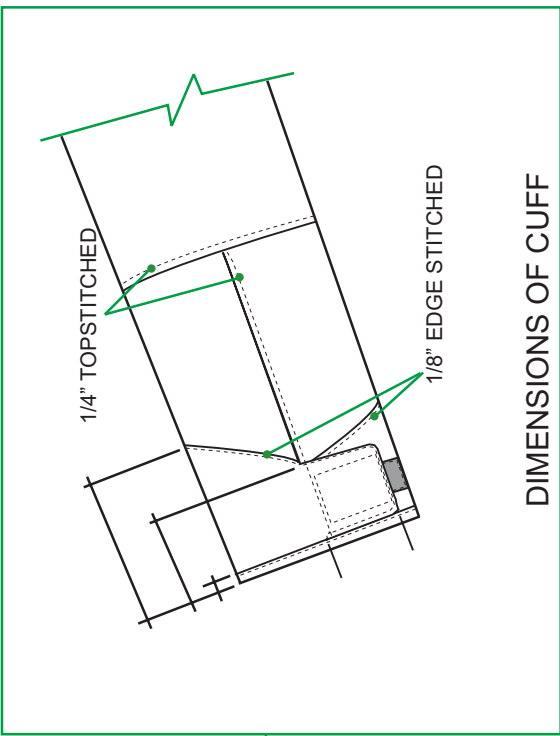
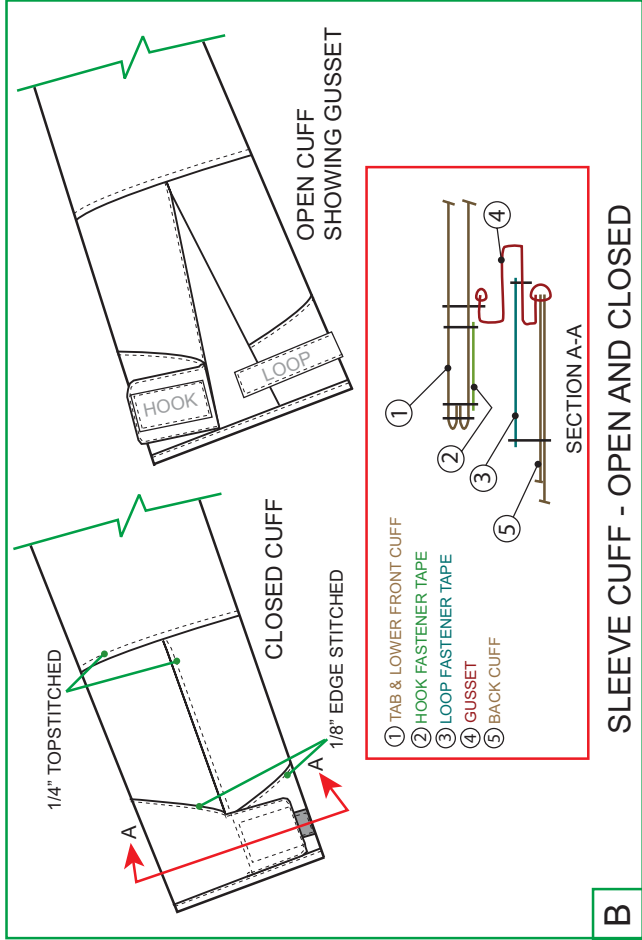
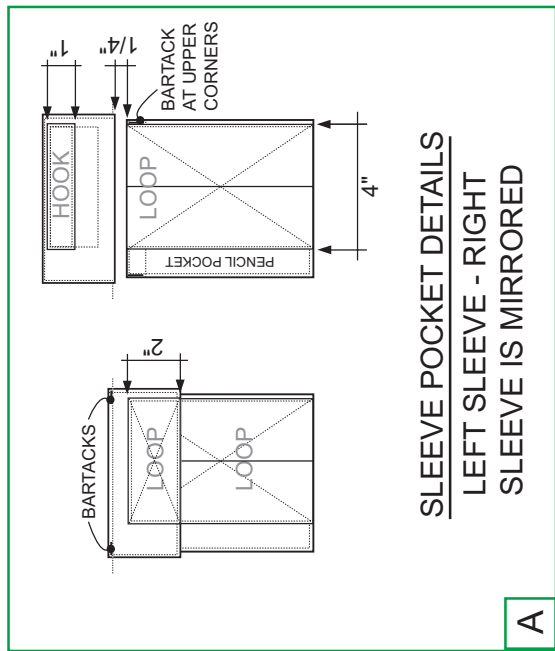
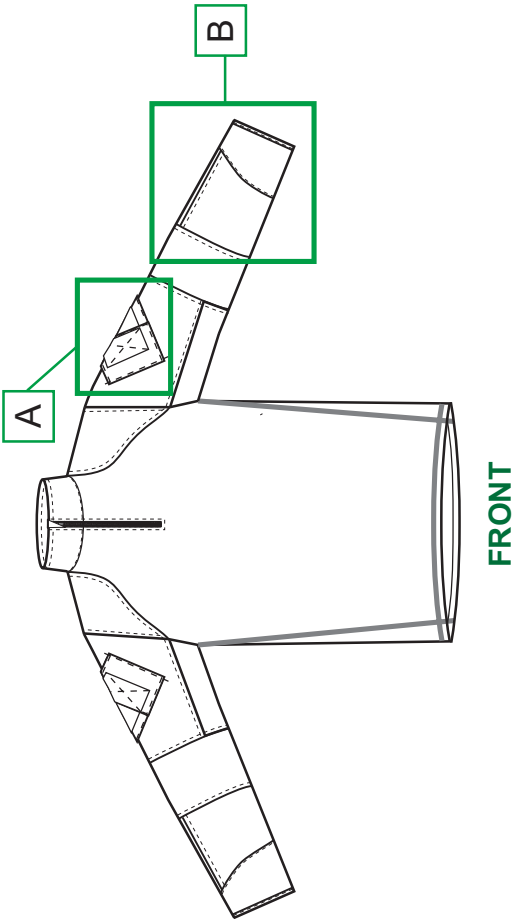
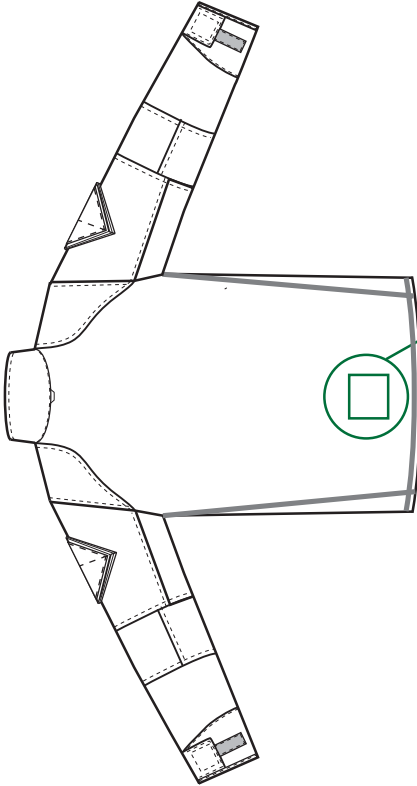


FIGURE III - CARE AND MARKING LABEL




BACK

LOCATION OF CARE AND MARKING LABEL


SHIRT, HOT WEATHER, HYBRID
CHEMISE, HYBRIDE, POUR TEMPS CHAUD
NSN / NNO: 8415-20-004-8835

SIZE/TAILLE : M/M (37-40)


SLEEVES/MANCHES: ARAMID/ARAMIDE/PFR VISCOSE
BODY/CORPS: COTTON/COTON/NYLON




50°C
Tumble dry
on medium.
Séchage par
culbutage
T/moyenne.



Iron at low
temperature.
/ Repasser à
basse
température.



Do not
bleach. / Ne
pas javeliser.



Do not dry-clean /
Ne pas nettoyer
à sec

1. WASH NEW GARMENTS BEFORE WEARING.

2. LAUNDER GARMENTS SEPARATELY IN HOT WATER. A SECOND CLEAR WATER RINSE IS RECOMMENDED. DO NOT USE CHLORINE BLEACH.

1. LAVER LE VÊTEMENT NEUF AVANT DE LE PORTER.

2. LAVER LES VÊTEMENTS SÉPARÉMENT DES AUTRES AVEC DE L'EAU CHAUDE. DEUX RINÇAGES SONT RECOMMANDÉS. NE PAS UTILISER D'AGENTS DE BLANCHIMENT.

I.D. _____

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.

SPECIFICATION

FOR

CADPAT™ (TW)

**[CANADIAN DISRUPTIVE PATTERN
(TEMPERATE WOODLAND)]**

SPÉCIFICATION

DCamC^{MC} (RBT)

**[DESSIN DE CAMOUFLAGE CANADIEN,
(RÉGIONS BOISÉES TEMPÉRÉES)]**

1. SCOPE

1.1 Scope. This specification covers the technical performance requirements for both colour and Infra-red Reflectance for CADPAT™ (TW), Canadian Disruptive Pattern Temperate Woodland. It is intended for use, when specified, for all textiles used by the Canadian Forces for operational clothing and personal equipment. Any allowed deviations from the requirements stated herein shall be clearly defined in procurement documents.

1.2 The information contained herein is Copyright to Her Majesty the Queen of Canada, as is its associated pattern. The term CADPAT™, with and without extensions, is a registered Trademark belonging to the Department of National Defence. Any of the data contained in this specification, and its associated pattern, may be used only for goods for Canada. The printed textile and any items made therefrom shall be for the sole end use of DND. There shall be no selling or offering for sale of goods incorporating the CADPAT™ pattern and colours to any person or entity other than Canada

1. PORTÉE

1.1 Portée. La présente spécification vise les exigences de rendement technique relatives à la couleur et à la réflectance dans l'infrarouge du dessin de camouflage canadien, régions boisées tempérées [DCamC^{MC} (RBT)]. Elle est destinée à être utilisée, lorsque cela est prescrit, pour tous les tissus employés par les Forces canadiennes dans la confection des vêtements opérationnels et de l'équipement individuel. Tous les écarts autorisés par rapport aux exigences énoncées dans le présent document doivent être clairement définis dans les documents d'achat.

1.2 L'information contenue dans le présent document, ainsi que le modèle associé, sont la propriété de Sa Majesté la Reine du Canada et protégés par droit d'auteur. Le terme DCamC^{MC}, avec ou sans extension, est une marque déposée, propriété du ministère de la Défense nationale. Les données contenues dans la présente spécification et le modèle associé ne peuvent être utilisés que pour des marchandises produites pour le Canada. Les tissus imprimés et tous les articles fabriqués dans ce tissu sont à l'usage final exclusif du MDN. Nul bien incorporant le motif et les couleurs du DCamC^{MC} ne peut être vendu ni offert à toute personne ou entité

OPI/BPR: DSSPM / DAPES 2-11

Canada

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without the Minister's prior written authorization. Explicit in this is that any goods of not first quality produced shall not be released, sold, or offered for sale, directly or indirectly, to any person or corporation other than Canada without the Minister's prior written authorization.

autre que le Canada sans l'autorisation préalable écrite du ministre. De façon explicite, tout bien qui n'est pas de première qualité ne peut être distribué, vendu ou offert en vente, directement ou indirectement, à toute personne physique ou morale autre que le Canada sans l'autorisation préalable écrite du ministre.

1.2.1 The information, data, know-how, formulas, algorithms, software, processes, systems, methods, designs, text, works, figures, tables, sketches, photographs, plans, drawings, specifications, samples, reports, names, inventions and/or ideas contained herein (hereinafter "Intellectual Property") is the exclusive property of Her Majesty the Queen in Right of Canada as represented by the Minister of National Defence (hereinafter referred as "DND"). No one has the right to reproduce, disclose, disseminate, or utilize, in any manner or in any form, this Intellectual Property, or any part thereof, without the prior written consent of DND. For further information on the restrictions applicable to this Intellectual Property, or to request consent from DND, please contact the Design Authority, Director Soldier Systems Programme Management, or the Director of Intellectual Property, Department of National Defence, 101 Colonel By Dr., Ottawa, K1A 0K2, Canada.

1.2.1 Les informations, données, formules, algorithmes, logiciels, processus, systèmes, méthodes, dessins, ouvrages, figures, tableaux, croquis, photos, plans, dessins, spécifications, échantillons, rapports, noms, inventions ou idées, de même que le libellé ou le savoir-faire figurant aux présentes (ci-après désignés sous le nom collectif « propriété intellectuelle ») sont la propriété exclusive de Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale (ci-après le « MDN »). Nul n'a le droit de reproduire, divulguer, diffuser ou utiliser, de quelque manière ou sous quelque forme que ce soit, cette propriété intellectuelle, en tout ou en partie, sans le consentement écrit préalable du MDN. Pour de plus amples informations sur les restrictions applicables à cette propriété intellectuelle, ou pour demander le consentement du MDN, veuillez contacter l'autorité responsable de la conception, Directeur – Administration du programme de l'équipement du soldat, ou le Directeur – Propriété intellectuelle, ministère de la Défense nationale, 101, promenade Colonel By, Ottawa, K1A 0K2, Canada.

2. APPLICABLE DOCUMENTS

2.1 Government Documents. Copies of this specification may be obtained from the Department of National Defence, Ottawa, Ontario, Canada, K1A 0K2, Attention: DSSPM 2-2.

2.2 Other Publications. The following documents form part of this Specification to the extent specified herein. Effective dates shall be those in effect on the date of manufacture. Sources are as shown.

2. DOCUMENTS APPLICABLES

2.1 Documents du gouvernement. Des copies de la présente spécification peuvent être obtenues du ministère de la Défense nationale, Ottawa (Ontario), Canada, K1A 0K2, à l'attention de: DAPES 2-2.

2.2 Autres publications. Les publications suivantes font partie intégrante de la présente spécification selon les modalités indiquées ci-après. La date d'entrée en vigueur doit être celle en vigueur à la date de fabrication. La source de diffusion est celle indiquée.

ASTM International
P.O. Box C700

ASTM International
P.O. Box C700
West Conshohocken, PA

West Conshohocken, PA
19428-2959, USA
Telephone: 610-832-9585
Email: service@astm.org

AATCC
P.O. Box 12215
Research Triangle Park, NC
27709, USA
Telephone: 919-549-3526
Email: jonesb@aatcc.org

CIE
International Committee on Illumination
CIE Central Bureau
Kegelgasse 27, A-1030
Vienna, Austria

or

Information Handling Services
15 Inverness Way East, M/S B203
Englewood, CO
80112-5776, USA

19428-2959, ÉTATS-UNIS
Téléphone : 610-832-9585
Courriel: service@astm.org

AATCC
P.O. Box 12215
Research Triangle Park, NC
27709, ÉTATS-UNIS
Téléphone : 919-549-3526
Courriel: jonesb@aatcc.org

CIE
Commission internationale de l'éclairage
Bureau central de la CIE
Kegelgasse 27, A-1030
Vienne, AUTRICHE

ou

Information Handling Services
15 Inverness Way East, M / S B203
Englewood, CO
80112-5776, ÉTATS-UNIS

2.3 Sealed Patterns. Sealed patterns are made available to the bidders and the contractor(s) as a guide to production. In the case of CADPAT™ the sealed pattern reflects the design, pattern, motifs, repeat, clarity, that is required.

2.3 Modèles réglementaires. Des modèles réglementaires sont mis à la disposition des soumissionnaires et des entrepreneurs comme guide pour la production. Dans le cas du DCamC^{MC}, le modèle réglementaire reflète la conception, le dessin, les motifs, les répétitions et la clarté qui sont requis.

DSSPM 259-01 Cloth, Twist, Nylon/Cotton, Lightweight, CADPAT™ (TW), sealed for colours, motif size, colour distribution, print quality, penetration, clarity and pattern.

DSSPM 259-01 Tissu coton/nylon simple retors, DCamC^{MC} (RBT), pour les couleurs, la taille des motifs, la distribution des couleurs, la qualité de l'impression, la pénétration, la clarté et le modèle.

2.4 Order of Precedence.

2.4 Ordre de préséance.

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

2.4.1 En cas d'incohérence entre les documents contractuels, soit le contrat, la spécification et les échantillons réglementaires, l'ordre de préséance est le suivant: le contrat, la spécification et le modèle réglementaire.

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 shall take precedence.

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 In the event of inconsistency within the specification, the Design Authority (DSSPM 2-2)

2.4.3 En cas d'incohérence dans l'énoncé de la spécification, il faut communiquer avec l'autorité responsable de la conception (DAPES 2-2) pour

shall be contacted for clarification.

2.4.4 For any inconsistency in technical details between languages, the language of the original document, which in this case is English, shall take precedence.

3. REQUIREMENTS

3.1 CADPAT™ (TW) specifications. The materiel covered by this specification shall be free from imperfections or blemishes such as may adversely affect its appearance or serviceability. For inspection purposes, imperfections and blemishes shall be considered defects when clearly visible at a normal inspection distance of approximately one metre under good, preferably North Light, lighting conditions.

3.2 Sealed Patterns. Sealed patterns, when furnished, shall constitute the standard only in regard to any properties not defined in this Specification, and in association with any notes which may be included on the reverse side of the sealed pattern tag. Under no circumstance are the Sealed Patterns to be mutilated or cut.

3.3 Colour.

3.3.1 Unless otherwise specified, the printing shall be carried out in a wet process, with dyes. Woven goods shall be pre-dyed prior to printing. Only vat dyestuffs shall be used for any cotton component. Only acid dyestuffs shall be used for any nylon component. Only disperse dyestuffs shall be used for any polyester component. These requirements exist for both dyeing and printing operations.

3.3.2 For CADPAT™(TW) the colours specified in para 3.3.9 below, numerically, must be met, unless otherwise specified in procurement documents, while any sealed pattern provided serves as a guide to the colours. Allowable tolerances are also stated below. Minimal flare when viewed under standard daylight, horizon, and fluorescent light for all colours is required. These colour measurements shall fall within the specified tolerances after 15 laundering cycles when laundered in accordance with the method specified in the applicable cloth specification unless

obtenir des précisions.

2.4.4 En cas d'incohérence dans les détails techniques, entre les deux langues, la langue du document d'origine, dans ce cas-ci l'anglais, a préséance.

3. EXIGENCES

3.1 Spécification du DCamC^{MC} (RBT). Le tissu visé par la présente spécification doit être exempt d'imperfections ou de défauts qui pourraient nuire à son aspect ou à sa tenue en service. À des fins d'inspection, sont considérés comme défauts ceux qui sont clairement visibles à une distance d'inspection normale d'environ un mètre sous un bon éclairage, de préférence la lumière du nord.

3.2 Modèles réglementaires. Les modèles réglementaires, quand ils sont fournis, doivent constituer la norme uniquement en ce qui concerne les propriétés qui ne sont pas définies aux présentes, compte tenu des notes qui peuvent figurer au verso de l'étiquette du modèle réglementaire. En aucun cas, les modèles réglementaires ne doivent être endommagés ni coupés.

3.3 Couleur.

3.3.1 Sauf indication contraire, l'impression doit être effectuée selon un procédé au mouillé, avec des colorants. Les tissus doivent être teints au préalable, avant l'impression. Seuls des colorants de cuve doivent être utilisés pour tout élément en coton. Seuls des colorants acides doivent être utilisés pour tout élément en nylon. Seuls des colorants dispersés doivent être utilisés pour tout élément en polyester. Les présentes exigences s'appliquent aux opérations de teinture et d'impression.

3.3.2 Pour le DCamC^{MC} (RBT), les couleurs précisées sous forme numérique au paragraphe 3.3.9 ci-dessous doivent être respectées, sauf indication contraire dans les documents d'achat, tous les modèles réglementaires fournis devant servir de guide pour les couleurs. Les tolérances admissibles sont également indiquées ci-dessous. Les tissus doivent présenter un éclat minimal lorsqu'on les examine à la lumière du jour, contre l'horizon et sous une lumière fluorescente, et ce, pour toutes les couleurs. Ces mesures de couleur doivent se situer à l'intérieur des tolérances prescrites après 15 cycles de blanchissage selon la méthode décrite dans la

otherwise specified by the applicable cloth specification.

3.3.3 Print quality. Complete penetration of all component fibres in the specified cloth is required. Overall print quality, including colour penetration (i.e. the overall colouring of the wrong side of the printed cloth), uniformity of each colour, clarity, definition, evenness, and all other qualities

indicative of a good print must be at least as good as depicted by the Sealed Pattern DSSPM 259-01.

3.3.4 After printing and/or dyeing in an aqueous medium, all fabrics shall be appropriately stabilized by processes such as drying, heat setting, sanforizing, or other appropriate and durable means, if required to achieve the desired properties defined in the applicable Tables of the cloth specifications.

3.3.5 Hand of the finished, printed specified textiles shall be as represented by the appropriate sealed patterns for the finished cloths.

3.3.6 Infra-red Reflection (IRR). The required IRR characteristics are defined in para 3.3.10 and 3.3.11.2 and Tables I, II, III, and IV of this specification, and depicted graphically in Figures I, II, III, and IV of this specification. Note that the requirements are mandatory from 400-1350 nm for Canadian Average Green, from 730 – 1350 nm for Light Green and Brown, and from 400 – 2000 nm for Black. The waveband range 1351 – 2000 nm for colours Canadian Average Green, Light Green, and Brown is not mandatory at this time; however, the Canadian Forces requirement remains as stated in the respective colour tables and should always be any manufacturer's target. Unless otherwise specified for the textile on order, these characteristics must be met both when manufactured (new) and after 15 laundering cycles when laundered in accordance with the method specified in the applicable cloth specification (See para 3.3.11.2).

3.3.7 Finish. No finish will be applied to obtain fabric stability or temporary colour and/or IRR compliance unless required in the applicable textile specification.

norme applicable au tissu, sauf indication contraire.

3.3.3 Qualité d'impression. La pénétration complète de toutes les fibres composant le tissu prescrit est requise. La qualité globale de l'impression, y compris la pénétration de la couleur (c.-à-d. la coloration globale de l'envers du tissu imprimé), l'uniformité de chaque couleur, la clarté,

la définition, la régularité, et toutes les autres qualités indicatives d'une bonne impression, doit être au moins aussi bonne que ce qui est indiqué dans le modèle réglementaire DSSPM 259-01.

3.3.4 Après l'impression ou la teinture dans un milieu aqueux, tous les tissus doivent être convenablement stabilisés par des procédés tels que le séchage, le thermofixage, le sanforisage ou tout autre moyen approprié et durable, au besoin, pour obtenir les propriétés désirées définies dans les tableaux applicables de la spécification relative au tissu.

3.3.5 La main des tissus prescrits, finis et imprimés, doit être identique aux modèles réglementaires appropriés des tissus finis.

3.3.6 Réflectance dans l'infrarouge (RIR). Les caractéristiques de la RIR requises sont définies aux paragraphes 3.3.10 et 3.3.11.2 et dans les tableaux I, II, III et IV de la présente spécification, et elles sont représentées graphiquement dans les figures I, II, III et IV. Veuillez prendre note que les exigences sont obligatoires dans la plage de 400 à 1 350 nm pour le vert canadien moyen, de 730 à 1 350 nm pour le vert pâle et le brun, et de 400 à 2 000 nm pour le noir. La plage de longueurs d'ondes de 1 351 à 2 000 nm pour le vert canadien moyen, le vert pâle et le brun n'est pas obligatoire pour le moment; toutefois, les exigences des Forces canadiennes demeurent comme il est indiqué dans les tables de couleurs respectives et le fabricant doit chercher à les respecter. Sauf indication contraire pour le tissu commandé, ces caractéristiques doivent être respectées tant pour les tissus fabriqués (neufs), qu'après 15 cycles de blanchissage selon la méthode décrite dans la spécification relative au tissu (voir le paragraphe 3.3.11.2).

3.3.7 Fini. Aucun fini ne sera appliqué pour obtenir une stabilité du tissu ou le respect temporaire de la couleur ou de la RIR, à moins qu'un tel fini ne soit prescrit dans la spécification relative au tissu.

3.3.8 Measurement requirements.

3.3.8.1 All measurements for both colour and infra-red reflection are to be made in accordance with CIE publication 15 - 2004 and ASTM E308.2008 using CIE Illuminant C and a 2 degree observer, specular component included. These conditions of measurement must be followed and included in all test reports.

3.3.8.2 Sample preparation for all chromaticity and IRR measurements shall be in accordance with AATCC Instrumental Measurement Procedure #6, A1.3, non-opaque samples. It has been found that more than one layer 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.

3.3.8.3 Representative samples are to be measured a minimum of four times, rotating the sample 90° after each measurement. All measurements are then to be averaged to produce a single set of reflectance values. The test results shall include the average spectral reflectance of each measured sample.

NOTE: Referee conditions:

- diffuse spectral 8°/hemispherical reflectance factors using a 150 mm diameter integrating sphere accessory coated with BaSO₄
- measurements made at 1 nm intervals over the entire required range with a fixed spectral bandpass of 5 nm up to 860 nm and a variable spectral bandpass of <20 nm from 860 nm to 2000 nm
- measurement geometry 8° incidence, hemispherical collection (8°/t), with the spectral component included
- referee sample measurement: the irradiated area to be 8 mm x 15 mm with a bandpass of 5 nm (preferred)
- where sample size or other condition dictates, irradiated area may be reduced to 4 mm x 9 mm with the bandpass also reduced to 2 nm
- where it is impractical to follow this preparation method, a single layer of the sample may be backed by NRC (National Research Council) standard black felt backing, Reference REN09870.DAT

3.3.8 Exigences relatives aux mesures.

3.3.8.1 Toutes les mesures de couleur et de réflectance dans l'infrarouge doivent être effectuées conformément aux publications CIE 15-2004 et ASTM E308.2008 à l'aide de l'illuminant C et de l'observateur à 2° de la CIE, composante spéculaire incluse. Ces conditions de mesure doivent être respectées et incluses dans tous les rapports d'essai.

3.3.8.2 La préparation des échantillons pour toutes les mesures de couleur et de RIR doit être réalisée conformément à la procédure de mesure instrumentale n° 6 de l'American Association of Textile Chemists and Colorists (AATCC), A1.3, pour des échantillons non opaques. On a constaté que plusieurs épaisseurs de tissu extérieur sont habituellement requises pour donner une lecture uniforme. L'emploi d'un fond noir standard est recommandé. Il incombe à l'opérateur de déterminer et de suivre un protocole standard de préparation des échantillons qui répond aux conditions énoncées.

3.3.8.3 Des échantillons représentatifs doivent être mesurés au moins quatre fois, en tournant l'échantillon de 90° après chaque mesure. On doit ensuite calculer la moyenne de toutes les mesures pour produire un ensemble unique de valeurs de réflectance. Les résultats du test doivent comprendre la réflectance spectrale moyenne de chaque échantillon mesuré.

REMARQUE: Conditions de référence:

- Facteurs de réflectance spectrale 8° / hémisphérique diffuse utilisant une sphère intégrante de 150 mm de diamètre, enduite de BaSO₄
- Mesures effectuées à intervalles de 1 nm sur toute la plage requise avec une bande passante spectrale fixe de 5 nm à 860 nm et une bande passante spectrale variable < 20 nm entre 860 nm et 2 000 nm
- Géométrie de mesure avec incidence de 8° et collecte hémisphérique (8°/t), composante spectrale incluse
- Mesure des échantillons de référence: la zone irradiée doit être de 8 mm x 15 mm avec une bande passante de 5 nm (de préférence)
- Lorsque la taille des échantillons ou d'autres conditions l'exigent, la zone irradiée peut être réduite à 4 mm x 9 mm et la bande passante à 2 nm
- Quand il est impossible de suivre ce protocole de préparation, on peut placer une seule

épaisseur de l'échantillon contre un fond en feutre noir standard du CNRC (Conseil national de recherches du Canada), référence REN09870.DAT

3.3.9 Colour. The CIE LAB 1976 co-ordinates for illuminant C, 2° observer are:

3.3.9 Couleur. Les coordonnées CIE LAB de 1976 pour l'illuminant C et un observateur à 2° sont:

	L*	a*	b*
Canadian Average Green / Vert canadien moyen	27.41	-6.78	16.46
Light Green / Vert pâle	42.90	-13.40	26.80
Brown / Brun	36.50	4.60	14.50
Black / Noir	18.71	0.41	1.21

3.3.9.1 Maximum tolerance is plus/minus 2 CIE LAB units for each coordinate (L*a*b* values, not deltas).

3.3.9.1 La tolérance maximale est de +/- 2 unités CIE LAB pour chaque coordonnée (valeurs L*a*b*, pas les valeurs delta).

3.3.9.1.1 These criteria are repeated in each of the applicable tables, I-IV, at the end of this document, with the CIE 1931/CIE LAB 1976 values also.

3.3.9.1.1 Ces critères sont repris dans chacun des tableaux applicables, I-IV, à la fin de ce document, ainsi qu'avec les valeurs CIE 1931/CIE LAB 1976.

3.3.9.2 Gloss. Unless otherwise specified by the applicable cloth specification, gloss values shall be less than 1.5 units at 20, 60, and 85 degrees when gloss is a specified requirement. Gloss is measured in accordance with ASTM D523.

3.3.9.2 Lustre. Sauf indication contraire dans la spécification applicable au tissu, les valeurs de lustre doivent être inférieures à 1,5 unité à 20°, 60° et 85° lorsque le lustre est une exigence prescrite. Le lustre est mesuré selon la norme ASTM D523.

3.3.10 Infra-red Reflection. Tables I, II, III, and IV contain the requirements for Infra-red reflection for each colour. Upper and lower tolerances are included in each Table. Figures I, II, III, and IV relate to the Tables and are a visual representation of the requirement with upper and lower tolerances shown.

3.3.10 Réflectance dans l'infrarouge. Les tableaux I, II, III et IV contiennent les exigences relatives à la réflectance dans l'infrarouge pour chaque couleur. Les tolérances supérieures et inférieures sont incluses dans chaque tableau. Les figures I, II, III et IV sont associées aux tableaux et sont une représentation visuelle des exigences, avec les tolérances supérieures et inférieures indiquées.

3.3.11 Requirement after Laundering.

3.3.11 Exigence après lavage.

3.3.11.1 Unless otherwise specified, the colour measurements specified herein shall remain within the original tolerances (+/- 2 CIELAB units) after 15 laundering cycles, when the laundering cycles are carried out in accordance with the methodology prescribed in the applicable textile specification.

3.3.11.1 Sauf indication contraire, les mesures de la couleur spécifiées dans les présentes doivent être à l'intérieur des tolérances d'origine (+/- 2 unités CIELAB) après 15 cycles de lavage, lorsque ces cycles sont réalisés conformément à la méthode prescrite dans les spécifications applicables des tissus.

3.3.11.2 Unless otherwise specified, the infra-red reflectance measurements specified herein shall remain within the original tolerances indicated in the Tables for each colour after 15 laundering

cycles, when the laundering cycles are carried out in accordance with the methodology prescribed in the applicable textile specification.

3.4 Piece Marking. Unless otherwise specified, each piece shall have a label attached to the selvedge at one end. The label shall be made of linen or heavy cardboard, with a reinforced eyelet for attaching a tying cord, and shall be legibly marked with the following information:

- a) Contractor's identification (name or CA number)
- b) Contract Number
- c) Gross length in metres, including allowance
- d) Net length in metres
- e) Piece number
- f) Number of lengths per piece
- g) Nomenclature/Classification (textile specification)
- h) Colour
- j) NATO Stock Number
- k) Date of manufacture

All of the above information is required when the goods are contracted for and being delivered directly to the Crown. When contracted by a third party with delivery not to the Crown, only (a), (e), (g), (h), (j), and (k) are mandatory. The other information must be readily available to the Crown and/or its contractor if required.

4. QUALITY CONTROL/INSPECTION

4.1 Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspections and tests as specified herein and to demonstrate that the material and services conform to the requirements specified in this Specification. Contractors may utilize their own or any other inspection facility acceptable to the Crown or its designated representative.

3.3.11.2 Sauf indication contraire, les mesures de la réflectance dans l'infrarouge prescrites aux présentes doivent respecter les tolérances d'origine indiquées aux tableaux pour chaque couleur après

15 cycles de lavage, lorsque ces cycles sont réalisés conformément à la méthode prescrite dans la spécification applicable au tissu.

3.4 Marquage des pièces. Chaque pièce de tissu livrée au Canada 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 (nom ou numéro de CA)
- b) Numéro du contrat
- c) Longueur brute en mètres, y compris la réserve
- d) Longueur nette en mètres
- e) Numéro du rouleau
- f) Nombre de longueurs par rouleau
- g) Nomenclature/classification (spécification relative au tissu)
- h) Couleur
- j) Numéro de nomenclature OTAN
- k) Date de fabrication

Tous les renseignements ci-dessus sont requis lorsque les marchandises sont obtenues dans le cadre d'un contrat et sont livrées directement au gouvernement. Lorsque les marchandises sont obtenues par contrat par une tierce partie sans être livrées au gouvernement, seuls les éléments a), e), g), h), j), et k) sont obligatoires. Les autres renseignements doivent être facilement accessibles pour le gouvernement ou son entrepreneur, le cas échéant.

4. CONTRÔLE DE LA QUALITÉ ET INSPECTION

4.1 Sauf indication contraire dans le contrat ou les documents d'achat, l'entrepreneur est tenu d'effectuer toutes les inspections et les essais prescrits ci-après afin de démontrer que les matériaux et les services sont conformes aux exigences énoncées dans la présente spécification. L'entrepreneur peut utiliser ses propres installations d'inspection ou avoir recours à toute autre

Contractors may also utilize their own test facilities so long as Crown approval has been obtained in advance and the conditions stated in ISO quality and manufacturing publications are followed.

installation jugée acceptable par le gouvernement ou son représentant désigné. L'entrepreneur peut également utiliser ses propres installations d'essai, pourvu qu'il ait obtenu à l'avance l'approbation du gouvernement et que les conditions décrites dans les publications de l'ISO sur la fabrication et la qualité

soient respectées.

4.2 The Crown reserves the right to perform any of the inspections or tests specified herein, where such are deemed necessary to ensure the materiel and/or services submitted to the Crown for acceptance meet all requirements of the contract. This applies equally to materiel contracted for delivery directly to the Department of National Defence or as component parts to a supplier with a contract for products for Defence use.

4.2 Le gouvernement se réserve le droit d'effectuer toute vérification ou tout essai jugé nécessaire pour s'assurer que le matériel et les services présentés au gouvernement pour acceptation sont conformes à toutes les exigences énoncées dans le contrat. Ceci s'applique également au matériel obtenu sous contrat qui doit être livré directement au ministère de la Défense nationale ou comme composants livrés à un fournisseur dans le cadre d'un contrat pour des produits à des fins militaires.

4.3 Any requirement for test data to be presented at pre-contract award or at pre-production will be stated in procurement documents. Unless otherwise specified, this data shall result from tests carried out on current production, at independent certified laboratories, in full accordance with all specified test methods and conditions, and these shall be included in the laboratory reports. Bidding and/or contractual documents shall include requirements for in-contract testing including: specific tests, their frequency, their source, and their reporting procedure. At a minimum, all shipments of CADPAT™ printed textile shall be accompanied by producer laboratory reports for colour and IRR measurements. These measurements shall have been carried out on the goods being shipped and shall have been carried out on each processed batch, and at least every 5,000 metres.

4.3 Toute exigence relative aux données d'essai qui doivent être présentées à l'étape de préadjudication ou de présérie sera indiquée dans les documents d'achat. Sauf indication contraire, ces données doivent être obtenues par des essais effectués pendant la production courante dans des laboratoires indépendants accrédités, conformément à toutes les méthodes et conditions d'essai prescrites, et elles doivent figurer dans les rapports de laboratoire. Les documents d'appel d'offres ou du contrat doivent inclure les exigences relatives aux essais pendant l'exécution du contrat, y compris: la définition des essais, leur fréquence, leur source et la production des rapports. Au minimum, tous les lots de tissu DCamC^{MC} imprimé doivent être accompagnés des rapports de laboratoire du producteur pour les mesures de couleur et de RIR. Ces mesures doivent avoir été réalisées sur les marchandises expédiées et effectuées sur chaque lot traité, et à tout le moins, à tous les 5 000 m.

5. PACKAGING

5. CONDITIONNEMENT

5.1 Unless otherwise specified, packaging, packing, and marking of shipping containers shall be in accordance with the terms of the contract.

5.1 Sauf indication contraire, le conditionnement, l'emballage et le marquage des conteneurs d'expédition doivent être conformes aux modalités du contrat.

6. NOTES

6. REMARQUES

6.1 Ordering data. Procurement documents

6.1 Données de commande. Les documents

should specify the following:

- a) title, number and date of this Specification and of the textile specification
- b) NATO Stock number of required item
- c) Nomenclature/Classification (textile specification)
- d) Pre-production requirements
- e) Packaging, packing, and marking of shipping containers
- f) The Design Authority
- g) The Quality Assurance Authority

6.2 Definition of terms.

6.2.1 Design Authority. The Design Authority is the Government agency responsible for the technical aspects of the design and for changes to the design. The Design Authority for this requirement is the Directorate of Soldier Systems Programme Management (DSSPM), Department of National Defence.

6.2.2 Quality Assurance Authority. The Quality Assurance Authority is the Government agency responsible for providing assurance the materiel and services supplied by the contractor are in accordance with the terms of the contract. The Quality Assurance Authority is the Directorate of Quality Assurance (DQA), Department of National Defence.

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. The sealed pattern is a duplicate of the master sealed pattern which is the Department of National Defence's authorized prototype of the item to be produced. Sealed patterns are available for the contractor to use as a *conceptual example for production*. Contractors should note that sealed patterns may not incorporate all the details cited in this Specification and the order of precedence prevails (see para 2.4).

6.2.5 Specification Copies. Copies of this Specification are available from the Department of

d'achat doivent préciser:

- a) le titre, le numéro et la date de la présente spécification et de la spécification relative au tissu
- b) le numéro de nomenclature OTAN des articles requis
- c) la nomenclature ou la classification (spécification relative au tissu)
- d) les exigences de présérie
- e) le conditionnement, l'emballage et le marquage des conteneurs d'expédition
- f) l'autorité responsable de la conception
- g) l'autorité responsable de l'assurance de la qualité

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 connexe. Dans le cas des articles visés par la présente spécification, 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. 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 modalités du contrat. L'autorité responsable de l'assurance de la qualité est le directeur de l'assurance de la qualité, ministère de la Défense nationale du Canada.

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

6.2.4 Modèle réglementaire. Copie exacte du modèle réglementaire principal, qui est le prototype autorisé par le ministère de la Défense nationale pour l'article qui doit être fabriqué. Les modèles réglementaires sont mis à la disposition de l'entrepreneur comme *exemple conceptuel pour la production*. Les entrepreneurs doivent prendre note que les modèles réglementaires n'incorporent pas nécessairement tous les détails indiqués aux présentes, en cas de divergence, l'ordre de préséance mentionné au paragraphe 2.4 prévaut.

6.2.5 Copies de la spécification. Des copies de la présente spécification peuvent être obtenues

National Defence, Directorate of Soldier Systems
Programme Management, Ottawa, Ontario, K1A
0K2, Attention: DSSPM 2-2.

auprès du ministère de la Défense nationale,
Direction de l'administration du programme de
l'équipement du soldat, Ottawa (Ontario),
K1A 0K2, à l'attention: DAPES 2-2.

6.3 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.

6.3 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 CADPAT™ REQUIREMENTS CANADIAN AVERAGE GREEN

TABLEAU I EXIGENCES RELATIVES AU DCamC^{MC} VERT CANADIEN MOYEN

SPECIFICATIONS / SPÉCIFICATIONS									
CIE 1931/CIE LAB 1976				x		y			
ILLUMINANT C, 2 deg.				Y%		5,24			
specular component included/				DW,nm		569,36			
composante spéculaire incluse				S%		38,50			
				L*		27,41			
				a*		-6,78			
				b*		16,46			
Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	Refl. Min Réfl. min.	Refl. Max Réfl. max.	Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	Refl. Min Réfl. min.	Refl. Max Réfl. max.
400	1,89	0,77	1,12	2,67	840	42,14	14,80	27,35	56,94
410	1,95	0,85	1,10	2,79	850	42,50	14,90	27,60	57,39
420	2,00	0,93	1,07	2,93	860	42,85	15,00	27,85	57,85
430	2,11	1,04	1,07	3,16	870	43,20	15,11	28,09	58,31
440	2,26	1,17	1,09	3,43	880	43,20	15,05	28,15	58,24
450	2,39	1,28	1,11	3,67	890	43,16	14,99	28,16	58,15
460	2,46	1,33	1,14	3,79	900	43,11	14,94	28,17	58,06
470	2,53	1,37	1,16	3,90	910	43,07	14,90	28,17	57,97
480	2,62	1,43	1,19	4,05	920	43,03	14,86	28,18	57,89
490	2,72	1,50	1,22	4,22	930	43,00	14,82	28,18	57,82
500	2,95	1,63	1,32	4,58	940	42,82	14,76	28,06	57,58
510	3,70	2,02	1,68	5,72	950	42,64	14,70	27,94	57,33
520	4,45	2,44	2,01	6,88	960	42,45	14,64	27,81	57,09
530	5,24	2,84	2,40	8,09	970	42,28	14,60	27,68	56,87
540	6,05	3,26	2,79	9,31	980	42,09	14,56	27,53	56,64
550	6,65	3,59	3,06	10,24	990	41,91	14,52	27,39	56,44
560	6,41	3,53	2,88	9,94	1000	42,56	14,65	27,91	57,20
570	6,17	3,49	2,68	9,65	1010	43,21	14,77	28,43	57,98
580	5,84	3,36	2,48	9,20	1020	43,85	14,90	28,95	58,76
590	5,47	3,22	2,26	8,69	1030	44,45	15,04	29,41	59,49
600	5,14	3,08	2,05	8,22	1040	45,15	15,18	29,97	60,33
610	4,86	2,97	1,89	7,84	1050	45,51	15,22	30,30	60,73
620	4,60	2,88	1,72	7,48	1060	45,59	15,15	30,43	60,74
630	4,39	2,78	1,61	7,16	1070	45,66	15,09	30,56	60,75
640	4,19	2,67	1,52	6,87	1080	45,73	15,04	30,69	60,76
650	3,96	2,54	1,42	6,50	1090	45,81	14,99	30,82	60,79
660	3,65	2,33	1,32	5,98	1100	45,88	14,94	30,94	60,81
670	3,34	2,13	1,21	5,47	1110	44,88	14,74	30,14	59,61
680	4,52	2,71	1,81	7,23	1120	43,87	14,55	29,32	58,42
690	5,87	3,42	2,45	9,30	1130	42,87	14,39	28,48	57,25
700	8,94	4,60	4,34	13,54	1140	41,87	14,24	27,63	56,10
710	14,61	6,69	7,92	21,30	1150	40,86	14,11	26,76	54,97
720	20,27	8,94	11,33	29,21	1160	39,87	14,00	25,87	53,88
730	26,37	10,48	15,89	36,86	1170	38,72	13,46	25,26	52,18
740	32,48	12,31	20,17	44,78	1180	37,49	13,01	24,49	50,50
750	35,95	13,20	22,75	49,15	1190	36,27	12,66	23,61	48,93
760	36,58	13,40	23,18	49,99	1200	35,04	12,43	22,61	47,47
770	37,52	13,62	23,91	51,14	1210	36,48	12,40	24,08	48,88
780	38,46	13,84	24,62	52,29	1220	36,68	12,37	24,31	49,05
790	39,40	14,06	25,34	53,46	1230	36,87	12,35	24,53	49,22
800	40,33	14,29	26,04	54,62	1240	37,07	12,33	24,75	49,40
810	41,28	14,53	26,75	55,81	1250	37,26	12,30	24,96	49,57
820	41,44	14,60	26,83	56,04	1260	37,46	12,28	25,18	49,75
830	41,79	14,70	27,09	56,49	1270	37,65	12,27	25,39	49,92

TABLE I CADPAT™ REQUIREMENTS **TABLEAU I EXIGENCES RELATIVES AU DCam^{CM}**
CANADIAN AVERAGE GREEN (cont.) **VERT CANADIEN MOYEN (suite)**

Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	Refi. Min Réfl. min.	Refi. Max Réfl. max.	Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	Refi. Min Réfl. min.	Refi. Max Réfl. max.
nm	%	%	%	%	nm	%	%	%	%
1280	37.85	12.25	25.60	50.10	1730	17.30	7.49	9.81	24.79
1290	38.05	12.24	25.81	50.28	1740	17.11	7.45	9.66	24.56
1300	37.40	12.05	25.36	49.45	1750	16.92	7.42	9.50	24.34
1310	36.75	11.87	24.88	48.62	1760	16.72	7.34	9.38	24.07
1320	36.10	11.71	24.39	47.81	1770	16.52	7.26	9.26	23.79
1330	35.45	11.57	23.88	47.01	1780	16.33	7.18	9.14	23.51
1340	34.80	11.44	23.36	46.23	1790	16.12	7.11	9.02	23.23
1350	34.15	11.32	22.83	45.47	1800	15.92	7.03	8.89	22.96
1360	31.04	10.44	20.61	41.48	1810	15.72	6.96	8.76	22.68
1370	27.94	9.55	18.39	37.49	1820	14.93	6.63	8.30	21.55
1380	24.83	8.66	16.17	33.50	1830	14.13	6.29	7.85	20.42
1390	21.73	7.78	13.95	29.50	1840	13.34	5.95	7.39	19.29
1400	18.62	6.89	11.73	25.51	1850	12.55	5.62	6.93	18.16
1410	15.52	6.00	9.51	21.52	1860	11.75	5.28	6.47	17.03
1420	12.41	5.12	7.29	17.53	1870	10.96	4.94	6.01	15.90
1430	11.67	4.90	6.76	16.57	1880	10.16	4.61	5.56	14.77
1440	10.93	4.70	6.23	15.63	1890	9.37	4.27	5.10	13.64
1450	10.19	4.52	5.67	14.71	1900	8.57	3.94	4.64	12.51
1460	9.46	4.35	5.10	13.81	1910	7.78	3.60	4.18	11.38
1470	8.85	4.52	5.33	14.37	1920	6.99	3.26	3.72	10.25
1480	10.26	4.69	5.56	14.95	1930	6.19	2.93	3.26	9.12
1490	10.66	4.87	5.79	15.53	1940	5.65	2.58	3.07	8.23
1500	11.06	5.05	6.01	16.11	1950	5.32	2.41	2.91	7.73
1510	11.46	5.24	6.22	16.70	1960	4.99	2.28	2.71	7.26
1520	11.86	5.42	6.44	17.29	1970	4.67	2.19	2.48	6.86
1530	12.27	5.61	6.66	17.88	1980	4.33	2.16	2.18	6.49
1540	12.98	5.83	7.16	18.81	1990	4.48	2.21	2.27	6.69
1550	13.69	6.10	7.59	19.79	2000	4.63	2.27	2.36	6.90
1560	14.41	6.42	7.99	20.82		4.79	2.33	2.46	7.12
1570	15.12	6.78	8.34	21.89					
1580	15.83	7.17	8.66	23.00					
1590	16.55	7.60	8.95	24.15					
1600	17.26	8.05	9.21	25.31					
1610	17.40	7.86	9.54	25.26					
1620	17.54	7.72	9.82	25.25					
1630	17.67	7.61	10.06	25.29					
1640	17.82	7.56	10.26	25.38					
1650	17.96	7.55	10.40	25.51					
1660	18.09	7.59	10.49	25.68					
1670	18.23	7.68	10.55	25.92					
1680	18.04	7.64	10.40	25.69					
1690	17.85	7.60	10.25	25.45					
1700	17.67	7.56	10.11	25.23					
1710	17.49	7.52	9.96	25.01					

FIGURE 1 CADPAT™ (TW)
COULEUR: CANADIAN AVERAGE GREEN

FIGURE 1 DCamC^{MC} (RBT)
COULEUR: VERT CANADIEN MOYEN

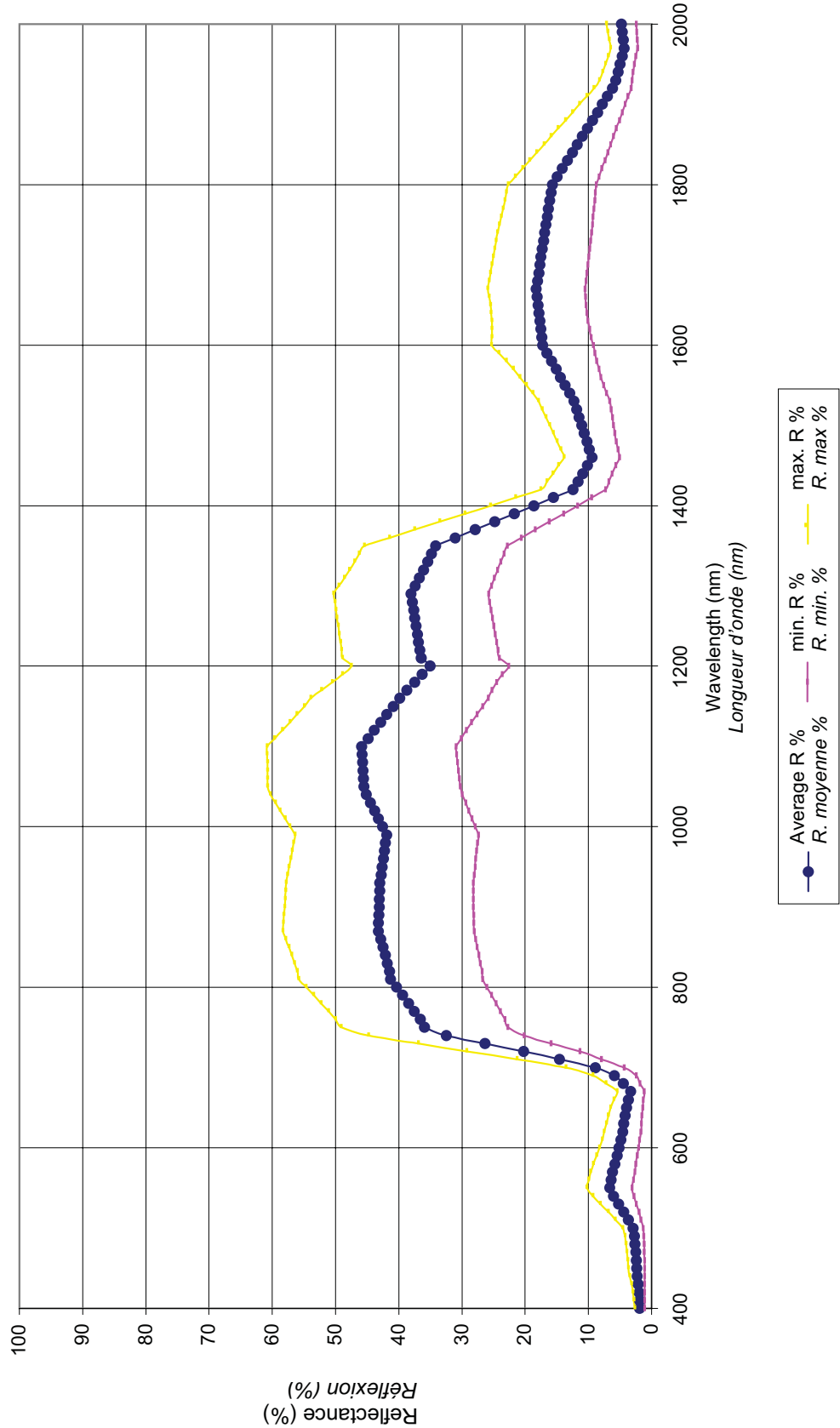


TABLE II CADPAT™ REQUIREMENTS
LIGHT GREEN

SPECIFICATIONS / SPÉCIFICATIONS:				
CIE 1931/CIE LAB 1976	x	y		0,3614
ILLUMINANT C, 2 deg.		Y%		-0.4339
specular component included	DW.nm			13,10
composante spéculaire incluse	S%			566,70
	L*			44,70
	a*			42,90
	b*			-13,40
				26,80

TABLEAU II EXIGENCES RELATIVES AU DCamC^{MC}
VERT PÂLE

Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	Refi. Min Réfl. min.	Refi. Max Réfl. max.	Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	Refi. Min Réfl. min.	Refi. Max Réfl. max.
nm	%	%	%	%	nm	%	%	%	%
400	4,37				840	52,68	18,50	34,18	71,18
410	4,30				850	53,12	18,62	34,50	71,74
420	4,24				860	53,37	18,75	34,81	72,32
430	4,18				870	54,00	18,89	35,12	72,89
440	4,12				880	54,00	18,81	35,19	72,80
450	4,13				890	53,95	18,74	35,21	72,69
460	4,47				900	53,89	18,68	35,21	72,57
470	4,82				910	53,84	18,62	35,22	72,46
480	6,82				920	53,79	18,57	35,22	72,36
490	9,53				930	53,75	18,53	35,22	72,27
500	12,22				940	53,53	18,45	35,08	71,97
510	14,86				950	53,30	18,37	34,93	71,67
520	17,51				960	53,06	18,30	34,76	71,36
530	17,24				970	52,84	18,25	34,60	71,09
540	15,74				980	52,61	18,20	34,41	70,80
550	14,23				990	52,39	18,16	34,24	70,55
560	12,69				1000	53,20	18,31	34,89	71,51
570	11,15				1010	54,01	18,47	35,54	72,47
580	10,50				1020	54,82	18,63	36,19	73,45
590	10,24				1030	55,56	18,80	36,76	74,36
600	10,34				1040	56,43	18,97	37,46	75,41
610	11,91				1050	56,89	19,02	37,87	75,91
620	13,49				1060	56,98	18,94	38,04	75,92
630	15,05				1070	57,07	18,87	38,20	75,94
640	16,61				1080	57,16	18,80	38,36	75,95
650	17,94				1090	57,26	18,73	38,52	75,99
660	18,70				1100	57,35	18,67	38,67	76,02
670	19,47				1110	56,10	18,42	37,68	74,52
680	18,68				1120	54,84	18,19	36,65	73,03
690	17,71				1130	53,59	17,98	35,61	71,57
700	17,46				1140	52,33	17,80	34,54	70,13
710	18,30				1150	51,08	17,64	33,45	68,72
720	19,14				1160	49,83	17,50	32,33	67,33
730	32,97	13,10	19,86	46,07	1170	48,40	16,83	31,57	65,23
740	40,59	15,38	25,21	55,98	1180	46,87	16,26	30,61	63,13
750	44,94	16,50	28,43	61,44	1190	45,33	15,83	29,51	61,16
760	45,73	16,76	28,98	62,49	1200	43,80	15,54	28,26	59,34
770	46,90	17,02	29,88	63,92	1210	45,60	15,50	30,10	61,10
780	48,07	17,29	30,78	65,36	1220	45,85	15,46	30,38	61,31
790	49,25	17,58	31,67	66,82	1230	46,09	15,43	30,66	61,52
800	50,41	17,87	32,55	68,28	1240	46,34	15,41	30,93	61,75
810	51,60	18,17	33,43	69,77	1250	46,58	15,38	31,20	61,96
820	51,80	18,25	33,54	70,05	1260	46,83	15,36	31,47	62,18
830	52,24	18,37	33,87	70,61	1270	47,07	15,33	31,74	62,40

TABLE II CADPAT™ REQUIREMENTS
LIGHT GREEN (cont.)

TABLEAU II EXIGENCES RELATIVES AU DCamC^{MC}
VERT PÂLE (suite)

Wavelength Longueur d'onde nm	Reflection Réflexion %	ST.DEV. Écart type %	Refli. Min Réfl. min. %	Refli. Max Réfl. max. %	Wavelength Longueur d'onde nm	Reflection Réflexion %	ST.DEV. Écart type %	Refli. Min Réfl. min. %	Refli. Max Réfl. max. %
1280	47.32	15.32	32.00	62.63	1720	21.62	9.36	12.26	30.98
1290	47.56	15.30	32.26	62.86	1730	21.39	9.32	12.07	30.70
1300	46.76	15.06	31.70	61.82	1740	21.15	9.28	11.87	30.43
1310	45.94	14.84	31.10	60.78	1750	20.91	9.18	11.73	30.08
1320	45.12	14.64	30.48	59.76	1760	20.66	9.08	11.58	29.73
1330	44.31	14.46	29.85	58.77	1770	20.41	8.98	11.43	29.39
1340	43.50	14.30	29.20	57.79	1780	20.15	8.88	11.27	29.04
1350	42.69	14.16	28.53	56.84	1790	19.91	8.79	11.11	28.70
1360	38.80	13.05	25.76	51.85	1800	19.65	8.70	10.95	28.36
1370	34.92	11.94	22.98	46.86	1810	18.66	8.28	10.38	26.94
1380	31.04	10.83	20.21	41.87	1820	17.67	7.86	9.81	25.53
1390	27.16	9.72	17.44	36.88	1830	16.68	7.44	9.23	24.12
1400	23.28	8.61	14.66	31.89	1840	15.68	7.02	8.66	22.70
1410	19.39	7.51	11.89	26.90	1850	14.69	6.60	8.09	21.29
1420	15.51	6.40	9.11	21.91	1860	13.70	6.18	7.52	19.88
1430	14.58	6.13	8.45	20.71	1870	12.70	5.76	6.94	18.46
1440	13.66	5.88	7.79	19.54	1880	11.71	5.34	6.37	17.05
1450	12.74	5.65	7.09	18.38	1890	10.72	4.92	5.80	15.64
1460	11.82	5.44	6.38	17.26	1900	9.73	4.50	5.23	14.23
1470	12.32	5.65	6.67	17.97	1910	8.73	4.08	4.65	12.81
1480	12.82	5.87	6.95	18.69	1920	7.74	3.66	4.08	11.40
1490	13.33	6.09	7.24	19.42	1930	7.07	3.22	3.84	10.29
1500	13.82	6.32	7.51	20.14	1940	6.65	3.01	3.64	9.66
1510	14.33	6.55	7.78	20.87	1950	6.23	2.85	3.39	9.08
1520	14.83	6.78	8.05	21.61	1960	5.83	2.74	3.10	8.57
1530	15.34	7.01	8.32	22.35	1970	5.42	2.69	2.72	8.11
1540	16.23	7.28	8.95	23.51	1980	5.60	2.76	2.84	8.37
1550	17.11	7.62	9.49	24.73	1990	5.79	2.84	2.95	8.63
1560	18.01	8.02	9.99	26.03	2000	5.99	2.92	3.07	8.90
1570	18.90	8.47	10.42	27.37					
1580	19.79	8.97	10.82	28.75					
1590	20.68	9.50	11.18	30.19					
1600	21.58	10.07	11.51	31.64					
1610	21.75	9.83	11.92	31.58					
1620	21.92	9.65	12.28	31.57					
1630	22.09	9.52	12.58	31.61					
1640	22.27	9.45	12.82	31.72					
1650	22.44	9.44	13.00	31.89					
1660	22.61	9.49	13.12	32.10					
1670	22.79	9.61	13.18	32.39					
1680	22.56	9.55	13.00	32.11					
1690	22.32	9.5	12.82	31.81					
1700	22.09	9.45	12.64	31.54					
1710	21.86	9.40	12.45	31.26					

FIGURE 2 CADPAT™ (TW)

COLOUR: LIGHT GREEN

FIGURE 2 DCamC^{MC} (RBT)

COULEUR: VERT PÂLE

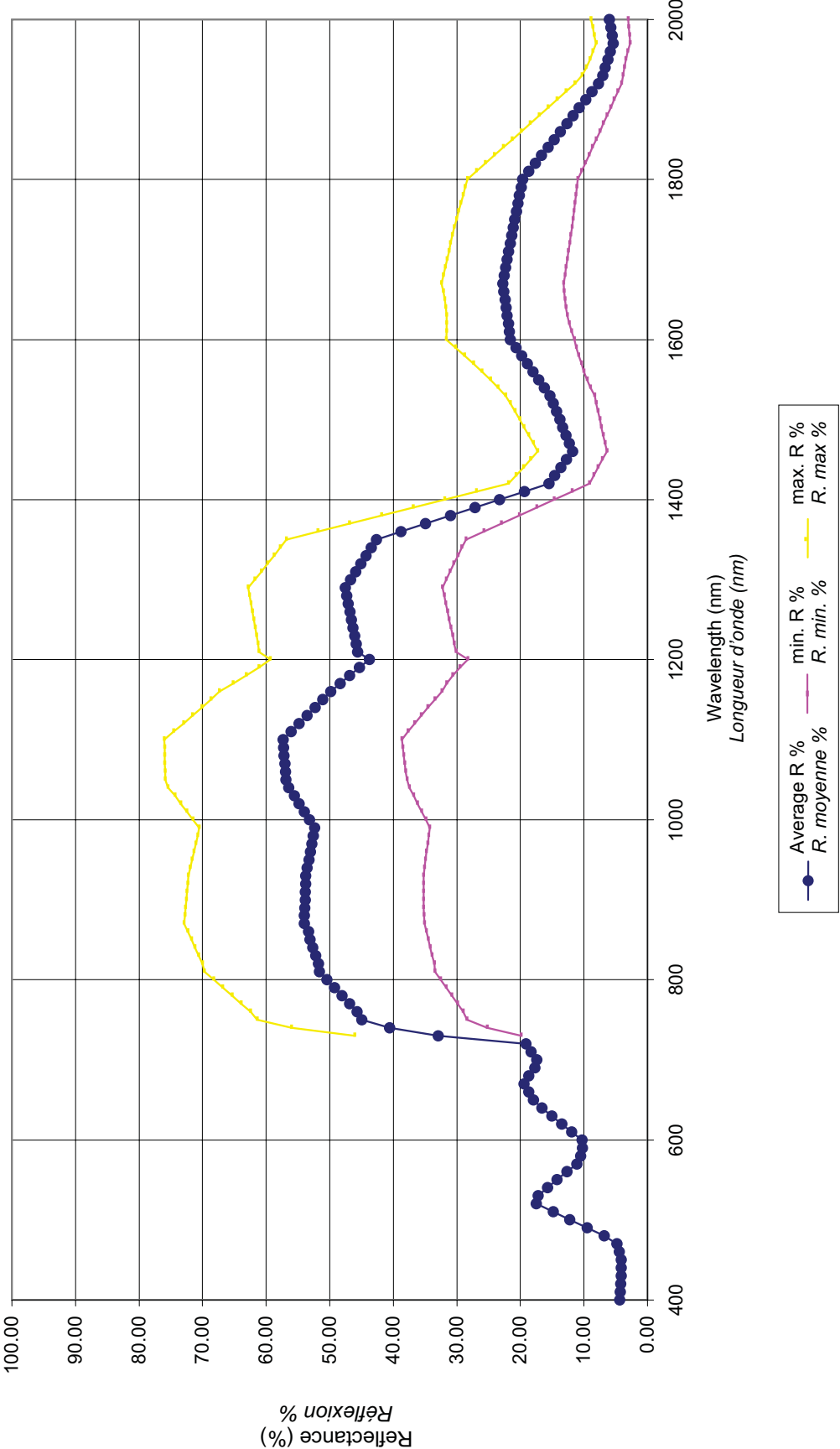


TABLE III CADPAT™ REQUIREMENTS
BROWN

TABLEAU III EXIGENCES RELATIVES AU DCamC^{MC}
BRUN

SPECIFICATIONS / SPÉCIFICATIONS:									
CIE 1931/CIE LAB 1936									
ILLUMINANT C. 2 deg.									
specular component included									
composante spéculaire incluse									
Wavelength Longueur d'onde	Reflection Réflexion	ST.DEV. Écart type	x		y		D.W. nm		Refl. Min Réfl. min.
nm	%	%							%
400	5.26								0.3802
410	5.19								0.3649
420	5.11								9.30
430	5.04								583.00
440	4.97								31.60
450	4.94								L*
460	5.13								36.50
470	5.31								a*
480	6.34								b*
490	7.72								14.50
500	8.90								
510	9.30								
520	9.71								
530	9.29								
540	8.51								
550	7.83								
560	7.50								
570	7.16								
580	8.44								
590	10.40								
600	12.06								
610	12.51								
620	12.95								
630	14.20								
640	15.65								
650	16.89								
660	17.62								
670	18.36								
680	17.59								
690	16.65								
700	16.44								
710	17.29								
720	25.34	11.17							14.18
730	32.97	13.10							19.86
740	40.59	15.38							25.21
750	44.94	16.50							28.43
760	45.73	16.76							28.98
770	46.90	17.02							29.88
780	48.07	17.29							30.78
790	49.25	17.58							31.67
800	50.41	17.87							32.55
810	51.60	18.17							33.43
820	51.80	18.25							33.54
830	52.24	18.37							33.87

TABLE III CADPAT™ REQUIREMENTS
BROWN (cont.)

TABLEAU III EXIGENCES RELATIVES AU DCamC^{MC}
BRUN (suite)

Wavelength Longueur d'onde nm.	Reflection Réflexion %	ST.DEV. Écart type %	Ref. Min Réf. min. %	Ref. Max Réf. max. %	Wavelength Longueur d'onde nm.	Reflection Réflexion %	ST.DEV. Écart type %	Ref. Min Réf. min. %	Ref. Max Réf. max. %
1280	47.32	15.32	32.00	62.63	1720	21.62	9.36	12.26	30.98
1290	47.56	15.30	32.26	62.86	1730	21.39	9.32	12.07	30.70
1300	46.76	15.06	31.70	61.82	1740	21.15	9.28	11.87	30.43
1310	45.94	14.84	31.10	60.78	1750	20.91	9.18	11.73	30.08
1320	45.12	14.64	30.48	59.76	1760	20.66	9.08	11.58	29.73
1330	44.31	14.46	29.85	58.77	1770	20.41	8.98	11.43	29.39
1340	43.50	14.30	29.20	57.79	1780	20.15	8.88	11.27	29.04
1350	42.69	14.16	28.53	56.84	1790	19.91	8.79	11.11	28.70
1360	38.80	13.05	25.76	51.85	1800	19.65	8.70	10.95	28.36
1370	34.92	11.94	22.98	46.86	1810	18.66	8.28	10.38	26.94
1380	31.04	10.83	20.21	41.87	1820	17.67	7.86	9.81	25.53
1390	27.16	9.72	17.44	36.88	1830	16.68	7.44	9.23	24.12
1400	23.28	8.61	14.66	31.89	1840	15.68	7.02	8.66	22.70
1410	19.39	7.51	11.89	26.90	1850	14.69	6.60	8.09	21.29
1420	15.51	6.40	9.11	21.91	1860	13.70	6.18	7.52	19.88
1430	14.58	6.13	8.45	20.71	1870	12.70	5.76	6.94	18.46
1440	13.66	5.88	7.79	19.54	1880	11.71	5.34	6.37	17.05
1450	12.74	5.65	7.09	18.38	1890	10.72	4.92	5.80	15.64
1460	11.82	5.44	6.38	17.26	1900	9.73	4.50	5.23	14.23
1470	12.32	5.65	6.67	17.97	1910	8.73	4.08	4.65	12.81
1480	12.82	5.87	6.95	18.69	1920	7.74	3.66	4.08	11.40
1490	13.33	6.09	7.24	19.42	1930	7.07	3.22	3.84	10.29
1500	13.82	6.32	7.51	20.14	1940	6.65	3.01	3.64	9.66
1510	14.33	6.55	7.78	20.87	1950	6.23	2.85	3.39	9.08
1520	14.83	6.78	8.05	21.61	1960	5.83	2.74	3.10	8.57
1530	15.34	7.01	8.32	22.35	1970	5.42	2.69	2.72	8.11
1540	16.23	7.28	8.95	23.51	1980	5.60	2.76	2.84	8.37
1550	17.11	7.62	9.49	24.73	1990	5.79	2.84	2.95	8.63
1560	18.01	8.02	9.99	26.03	2000	5.99	2.92	3.07	8.90
1570	18.90	8.47	10.42	27.37					
1580	19.79	8.97	10.82	28.75					
1590	20.68	9.50	11.18	30.19					
1600	21.58	10.07	11.51	31.64					
1610	21.75	9.83	11.92	31.58					
1620	21.92	9.65	12.28	31.57					
1630	22.09	9.52	12.58	31.61					
1640	22.27	9.45	12.82	31.72					
1650	22.44	9.44	13.00	31.89					
1660	22.61	9.49	13.12	32.10					
1670	22.79	9.61	13.18	32.39					
1680	22.56	9.55	13.00	32.11					
1690	22.32	9.50	12.82	31.81					
1700	22.09	9.45	12.64	31.54					
1710	21.86	9.40	12.45	31.26					

FIGURE 3 CADPAT™ (TW)

COLOUR: BROWN

FIGURE 3 DCamC^{MC} (RBT)

COULEUR: BRUN

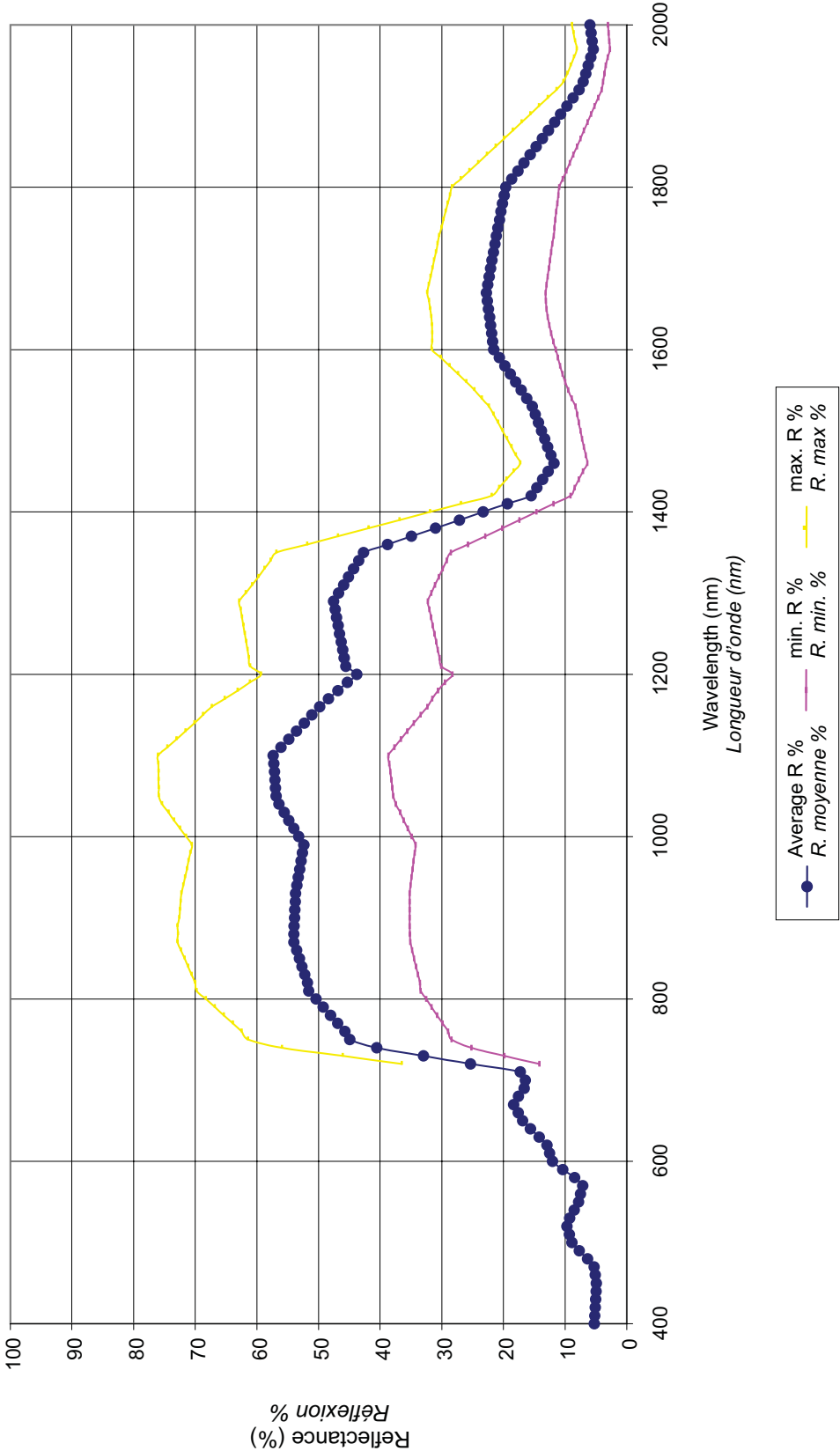


TABLE IV CADPAT™ REQUIREMENTS
BLACK

TABLEAU IV EXIGENCES RELATIVES AU DCamC^{MC}
NOIR

SPECIFICATIONS / SPÉCIFICATIONS:

CIE 1931/CIE LAB 1971
ILLUMINANT C, 2 deg.
spectral component included
composante spectrale incluse

x
y
Y%
DW,nm
S%
L*
a*
b*

0,3188
0,3224
2,68
582,34
4,01
18,71
0,41
1,21

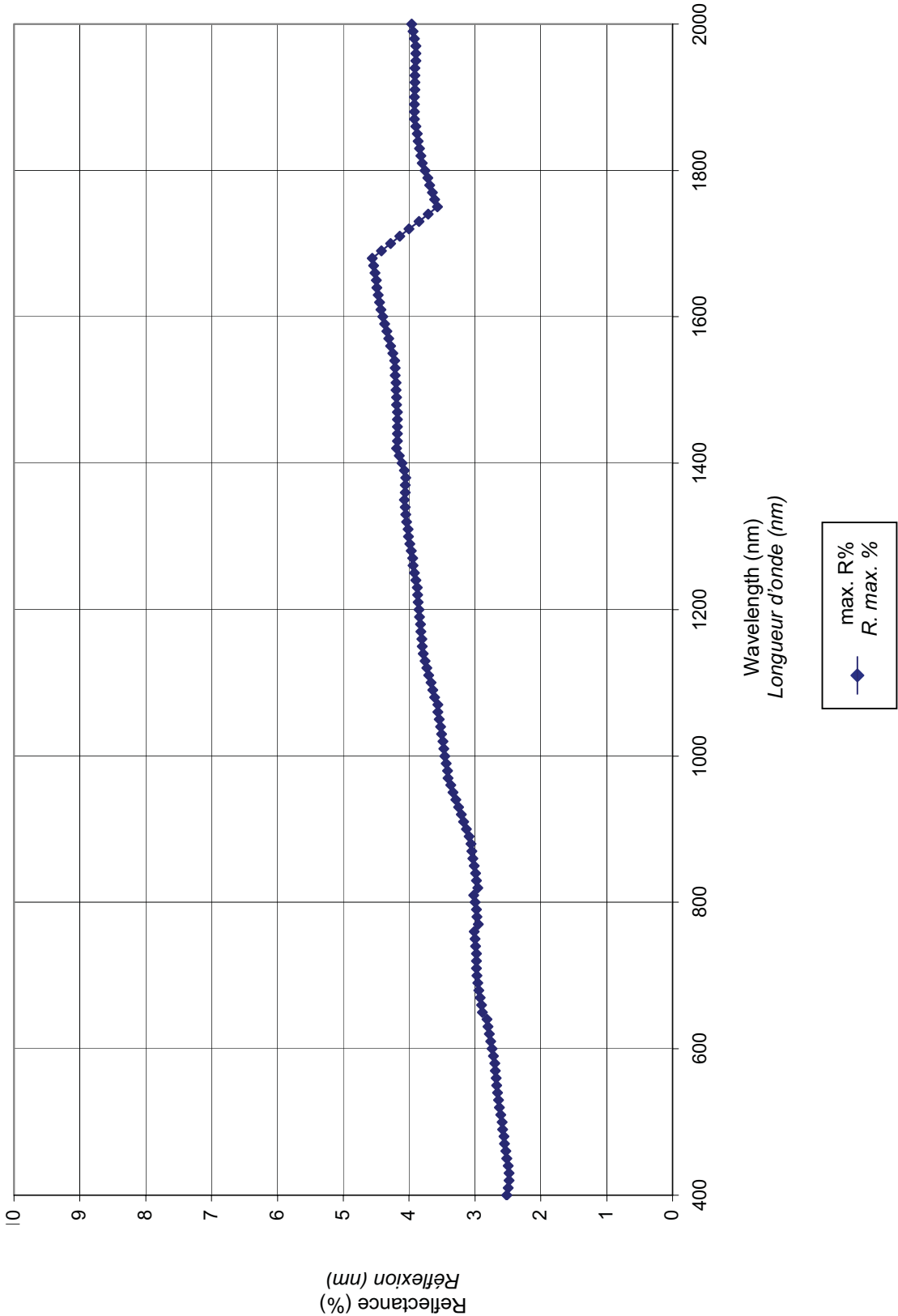
Wavelength (nm) Longueur d'onde (nm)	Reflection % Réflexion %	Wavelength (nm) Longueur d'onde (nm)	Reflection % Réflexion %	Wavelength (nm) Longueur d'onde (nm)	Reflection % Réflexion %	Wavelength (nm) Longueur d'onde (nm)	Reflection % Réflexion %
400	2,52	830	2,98	1260	3,94	1690	4,42
410	2,50	840	2,99	1270	3,95	1700	4,28
420	2,48	850	3,01	1280	3,97	1710	4,14
430	2,48	860	3,03	1290	3,99	1720	4,00
440	2,50	870	3,05	1300	4,01	1730	3,85
450	2,52	880	3,06	1310	4,02	1740	3,71
460	2,53	890	3,09	1320	4,04	1750	3,57
470	2,55	900	3,13	1330	4,05	1760	3,61
480	2,56	910	3,17	1340	4,06	1770	3,65
490	2,58	920	3,21	1350	4,07	1780	3,69
500	2,59	930	3,25	1360	4,06	1790	3,72
510	2,61	940	3,29	1370	4,06	1800	3,76
520	2,63	950	3,33	1380	4,05	1810	3,80
530	2,64	960	3,37	1390	4,07	1820	3,82
540	2,66	970	3,41	1400	4,11	1830	3,84
550	2,67	980	3,42	1410	4,15	1840	3,86
560	2,68	990	3,44	1420	4,19	1850	3,88
570	2,69	1000	3,46	1430	4,18	1860	3,90
580	2,70	1010	3,47	1440	4,18	1870	3,92
590	2,72	1020	3,49	1450	4,18	1880	3,92
600	2,74	1030	3,51	1460	4,18	1890	3,92
610	2,76	1040	3,52	1470	4,18	1900	3,92
620	2,78	1050	3,54	1480	4,19	1910	3,91
630	2,80	1060	3,56	1490	4,19	1920	3,91
640	2,82	1070	3,56	1500	4,20	1930	3,91
650	2,89	1080	3,61	1510	4,20	1940	3,91
660	2,90	1090	3,64	1520	4,21	1950	3,90
670	2,92	1100	3,67	1530	4,21	1960	3,90
680	2,94	1110	3,70	1540	4,22	1970	3,90
690	2,96	1120	3,73	1550	4,25	1980	3,92
700	2,97	1130	3,76	1560	4,28	1990	3,94
710	2,98	1140	3,79	1570	4,31	2000	3,96
720	2,98	1150	3,80	1580	4,34		
730	2,98	1160	3,81	1590	4,37		
740	2,99	1170	3,82	1600	4,40		
750	3,00	1180	3,83	1610	4,43		
760	3,01	1190	3,84	1620	4,45		
770	2,95	1200	3,85	1630	4,47		
780	2,97	1210	3,86	1640	4,49		
790	2,98	1220	3,87	1650	4,50		
800	3,00	1230	3,88	1660	4,52		
810	3,02	1240	3,90	1670	4,54		
820	2,96	1250	3,92	1680	4,56		

FIGURE 4 CADPAT™ (TW)

COLOUR: BLACK

FIGURE 4 DCamC^{MC} (RBT)

COULEUR: NOIR



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.

SPECIFICATION

FOR

CADPAT™ (AR)

[CANADIAN DISRUPTIVE PATTERN (ARID)]

SPÉCIFICATION

DCamC^{MC} (RA)

[DESSIN DE CAMOUFLAGE CANADIEN,

(RÉGIONS ARIDES)]

1. SCOPE

1.1 Scope. This specification covers the technical performance requirements for both colour and Infra-red Reflectance for CADPAT™ (AR), Canadian Disruptive Pattern Arid. It is intended for use, when specified, for all textiles used by the Canadian Forces for operational clothing and personal equipment. Any allowed deviations from the requirements stated herein shall be clearly defined in procurement documents.

1.2 The information contained herein is Copyright to Her Majesty the Queen of Canada, as is its associated pattern. The term CADPAT™, with and without extensions, is a registered Trademark belonging to the Department of National Defence. Any of the data contained in this specification, and its associated pattern, may be used only for goods for Canada. The printed textile and any items made therefrom shall be for the sole end use of DND. There shall be no selling or offering for sale of goods incorporating the CADPAT™ pattern and colours to any person or entity other than Canada

1. PORTÉE

1.1 Portée. La présente spécification vise les exigences de rendement technique relatives à la couleur et à la réflectance dans l'infrarouge du dessin de camouflage canadien, régions arides [DCamC^{MC} (RA)]. Elle est destinée à être utilisée, lorsque cela est prescrit, pour tous les tissus employés par les Forces canadiennes dans la confection des vêtements opérationnels et de l'équipement individuel. Tous les écarts autorisés par rapport aux exigences énoncées dans le présent document doivent être clairement définis dans les documents d'achat.

1.2 L'information contenue dans le présent document, ainsi que le modèle associé, sont la propriété de Sa Majesté la Reine du Canada et protégés par droit d'auteur. Le terme DCamC^{MC}, avec ou sans extension, est une marque déposée, propriété du ministère de la Défense nationale. Les données contenues dans la présente spécification et le modèle associé ne peuvent être utilisés que pour des marchandises produites pour le Canada. Les tissus imprimés et tous les articles fabriqués dans ce tissu sont à l'usage final exclusif du MDN. Nul bien incorporant le motif et les couleurs du DCamC^{MC} ne peut être vendu ni offert à toute personne ou entité

OPI/BPR: DSSPM / DAPES 2-11

Canada

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without the Minister's prior written authorization. Explicit in this is that any goods of not first quality produced shall not be released, sold, or offered for sale, directly or indirectly, to any person or corporation other than Canada without the Minister's prior written authorization.

1.2.1 The information, data, know-how, formulas, algorithms, software, processes, systems, methods, designs, text, works, figures, tables, sketches, photographs, plans, drawings, specifications, samples, reports, names, inventions and/or ideas contained herein (hereinafter "Intellectual Property") is the exclusive property of Her Majesty the Queen in Right of Canada as represented by the Minister of National Defence (hereinafter referred to as "DND"). No one has the right to reproduce, disclose, disseminate, or utilize, in any manner or in any form, this Intellectual Property, or any part thereof, without the prior written consent of DND. For further information on the restrictions applicable to this Intellectual Property, or to request consent from DND, please contact the Design Authority, Director Soldier Systems Programme Management, or the Director of Intellectual Property, Department of National Defence, 101 Colonel By Dr., Ottawa, K1A 0K2, Canada.

autre que le Canada sans l'autorisation préalable écrite du ministre. De façon explicite, tout bien qui n'est pas de première qualité ne peut être distribué, vendu ou offert en vente, directement ou indirectement, à toute personne physique ou morale autre que le Canada sans l'autorisation préalable écrite du ministre.

1.2.1 Les informations, données, formules, algorithmes, logiciels, processus, systèmes, méthodes, dessins, ouvrages, figures, tableaux, croquis, photos, plans, dessins, spécifications, échantillons, rapports, noms, inventions ou idées, de même que le libellé ou le savoir-faire figurant aux présentes (ci-après désignés sous le nom collectif « propriété intellectuelle ») sont la propriété exclusive de Sa Majesté la Reine du Chef du Canada, représentée par le ministre de la Défense nationale (ci-après le « MDN »). Nul n'a le droit de reproduire, divulguer, diffuser ou utiliser, de quelque manière ou sous quelque forme que ce soit, cette propriété intellectuelle, en tout ou en partie, sans le consentement écrit préalable du MDN. Pour de plus amples informations sur les restrictions applicables à cette propriété intellectuelle, ou pour demander le consentement du MDN, veuillez contacter l'autorité responsable de la conception, Directeur – Administration du programme de l'équipement du soldat, ou le Directeur – Propriété intellectuelle, ministère de la Défense nationale, 101, promenade Colonel By, Ottawa, K1A 0K2, Canada.

2. APPLICABLE DOCUMENTS

2.1 Government Documents. Copies of this specification may be obtained from the Department of National Defence, Ottawa, Ontario, Canada, K1A 0K2, Attention: DSSPM 2-2.

2.2 Other Publications. The following documents form part of this Specification to the extent specified herein. Effective dates shall be those in effect on the date of manufacture. Sources are as shown.

ASTM

American Society for Testing and Materials
100 Bar Harbor Drive
West Conshohocken, PA
19428, USA

2. DOCUMENTS APPLICABLES

2.1 Documents du gouvernement. Des copies de la présente spécification peuvent être obtenues du ministère de la Défense nationale, Ottawa (Ontario), Canada K1A 0K2, à l'attention de: DAPES 2-2.

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

ASTM

American Society for Testing and Materials
100 Bar Harbor Drive
West Conshohocken, PA
19428-2959 19428, ÉTATS-UNIS

AATCC

American Association of Textile Chemists and Colorists, Technical Manual
P.O. Box 12215,
Research Triangle Park,
North Carolina
27709, USA

AATCC

American Association of Textile Chemists and Colorists, Technical Manual
P.O. Box 12215
Research Triangle Park
North Carolina
27709, ÉTATS-UNIS

CIE

International Committee on Illumination
CIE Central Bureau
Kegelgasse 27, A-1030
Vienna, Austria

CIE

Commission internationale de l'éclairage
Bureau central de la CIE
Kegelgasse 27, A-1030
Vienne, AUTRICHE

or

ou

Information Handling Services

15 Inverness Way East, M/S B203
Englewood, CO
80112-5776, USA

Information Handling Services

15 Inverness Way East, M / S B203
Englewood, CO
80112-5776, ÉTATS-UNIS

2.3 Sealed Patterns. Sealed patterns are made available to the bidders and the contractor(s) as a guide to production. In the case of CADPAT™ the sealed pattern reflects the design, pattern, motifs, repeat, clarity, that is required.

2.3 Modèles réglementaires. Des modèles réglementaires sont mis à la disposition des soumissionnaires et des entrepreneurs comme guide pour la production. Dans le cas du DCamC^{MC}, le modèle réglementaire reflète la conception, le dessin, les motifs, les répétitions et la clarté qui sont requis.

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

DSSPM 253-02 Tissu coton/nylon simple retors, DCamC^{MC} (AR), pour les couleurs, la taille des motifs, la distribution des couleurs, la qualité de l'impression, la pénétration et la clarté

2.4 Order of Precedence.

2.4 Ordre de préséance.

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

2.4.1 En cas d'incohérence entre les documents contractuels, soit le contrat, la spécification et les échantillons réglementaires, l'ordre de préséance est le suivant: le contrat, la spécification et le modèle réglementaire.

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 shall take precedence.

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 For any inconsistency in technical details between languages, the language of the original document, which in this case is English, shall take precedence.

2.4.3 En cas d'incohérence dans les détails techniques, entre les deux langues, la langue du document d'origine, dans ce cas-ci l'anglais, a préséance.

3. REQUIREMENTS

3.1 CADPAT™ (AR) Specifications. The materiel covered by this specification shall be free from imperfections or blemishes such as may adversely affect its appearance or serviceability. For inspection purposes, imperfections and blemishes shall be considered defects when clearly

visible at a normal inspection distance of approximately one metre under good, preferably North Light, lighting conditions.

3.2 Sealed Patterns. Sealed patterns, when furnished, shall constitute the standard only in regard to any properties not defined in this Specification, and in association with any notes which may be included on the reverse side of the sealed pattern tag. Under no circumstance are the Sealed Patterns to be mutilated or cut.

3.3 Colour.

3.3.1 Unless otherwise specified, the printing shall be carried out in a wet process, with dyes. Woven goods shall be pre-dyed prior to printing. Only vat dyestuffs shall be used for any cotton component. Only acid dyestuffs shall be used for any nylon component. Only disperse dyestuffs shall be used for any polyester component. These requirements exist for both dyeing and printing operations.

3.3.2 For CADPAT™ (AR) the colours specified in para 3.8 and Table I below, numerically, must be met, unless otherwise specified in procurement documents, while any sealed pattern provided serves as a guide to the colours. Allowable tolerances are also stated below. Minimal flare when viewed under standard daylight, horizon, and fluorescent light for all colours is required. These colour measurements shall fall within the specified tolerances after 15 laundering cycles when laundered in accordance with the method specified in the applicable cloth specification unless otherwise specified by the applicable cloth specification.

3.3.3 Print Quality. Overall print quality, including colour penetration (i.e. the overall colouring of the wrong side of the printed cloth), uniformity of each colour, clarity, definition,

3. EXIGENCES

3.1 Spécification du DCamC^{MC} (RA). Le tissu visé par la présente spécification doit être exempt d'imperfections ou de défauts qui pourraient nuire à son aspect ou à sa tenue en service. À des fins d'inspection, sont considérés comme défauts ceux qui sont clairement visibles à une distance

d'inspection normale d'environ un mètre sous un bon éclairage, de préférence la lumière du nord.

3.2 Modèles réglementaires. Les modèles réglementaires, quand ils sont fournis, doivent constituer la norme uniquement en ce qui concerne les propriétés qui ne sont pas définies aux présentes, compte tenu des notes qui peuvent figurer au verso de l'étiquette du modèle réglementaire. En aucun cas, les modèles réglementaires ne doivent être endommagés ni coupés.

3.3 Couleur.

3.3.1 Sauf indication contraire, l'impression doit être effectuée selon un procédé au mouillé, avec des colorants. Les tissus doivent être teints au préalable, avant l'impression. Seuls des colorants de cuve doivent être utilisés pour tout élément en coton. Seuls des colorants acides doivent être utilisés pour tout élément en nylon. Seuls des colorants dispersés doivent être utilisés pour tout élément en polyester. Les présentes exigences s'appliquent aux opérations de teinture et d'impression.

3.3.2 Pour le DCamC^{MC} (RA), les couleurs précisées sous forme numérique au paragraphe 3.8 et dans le tableau I ci-dessous doivent être respectées, sauf indication contraire dans les documents d'achat, tous les modèles réglementaires fournis devant servir de guide pour les couleurs. Les tolérances admissibles sont également indiquées ci-dessous. Les tissus doivent présenter un éclat minimal lorsqu'on les examine à la lumière du jour, contre l'horizon et sous une lumière fluorescente, et ce, pour toutes les couleurs. Ces mesures de couleur doivent se situer à l'intérieur des tolérances prescrites après 15 cycles de blanchissage selon la méthode décrite dans la norme applicable au tissu, sauf indication contraire.

3.3.3 Qualité d'impression. La qualité globale de l'impression, y compris la pénétration de la couleur (c.-à-d. la coloration globale de l'envers du tissu imprimé), l'uniformité de chaque couleur, la

evenness, and all other qualities indicative of a good print must be at least as good as depicted by the Sealed Pattern DSSPM 253-02.

3.3.4 Complete penetration of all component fibres in the specified cloth is required. After printing and/or dyeing in an aqueous medium, all fabrics shall be appropriately stabilized by processes

such as drying, heat setting, sanforizing, or other appropriate and durable means, if required to achieve the desired properties defined in the applicable Tables of the cloth specifications. Hand of the finished, printed specified textiles shall be as represented by the appropriate sealed patterns for the finished cloths.

3.3.5 Infra-red Reflection (IRR). The required IRR characteristics are defined in para 3.9 and 3.10.2 and Table II of this specification, and depicted graphically in Figure I of this specification. Unless otherwise specified for the textile on order, these characteristics must be met both when manufactured (new) and after 15 laundering cycles when laundered in accordance with the method specified in the applicable cloth specification.

3.3.6 Finish. No finish will be applied to obtain temporary fabric stability or temporary colour and/or IRR compliance unless required in the applicable textile specification.

3.3.7 Measurement Requirements.

3.3.7.1 All measurements for both colour and infra-red reflection are to be made in accordance with CIE publication 15.2 and ASTM E308.99 using CIE Illuminant C and a 2 degree observer, specular component included. These conditions of measurement must be followed and stated in all test reports.

3.3.7.2 Sample preparation for all chromaticity and IRR measurements shall be in accordance with AATCC Instrumental Measurement Procedure #6, A1.3, non-opaque samples. It has been found that more than one layer of self fabric is 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

clarté, la définition, la régularité, et toutes les autres qualités indicatives d'une bonne impression, doit être au moins aussi bonne que ce qui est indiqué dans le modèle réglementaire DSSPM 253-02.

3.3.4 La pénétration complète de toutes les fibres composant le tissu prescrit est requise. Après l'impression ou la teinture dans un milieu aqueux, tous les tissus doivent être convenablement

stabilisés par des procédés tels que le séchage, le thermofixage, le sanforisage ou tout autre moyen approprié et durable, au besoin, pour obtenir les propriétés désirées définies dans les tableaux applicables de la spécification relative au tissu. La main des tissus prescrits, finis et imprimés, doit être identique aux modèles réglementaires appropriés des tissus finis.

3.3.5 Réflectance dans l'infrarouge (RIR). Les caractéristiques de la RIR requises sont définies aux paragraphes 3.9 et 3.10.2 et dans le tableau II de la présente spécification, et elles sont représentées graphiquement dans la figure I. Sauf indication contraire pour le tissu commandé, ces caractéristiques doivent être respectées tant pour les tissus fabriqués (neufs), qu'après 15 cycles de blanchissage selon la méthode décrite dans la spécification relative au tissu.

3.3.6 Fini. Aucun fini ne sera appliqué pour obtenir une stabilité temporaire du tissu ou le respect temporaire de la couleur ou de la RIR, à moins qu'un tel fini ne soit prescrit dans la spécification relative au tissu.

3.3.7 Exigences relatives aux mesures.

3.3.7.1 Toutes les mesures de couleur et de réflectance dans l'infrarouge doivent être effectuées conformément aux publications CIE 15-2 et ASTM E308.99 à l'aide de l'illuminant C et de l'observateur à 2° de la CIE, composante spéculaire incluse.

3.3.7.2 La préparation des échantillons pour toutes les mesures de couleur et de RIR doit être réalisée conformément à la procédure de mesure instrumentale n° 6 de l'American Association of Textile Chemists and Colorists (AATCC), A1.3, pour des échantillons non opaques. On a constaté que plusieurs épaisseurs de tissu extérieur sont habituellement requises pour donner une lecture uniforme. L'emploi d'un fond noir standard est

conditions.

recommandé. Il incombe à l'opérateur de déterminer et de suivre un protocole standard de préparation des échantillons qui répond aux conditions énoncées.

NOTE: Referee conditions:

- diffuse spectral 8°/hemispherical reflectance factors using a 150 mm diameter integrating sphere accessory coated with BaSO₄
- measurements made at 1 mm intervals over

the entire required range with a fixed spectral bandpass of 5 nm up to 860 nm and a variable spectral bandpass of <20 nm from 860 nm to 2000 nm

- measurement geometry 8° incidence, hemispherical collection (8°/t), with the spectral component included
- referee sample measurement: the irradiated area to be 8 mm x 15 mm with a bandpass of 5 nm (preferred)
- where sample size or other condition dictates, irradiated area may be reduced to 4 mm x 9 mm with the bandpass also reduced to 2 nm
- where it is impractical to follow this preparation method, a single layer of the sample may be backed by NRC (National Research Council) standard black felt backing, Reference REN09870.DAT

REMARQUE: Conditions de référence:

- Facteurs de réflectance spectrale 8° / hémisphérique diffuse utilisant une sphère intégrante de 150 mm de diamètre, enduite de BaSO₄

- Mesures effectuées à intervalles de 1 nm sur toute la plage requise avec une bande passante spectrale fixe de 5 nm à 860 nm et une bande passante spectrale variable < 20 nm entre 860 nm et 2 000 nm

- Géométrie de mesure avec incidence de 8° et collecte hémisphérique (8°/t), composante spectrale incluse
- Mesure des échantillons de référence: la zone irradiée doit être de 8 mm x 15 mm avec une bande passante de 5 nm (de préférence)
- Lorsque la taille des échantillons ou d'autres conditions l'exigent, la zone irradiée peut être réduite à 4 mm x 9 mm et la bande passante à 2 nm
- Quand il est impossible de suivre ce protocole de préparation, on peut placer une seule épaisseur de l'échantillon contre un fond en feutre noir standard du CNRC (Conseil national de recherches du Canada), référence REN09870.DAT

3.8 Colour. The CIE LAB 1976 co-ordinates for illuminant C, 2° observer are:

3.8 Couleur. Les coordonnées CIE LAB de 1976 pour l'illuminant C et un observateur à 2° sont:

Table I Colour Coordinates for CADPAT™ (AR) Colours

	L*	a*	b*
Light Sand / Sable pâle	64	1	20
Dark Sand / Sable foncé	53	6	10
Brown / Brun	34	7	13

Tableau I Coordonnées colorimétriques pour les couleurs du DCamC^{MC} (RA)

3.8.1 Tolerance is plus/minus 2 CIE LAB units for each coordinate (L*a*b* values, not deltas). Maximum tolerance is 2 CIE LAB units.

3.8.1 La tolérance est de +/- 2 unités CIE LAB pour chaque coordonnée (valeurs L*a*b*, pas les valeurs delta). La tolérance maximale est de 2 unités CIE LAB.

3.8.2 Gloss. Gloss values shall be less than 1.5 units at 20, 60, and 85 degrees when gloss is a specified requirement. Gloss is measured in accordance with ASTM D523. The specification and/or technical requirement for the finished textile applicable to the procurement will state whether this condition applies.

3.8.2 Lustre. Les valeurs de lustre doivent être inférieures à 1,5 unité à 20°, 60° et 85° lorsque le lustre est une exigence prescrite. Le lustre est mesuré selon la norme ASTM D523. La spécification ou les exigences techniques pour le textile fini applicables à l'achat indiqueront si cette condition s'applique.

3.9 Infra-red Reflection. Infra-red values required are:

3.9 Réflectance dans l'infrarouge. Les valeurs requises pour l'infrarouge sont les suivantes:

Table II Diffuse Reflectance Factors in % for CADPAT™(AR) Colours

Tableau II Facteurs de réflectance diffuse en % pour les couleurs du DCamC^{MC}(RA)

Wavelength <i>Longueur d'onde</i>	Light Sand / Sable pâle			Dark Sand / Sable foncé			Brown / Brun		
	lower tolerance <i>tolérance inférieure</i>		upper tolerance <i>tolérance supérieure</i>	lower tolerance <i>tolérance inférieure</i>		upper tolerance <i>tolérance supérieure</i>	lower tolerance <i>tolérance inférieure</i>		upper tolerance <i>tolérance supérieure</i>
350	21.2	23.5	25.9	14.1	16	17.9	4.0	5	6.0
400	20.3	22.6	24.9	14.1	16	17.9	4.0	5	6.0
450	20.7	23	25.3	14.1	16	17.9	4.0	5	6.0
500	25.7	28.5	31.4	15.0	17	19.0	4.8	6	7.2
550	30.6	34	37.4	16.7	19	21.3	6.4	8	9.6
600	35.1	39	42.9	21.1	24	26.9	8.0	10	12.0
650	38.5	42.8	47.1	23.8	27	30.2	9.6	12	14.4
700	40.8	45.3	49.8	25.5	29	32.5	10.4	13	15.6
750	42.1	46.8	51.5	27.3	31	34.7	10.8	13.5	16.2
800	43.7	48.5	53.4	29.0	33	37.0	11.2	14	16.8
850	45.0	50	55.0	30.8	35	39.2	11.2	14	16.8
900	45.9	51	56.1	32.6	37	41.4	11.2	14	16.8
950	46.8	52	57.2	33.9	38.5	43.1	11.6	14.5	17.4
1000	47.7	53	58.3	34.8	39.5	44.2	12.0	15	18.0
1050	48.6	54	59.4	35.2	40	44.8	12.4	15.5	18.6
1100	49.5	55	60.5	35.6	40.5	45.4	12.8	16	19.2
1150	50.4	56	61.6	35.6	40.5	45.4	12.8	16	19.2
1200	50.7	56.3	61.9	35.6	40.5	45.4	12.8	16	19.2
1250	51.0	56.7	62.4	36.1	41	45.9	13.2	16.5	19.8
1300	51.3	57	62.7	36.1	41	45.9	13.6	17	20.4
1350	51.3	57	62.7	36.1	41	45.9	13.6	17	20.4
1400	51.3	57	62.7	36.1	41	45.9	13.6	17	20.4
1450	51.3	57	62.7	36.1	41	45.9	13.6	17	20.4
1500	51.3	57	62.7	36.1	41	45.9	13.6	17	20.4
1550	51.3	57	62.7	36.1	41	45.9	14.0	17.5	21.0
1600	51.3	57	62.7	36.1	41	45.9	14.4	18	21.6
1650	51.3	57	62.7	36.1	41	45.9	14.4	18	21.6
1700	51.3	57	62.7	36.1	41	45.9	14.4	18	21.6
1750	51.3	57	62.7	36.1	41	45.9	14.4	18	21.6
1800	50.4	56	61.6	35.6	40.5	45.4	14.4	18	21.6
1850	50.4	56	61.6	35.2	40	44.8	14.4	18	21.6
1900	49.5	55	60.5	34.3	39	43.7	14.4	18	21.6
1950	48.6	54	59.4	33.4	38	42.6	14.4	18	21.6
2000	47.7	53	58.3	32.6	37	41.4	14.4	18	21.6

3.10 Requirement After Laundering.

3.10 Exigence après lavage.

3.10.1 Unless otherwise specified, the colour measurements specified herein shall remain within the original tolerances (+/- 2 CIELAB units) after 15 laundering cycles, when the laundering cycles are carried out in accordance with the methodology prescribed in the applicable textile specification.

3.10.2 Unless otherwise specified, the infra-red reflectance measurements specified herein shall remain within the original tolerances (+/- 10% for light sand; +/- 12% for dark sand; +/- 20% for brown) after 15 laundering cycles, when the laundering cycles are carried out in accordance with the methodology prescribed in the applicable textile specification.

3.11 Piece Marking. Unless otherwise specified, each piece shall have a label attached to the selvage at one end. The label shall be made of linen or heavy cardboard, with a reinforced eyelet for attaching a tying cord, and shall be legibly marked with the following information:

- a) Contractor's identification (name or CA number)
- b) Contract Number
- c) Gross length in metres, including allowance
- d) Net length in metres
- e) Piece number
- f) Number of lengths per piece
- g) Nomenclature/Classification (textile specification)
- h) Colour
- j) NATO Stock Number
- k) Date of manufacture

All of the above information is required when the goods are contracted for and being delivered directly to the Crown. When contracted by a third party with delivery not to the Crown, only (a), (e), (g), (h), (j), and (k) are mandatory. The other information must be readily available to the Crown and/or its contractor if required.

3.10.1 Sauf indication contraire, les mesures de la couleur spécifiées dans les présentes doivent être à l'intérieur des tolérances d'origine (+/- 2 unités CIE LAB) après 15 cycles de lavage, lorsque ces cycles sont réalisés conformément à la méthode prescrite par la spécification applicable au tissu.

3.10.2 Sauf indication contraire, les mesures de la réflectance dans l'infrarouge prescrites aux présentes doivent respecter les tolérances d'origine (+/- 10 % pour le sable pâle; +/- 12 % pour le sable foncé; +/- 20 % pour le brun) après 15 cycles de lavage, lorsque ces cycles sont réalisés conformément à la méthode prescrite par la spécification applicable au tissu.

3.11 Marquage des pièces. Chaque pièce de tissu livrée au Canada doit porter, à une extrémité, une étiquette fixée à la lisière. L'étiquette doit être en toile de lin, en oléfine thermolée 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 (nom ou numéro de CA)
- b) Numéro du contrat
- c) Longueur brute en mètres, y compris la réserve
- d) Longueur nette en mètres
- e) Numéro du rouleau
- f) Nombre de longueurs par rouleau
- g) Nomenclature/classification (spécification relative au tissu)
- h) Couleur
- j) Numéro de nomenclature OTAN
- k) Date de fabrication

Tous les renseignements ci-dessus sont requis lorsque les marchandises sont obtenues dans le cadre d'un contrat et sont livrées directement au gouvernement. Lorsque les marchandises sont obtenues par contrat par une tierce partie sans être livrées au gouvernement, seuls les éléments a), e), g), h), j), et k) sont obligatoires. Les autres renseignements doivent être facilement accessibles pour le gouvernement ou son entrepreneur, le cas échéant.

4. QUALITY CONTROL/INSPECTION

4.1 Unless otherwise specified in the contract or purchase order, the contractor is responsible for

4. CONTRÔLE DE LA QUALITÉ ET INSPECTION

4.1 Sauf indication contraire dans le contrat ou les documents d'achat, l'entrepreneur est tenu

the performance of all inspections and tests as specified herein and to demonstrate that the materiel and services conform to the requirements specified in this Specification. Contractors may utilize their own or any other inspection facility acceptable to the Crown or its designated representative.

Contractors may also utilize their own test facilities so long as Crown approval has been obtained in advance and the conditions stated in ISO quality and manufacturing publications are followed.

4.2 The Crown reserves the right to perform any of the inspections or tests specified herein, where such are deemed necessary to ensure the materiel and/or services submitted to the Crown for acceptance meet all requirements of the contract. This applies equally to materiel contracted for delivery directly to the Department of National Defence or as component parts to a supplier with a contract for products for Defence use.

4.3 Any requirement for test data to be presented at pre-contract award or at pre-production will be stated in procurement documents. Unless otherwise specified, this data shall result from tests carried out on current production, at independent certified laboratories, in full accordance with all specified test methods and conditions, and these shall be included in the laboratory reports. Bidding and/or contractual documents shall include requirements for in-contract testing including: specific tests, their frequency, their source, and their reporting procedure. At a minimum, all shipments of CADPAT™ printed textile shall be accompanied by producer laboratory reports for colour and IRR measurements. These measurements shall have been carried out on the goods being shipped and shall have been carried out on each processed batch, and at least every 5,000 metres.

5. PACKAGING

5.1 Unless otherwise specified, packaging, packing, and marking of shipping containers shall be in accordance with the terms of the contract.

d'effectuer toutes les inspections et les essais prescrits ci-après afin de démontrer que les matériaux et les services sont conformes aux exigences énoncées dans la présente spécification. L'entrepreneur peut utiliser ses propres installations d'inspection ou avoir recours à toute autre installation jugée acceptable par le gouvernement ou son représentant désigné. L'entrepreneur peut également utiliser ses propres installations d'essai, pourvu qu'il ait obtenu à l'avance l'approbation du gouvernement et que les conditions décrites dans les publications de l'ISO sur la fabrication et la qualité soient respectées.

4.2 Le gouvernement se réserve le droit d'effectuer toute vérification ou tout essai jugé nécessaire pour s'assurer que le matériel et les services présentés au gouvernement pour acceptation sont conformes à toutes les exigences énoncées dans le contrat. Ceci s'applique également au matériel obtenu sous contrat qui doit être livré directement au ministère de la Défense nationale ou comme composants livrés à un fournisseur dans le cadre d'un contrat pour des produits à des fins militaires.

4.3 Toute exigence relative aux données d'essai qui doivent être présentées à l'étape de préadjudication ou de présérie sera indiquée dans les documents d'achat. Sauf indication contraire, ces données doivent être obtenues par des essais effectués pendant la production courante dans des laboratoires indépendants accrédités, conformément à toutes les méthodes et conditions d'essai prescrites, et elles doivent figurer dans les rapports de laboratoire. Les documents d'appel d'offres ou du contrat doivent inclure les exigences relatives aux essais pendant l'exécution du contrat, y compris: la définition des essais, leur fréquence, leur source et la production des rapports. Au minimum, tous les lots de tissu DCamC^{MC} imprimé doivent être accompagnés des rapports de laboratoire du producteur pour les mesures de couleur et de RIR. Ces mesures doivent avoir été réalisées sur les marchandises expédiées et effectuées sur chaque lot traité, et à tout le moins, à tous les 5 000 m.

5. CONDITIONNEMENT

5.1 Sauf indication contraire, le conditionnement, l'emballage et le marquage des conteneurs 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 and of the textile specification
- b) NATO Stock number of required item
- c) Nomenclature/Classification (textile specification)
- d) Pre-production requirements
- e) Packaging, packing, and marking of shipping containers
- f) The Design Authority
- g) The Quality Assurance Authority

6.2 Definition of terms.

6.2.1 Design Authority. The Design Authority is the Government agency responsible for the technical aspects of the design and for changes to the design. The Design Authority for this requirement is the Directorate of Soldier Systems Programme Management (DSSPM), Department of National Defence.

6.2.2 Quality Assurance Authority. The Quality Assurance Authority is the Government agency responsible for providing assurance the materiel and services supplied by the contractor are in accordance with the terms of the contract. The Quality Assurance Authority is the Directorate of Quality Assurance (DQA), Department of National Defence.

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. The sealed pattern is a duplicate of the master sealed pattern which is the Department of National Defence's authorized prototype of the item to be produced. Sealed patterns are available for the contractor to use as a *conceptual example for production*. Contractors should note that sealed patterns may not incorporate all the details cited in this Specification and the order of precedence prevails (see para 2.4).

6. REMARQUES

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

- a) le titre, le numéro et la date de la présente spécification et de la spécification relative au tissu
- b) le numéro de nomenclature OTAN des articles requis
- c) la nomenclature ou la classification (spécification relative au tissu)
- d) les exigences de présérie
- e) le conditionnement, l'emballage et le marquage des contenants d'expédition
- f) l'autorité responsable de la conception
- g) l'autorité responsable de l'assurance de la qualité

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 connexe. Dans le cas des articles visés par la présente spécification, 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. 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 modalités du contrat. L'autorité responsable de l'assurance de la qualité est le directeur de l'assurance de la qualité, ministère de la Défense nationale du Canada.

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

6.2.4 Modèle réglementaire. Copie exacte du modèle réglementaire principal, qui est le prototype autorisé par le ministère de la Défense nationale pour l'article qui doit être fabriqué. Les modèles réglementaires sont mis à la disposition de l'entrepreneur comme exemple conceptuel pour la production. Les entrepreneurs doivent prendre note que les modèles réglementaires n'incorporent pas nécessairement tous les détails indiqués aux

présentes, en cas de divergence, l'ordre de
préséance mentionné au paragraphe 2.4 prévaut.

6.2.5 Specification Copies. Copies of this Specification are available from the Department of National Defence, Directorate of Soldier Systems Programme Management, Ottawa, Ontario, K1A 0K2, Attention: DSSPM 2-2.

6.2.5 Copies de la spécification. Des copies de la présente spécification peuvent être obtenues auprès du ministère de la Défense nationale, Direction de l'administration du programme de l'équipement du soldat, Ottawa (Ontario), K1A 0K2, à l'attention: DAPES 2-2.

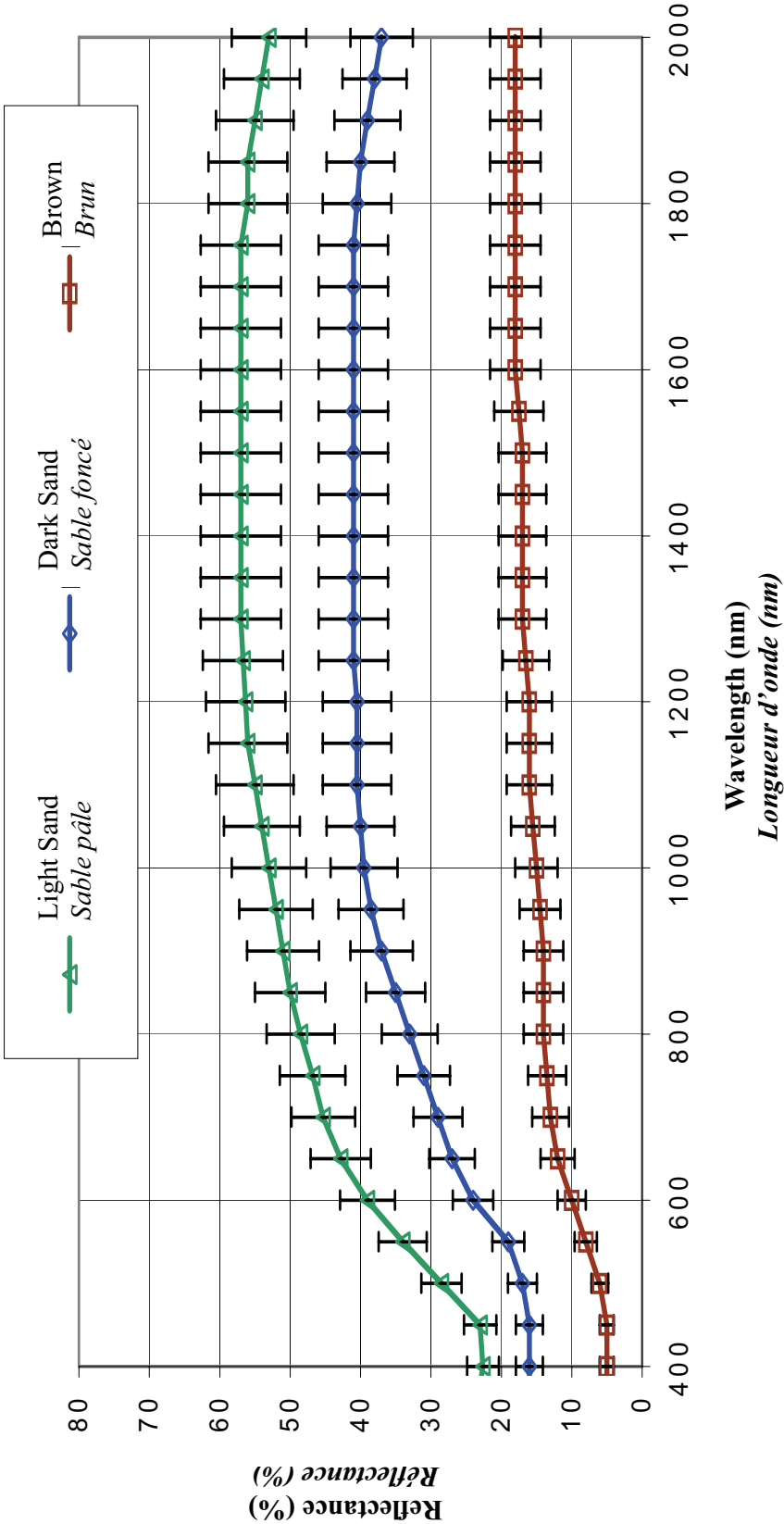
6.3 The production of a product to this specification, or the evaluation of a product to this specification, may require the use of materials and/or equipment that could be hazardous. This specification does not purport to address all safety,

6.3 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

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.

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.

FIGURE I IRR REQUIREMENTS FOR CADPAT™(AR) **FIGURE I EXIGENCES POUR LA RIR POUR LES**
COLOURS LIGHT SAND, DARK SAND **COULEURS SABLE PÂLE, SABLE FONCÉ**
AND BROWN **ET BRUN DU DCamC^{MC} (RA)**



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.

SPECIFICATION

FOR

CLOTH, TWILL, ARAMID/FR VISCOSE,

185 g/m²

1. Description. The fabric shall be 2/1 twill weave. Warp and weft yarns shall be prepared from an intimate blend of aramid and 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 shall be included in order to impart the required electrostatic discharge properties (see Table I). Total carbon antistatic fibre content shall be selected by the producer but shall not exceed 5% of the total blend. Type I cloth shall be printed CADPAT™(TW) and Type II cloth shall be printed CADPAT™(AR). The printed cloth shall be given a durable oil resistant and water repellent treatment. The fabric shall conform to Table I below.

1.1 End Use. The fabric is intended for operational apparel use, for example tank crew and tactical helicopter crew uniforms.

2. Supporting Documents.

Type I D-80-001-500/SF-001
CADPAT™(TW) [temperate woodland]
requirements for colour and infra-red
reflection

SPÉCIFICATION

POUR LE

TISSU À ARMURE SERGÉ

ARAMIDE/RAYONNE ININFLAMMABLE

185 g/m²

1. Description. Le tissu doit être à armure sergé 2/1. Les fils de chaîne et de trame doivent être faits d'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 exigées. Des fibres de carbone antistatiques doivent 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. Le tissu de type I doit être imprimé selon le DCamC^{MC} (RBT) et celui de type II, selon le DCamC^{MC} (RA). Le tissu imprimé doit recevoir un traitement oléofuge et hydrofuge durable. Le tissu doit conformer au tableau I (voir plus bas).

1.1 Utilisation finale. Le tissu est destiné aux tenues opérationnelles, comme les uniformes des équipages de véhicules blindés et d'hélicoptères tactiques.

2. Documents applicables.

Type I D-80-001-500/SF-001
DCamC^{MC} (RBT) [régions boisées
tempérées], exigences relatives à la couleur
et à la réflectance dans l'infrarouge

OPI/BPR: DSSPM / DAPES 2-11

Canada

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Type II DSSPM 2-2-80-501
CADPAT™ (AR) [arid] requirements for
colour and infra-red reflection

Type II DSSPM 2-2-80-501
DCamC^{MC} (RA) [régions arides] exigences
relatives à la couleur et à la réflectance dans
l'infrarouge

3. Sealed Patterns. Sealed patterns of the desired
cloth exhibiting construction and hand, and the
CADPAT™ patterns are listed here.

3. Modèles réglementaires. Voici la liste des
modèles réglementaires de tissu montrant la
confection et la main, ainsi que les modèles du
DCamC^{MC}.

DSSPM 264-08 Cloth, Twill, 50 aramid/50 FR
viscose, 170g/m², for fabric
construction and hand

DSSPM 264-08 Tissu 50 % aramide/50 % viscose
ignifuge à armure sergé, 170g/m²,
pour la confection et la main.

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

DSSPM 259-01 Tissu nylon/coton simple retors
léger, DCamC^{MC} (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 Cloth, Twist, Nylon/Cotton,
Lightweight, CADPAT™ (AR),
construction, colours, motif size,
colour distribution, print quality,
penetration, clarity, hand, finish

DSSPM 253-02 Tissu nylon/coton simple retors
léger, DCamC^{MC} (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

5. Dyeing and Printing. The cloth shall be pre-
dyed if required, followed by screen printing. These
processes 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 shall be kept to a minimum in order to ensure a
soft hand consistent with that of sealed pattern
DSSPM 264-08. Note that the pattern must be clearly
visible and clean on the reverse side of the textile so
good penetration is required.

5. Teinture et impression. Le tissu doit être
préteint s'il y a lieu, puis impression au cadre. Ces
procédés doivent être exécutés selon les bonnes
pratiques commerciales, au 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.

6. Design Authority. The Design Authority is the
government agency responsible for the technical
aspects of the design and changes to the design. The
Design Authority for this requirement is the
Directorate Soldier Systems Programme Management
(DSSPM), Department of National Defence.

6. 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. Dans le cas
du présent besoin, il s'agit du directeur de
l'Administration du programme de l'équipement du
soldat (DAPES) du ministère de la Défense nationale.

7. Quality Assurance. Unless otherwise specified
in the contract or procurement documents, the
contractor is responsible for the performance of all

7. Assurance de la qualité. Sauf indication
contraire dans le contrat ou les documents d'achat,
l'entrepreneur est tenu d'effectuer les inspections

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.

8. The production of a product to this purchase description, or the evaluation of a product to this purchase description, may require the use of materials and/or equipment that could be hazardous. This purchase description 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 purchase description to establish appropriate safety, health and environmental practices and to determine the applicability of regulatory limitations prior to use.

mentionnées ci-après. 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. Le gouvernement se réserve le droit d'effectuer les inspections mentionnées ci-après, 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.

8. La fabrication d'un produit, ou son évaluation conformément à la présente description d'achat, peut nécessiter l'utilisation de matériel ou d'équipement dangereux. La présente description d'achat 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 présente description d'achat 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

Property	Test Method	Specified Requirement	Minimum Acceptable	Maximum Acceptable
Fibre Content			25% aramid 35% FR viscose 1% carbon antistatic	65% aramid 65% FR viscose 10% nylon 5% carbon antistatic
Mass (g/m ²)	5.1*	185	170	200
Woven Fabric Count (yarns per cm)		warp: 23 weft: 22	warp: 22 weft: 21	warp: 24 weft: 23
Breaking Strength (N)	9.1*	warp: 800 weft: 700	warp: 750 weft: 700	
Tearing Strength (N)	12.1*	warp: 40 weft: 40	warp: 35 weft: 35	
Abrasion Resistance	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	>35,000 cycles no thin areas or holes	
Air permeability (cm ³ /cm ² /s)	36*	40	30	
Dimensional Stability (after 3 wash-dry cycles)	58* (III.E3) or 24* (3.E.III)	warp: 2.5% weft: 2.5%		warp: 3.0% weft: 3.0%
Colourfastness to Light	16*** option E	Grey Scale 4 after 40 AATCC Fading Units, for each of the 3 colours		Grey Scale 3 after 40 AATCC Fading Units, for each of the 3 colours
Colourfastness to Crocking (all colours)	116***	dry: GS 5 wet: GS 5		dry: GS 4 wet: GS 3
Water Resistance (as received)	26.2*		80	
Flame Resistance (edge ignition)	27.10*			Average damaged length: warp: 100mm weft: 100mm Average afterflame: 2 .0 sec
Thermal Protective Performance (TPP) with spacer, single layer	78.1*	10	9	

Property	Test Method	Specified Requirement	Minimum Acceptable	Maximum Acceptable
Thermal Shrinkage Resistance (at 260°C)	155.20**** para 7.3.1			5%
Static Decay	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	5110 ***** and Note 1		80%	
Colour and Infra-red Reflectance	D-80-001-500/SF-001 or DSSPM 2-2-80-501 as applicable			

- * CAN/CGSB-4.2 Textile Test Methods
- ** ISO
- *** AATCC American Association of Textile Chemists and Colorists
- **** CAN/CGSB-155.20 Workwear for Protection Against Hydrocarbon Flash Fire
- ***** Federal Test Method Standard No. 191A

Note 1: Seam Efficiency

The fabric shall be tested for seam efficiency according to Federal Test Methods Standard 191A Method 5110. The thread used shall be flame resistant (eg. Kevlar, Nomex, or Kermel). The size shall be that which is specified in the applicable garment specification or that which best suits the sewing operation involved and the equipment used for the operation. The seam used shall be seam type 2.04.03 as specified in CAN/CGSB 54.1. There shall be 10 to 12 stitches per inch (2.5 cm) in the seams. Seam efficiency is a function of both the fabric construction/stability and the seam construction. Because seam construction is critical to the results for this test, it is recommended that the seams be constructed and this testing coordinated by the garment manufacturer rather than the fabric producer.

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 ²)	5.1*	185	170	200
Contexture (fils par cm)		Chaîne: 23 Trame: 22	Chaîne: 22 Trame: 21	Chaîne: 24 Trame: 23
Résistance à la rupture	9.1*	Chaîne: 800 Trame: 700	Chaîne: 750 Trame: 700	
Résistance à la déchirure (N)	12.1*	Chaîne: 40 Trame: 40	Chaîne: 35 Trame: 35	
Résistance à l'abrasion	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	> 35 000 cycles Pas de zones minces ni de trous	
Perméabilité à l'air (cm ³ /cm ² /s)	36*	40	30	
Stabilité dimensionnelle (après trois cycles de lavage-séchage)	58* (III.E3) ou 24* (3.E.III)	Chaîne: 2.5 % Trame: 2.5 %		Chaîne: 3.0 % Trame: 3.0 %
Solidité de la couleur à la lumière	16*** option E	GS: 4 après l'exposition à 40 unités de décoloration de l'AATCC, pour chacune des trois couleurs		GS: 3 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)	116***	Sec: GS 5 Mouillé: GS 5		Sec: GS 4 Mouillé: GS 3
Résistance à l'eau (état à la réception)	26.2*		80	
Résistance à l'inflammation - textiles ou ensembles de textiles orientés verticalement	27.10*			Longueur moyenne endommagée: Chaîne: 100 mm Trame: 100 mm Flamme résiduelle: 2.0s

Propriété	Méthode d'essai*	Exigence spécifiée	Minimum acceptable	Maximum acceptable
Évaluation de la protection thermique, une seule couche d'espacement	78.1*	10	9	
Résistance à la contraction thermique (à 260 °C)	155.20**** par. 7.3.1			5 %
Détérioration statique	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 ± 4000 V; moins de 0,5 s en moyenne jusqu'à la détérioration, pas de mesure supérieure à 0,5 s		
Efficacité des coutures	5110 ***** et note 1		80 %	
Couleur et Réflexion infrarouge	D-80-001-SF-001 ou DSSPM 2-2-80-501 selon le cas			

* CAN/CGSB-4.2 Méthodes pour épreuves textiles

** ISO

*** AATCC American Association of Textile Chemists and Colorists

**** CAN/CGSB-155.20 Vêtements de travail de protection contre les feux à inflammation instantanée causés par des hydrocarbures LPC

***** Federal Test Method Standard No. 191A

Note 1: Efficacité des coutures

L'efficacité des coutures du tissu doit être testée selon la méthode 5110 de la *Federal Test Methods Standard 191A*. Le fil utilisé doit être ininflammable (ex. Kevlar, Nomex ou Kermel). Le titre du fil doit être conforme aux exigences de la spécification relative au vêtement ou être celui convenant le mieux aux coutures et au matériel utilisé. Les coutures doivent être du type 2.04.03, conformément à la norme CAN/CGSB 54.1 et comporter de 10 à 12 points au pouce (2,5 cm). L'efficacité des coutures est fonction de leur construction, ainsi que de la confection et de la stabilité du tissu. Étant donné le caractère essentiel de l'exécution des coutures par rapport aux résultats de l'essai, les coutures doivent être de préférence exécutées par le fabricant du vêtement et non celui du tissu.

NOTICE



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AVIS

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SPECIFICATION

**CLOTH, KNIT,
JERSEY, 60/40 COTTON/NYLON
130 g/m²**

1. SCOPE

1.1 Scope. This specification covers the requirements for the knit cloth to be used as torso textile for a hybrid design combat shirt. The hybrid shirt is intended for wear under the fragmentation vest in operations. It will have a knit body (torso) and woven sleeves so that when under the vest the garment looks like a traditional combat shirt. Colour will be tan with no requirement for printing or infra-red reflection properties.

1.2 Classification. The cloth shall be classified as follows:

Cloth, Knit, Jersey, 60/40 cotton/nylon,
130 g/m², Colour Light Sand

2. APPLICABLE DOCUMENTS

2.1 Government documents. The following documents, of the issue in effect on the date of Invitation to Tender, form a part of this specification to the extent specified herein. Documents referenced within the documents cited herein shall not be applicable to this specification unless the extent is specifically delineated in this specification.

SPECIFICATIONS

D-LM-008-002/SF-001

SPÉCIFICATION

**TRICOT JERSEY,
60 % COTON/40 % NYLON,
130 g/m²**

1 PORTÉE

1.1 Portée. La présente spécification vise les exigences relatives au tricot jersey utilisé comme tissu de corps pour une chemise de combat de conception hybride. La chemise hybride est destinée à être portée sous la veste pare-éclats au cours des opérations. Elle sera constituée d'un corps en tricot (torse) et de manches tissées de façon à ce que sous la veste, le vêtement ressemble à la chemise de combat traditionnelle. Le tissu sera de couleur havane et ne sera pas assujéti aux exigences relatives à l'impression ou à la réflectance dans l'infrarouge.

1.2 Classification. Le tissu sera classifié comme suit :

Tricot jersey, 60 % coton/40 % nylon,
130 g/m², couleur sable pâle

2. DOCUMENTS APPLICABLES

2.1 Documents du gouvernement. Les documents qui suivent, dans leur version en vigueur à la date de l'appel d'offres, font partie intégrante de la présente spécification selon les modalités indiquées ci-après. Les références citées dans ces documents ne sont pas applicables à la présente spécification, à moins que cette dernière ne le précise expressément.

SPÉCIFICATIONS

D-LM-008-002/SF-001

Specification for Marking for Storage and
Shipment, (Appendix 3)

Spécification visant le marquage pour
l'entreposage et l'expédition (annexe 3)

D-80-001-055/SF-001
Label, Clothing and Equipment

D-80-001-055/SF-001
Étiquette du vêtement et de l'équipement

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

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.

Canadian General Standards Board
Gatineau (Québec) K1A 1G6
Telephone: 819-956-0425 or
1-800-665-2472
Email: ncr.cgsb-ongc@pwgsc.gc.ca
Website:
<http://www.pwgsc.gc.ca/cgsb/home/index-e.html>

Office des normes générales du Canada
Gatineau (Québec) K1A 1G6
Téléphone : 819-956-0425 ou
1-800-665-2472
Courriel : ncr.cgsb-ongc@pwgsc.gc.ca
Site Internet : <http://www.tpsgc-pwgsc.gc.ca/cgsb/home/index-f.html>

CAN/CGSB-4.2 Textile Test Methods

CAN/CGSB-4.2 Méthodes pour épreuves textiles

American Association of Textile Chemists and Colorists
P.O. Box 12215
Research Triangle Park, NC
27709, USA
Telephone: 919-549-3526
Website: www.aatcc.org

American Association of Textile Chemists and Colourists
P.O. Box 12215
Research Triangle Park NC 27709
ÉTATS-UNIS
Téléphone : 919-549-3526
Site Internet : www.aatcc.org

ASTM International
P.O. Box C700
West Conshohocken, PA
19428-2959 USA
Telephone: 610-832-9585
Email: service@astm.org

ASTM International
P.O. Box C700
West Conshohocken PA 19428-2959
ÉTATS-UNIS
Téléphone : 610-832-9585
Courriel : service@astm.org

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>

ISO Organisation internationale de normalisation
IHS Canada
240, rue Catherine, pièce 305
Ottawa (Ontario) K2P 2G8
Site Internet : <http://www.ihs.com>
ou ISO : <http://www.iso.org>

NFPA National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471
USA
Telephone: 1-800-344-3555

NFPA National Fire Protection Association
1 Batterymarch Park
Quincy, MA 02169-7471
ÉTATS-UNIS
Téléphone : 1-800-344-3555

2.3 Sealed Patterns.

DSSPM 262-09
Cloth, Knit, Jersey, 60/40 cotton/nylon,
130 g/m², Colour Light Sand

DSSPM 263-02
Cloth, CADPAT[™](AR) for Colour Light
Sand. This is the lightest of the 3 colours
represented.

2.4 Order of precedence.

2.4.1 In the event of inconsistency between contract documents, such as contract, specification, and Sealed Pattern, the order of precedence shall 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 shall take precedence.

2.4.3 In the event of inconsistency within this specification, the Design Authority (DSSPM 2-2) shall be contacted for clarification.

2.4.4 For any inconsistency in technical details between languages, the language of the original document, which in this case is English, shall take precedence.

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

3. REQUIREMENTS

3.1 Sealed Pattern. A Sealed Pattern, when available, will be supplied to the successful bidder. Sealed Patterns shall 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 shall Sealed Patterns be mutilated or cut and must be returned to the Crown on completion of the contract for which it is issued.

2.3 Modèles réglementaires.

DSSPM 262-09
Tricot jersey, 60 % coton/40 % nylon,
130 g/m², couleur sable pâle

DSSPM 263-02
Tissu, DCamC^{MC} (RA) pour la couleur
sable pâle. Il s'agit, parmi les trois couleurs
représentées, de la couleur la plus pâle.

2.4 Ordre de préséance

2.4.1 En cas d'incohérence entre les documents contractuels, soit le contrat, la spécification et les modèles réglementaires, l'ordre de préséance est le suivant : 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, il faut communiquer avec l'autorité responsable de la conception (DAPES 2-2) pour obtenir des précisions.

2.4.4 En cas d'incohérence dans les détails techniques, entre les deux langues, la langue du document d'origine, dans ce cas-ci l'anglais a préséance.

2.4.5 Rien dans le présent document ne remplace les lois et règlements applicables, sauf si une exemption est expressément obtenue.

3. EXIGENCES

3.1 Modèle réglementaire. Un modèle réglementaire, lorsque disponible, sera fourni au soumissionnaire retenu. Il doit constituer 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.

3.2 Description of product. This specification describes a textile which is a 60% cotton/40% nylon intimate blend, knitted in jersey stitch. It must have no melt/no drip characteristics, be moisture wicking, have an anti-microbial finish and meet the requirements specified in Table I.

3.2.1 Cotton. The cotton shall be combed.

3.2.2 Nylon. The nylon shall be first quality, high tenacity, semi-dull nylon 6,6 staple having a nominal cut length of 1-1/2 inches and a round cross section with a nominal denier of 1.6 to 1.8 and a melting point of 260 deg C. No form of nylon waste shall be used, such as undrawn fiber, mixtures of deniers, lusters or cross sections, and waste from any stage of fiber production: whether drawn, undrawn, or mixed or garneted fiber. The contractor shall submit the fibre producer's certification that each lot of staple conforms to the requirements specified herein.

3.2.3 Yarns. The yarns shall be singles made from a blend of 40 ± 2 percent nylon and the remaining percentage cotton, based on the dry weight of the desized cloth when tested as specified in Table I. The yarns shall be drawn a minimum of three times and ring spun with a 3.9 twist multiplier.

3.2.4 Colour. The colour required shall match the applicable Sealed Pattern or numerical colour co-ordinates, whichever is specified. All visual colour matching to Sealed Patterns shall be done in accordance with CAN/CGSB-4.2 No.41 Standard Light Sources for Colour Matching of Textiles. A colour match under North-Sky daylight is the most important measurement. Metamerism shall be no greater than that exhibited by the Sealed Pattern. There shall be no colour change when the textile is exposed to benzyl peroxide containing personal care products. See para 2.3 for sealed pattern references. Alternatively, contractual documents may specify a different colour.

3.2 Description du produit. La présente spécification décrit un tissu constitué d'un mélange intime 60 % coton/40 % nylon tricoté en mailles d'endroit. Le tissu ne doit pas fondre ni dégouliner, et il doit présenter la caractéristique d'imbibition par capillarité, avoir été traité avec un enduit antimicrobien et satisfaire aux exigences prescrites au tableau I.

3.2.1 Coton. Le coton doit être peigné.

3.2.2 Nylon. Le nylon doit être du nylon 6,6 semi-mat à haute ténacité de première qualité, avoir une longueur de pièce nominale de 1 1/2 po et une section circulaire transversale d'un denier nominal de 1,6 à 1,8 et présenter un point de fusion de 260 °C. Il ne faut utiliser aucune forme de déchets de nylon, que ce soit des fibres non étirées ou des mélanges de deniers, de lustres ou de sections transversales, ni aucun déchet d'une étape de production des fibres, que ce soit des fibres étirées, non étirées, mélangées ou défaites à l'effilocheuse. L'entrepreneur doit présenter la certification du fabricant de fibres que chaque lot de fibres est conforme aux exigences énoncées dans la présente spécification.

3.2.3 Fils. Les fils doivent être des fils simples fabriqués à l'aide d'un mélange de 40 ± 2 % nylon, le pourcentage restant étant du coton, selon le poids sec du tissu désencollé lors de l'essai effectué conformément au tableau I. Les fils doivent être étirés au moins trois fois et filés sur continu à anneaux à un coefficient de torsion de 3.9.

3.2.4 Couleur. La couleur requise doit correspondre au modèle réglementaire applicable ou aux couleurs numériques coordonnées, selon le cas. L'appariement des couleurs visibles avec les modèles réglementaires doit être conforme aux exigences de la norme CAN/CGSB-4.2 n° 41, Sources normalisées de lumière pour l'appariement des couleurs des textiles. L'appariement des couleurs à la lumière du nord est le principal critère. Le métamérisme ne doit pas dépasser celui du modèle réglementaire. Aucun changement de couleur ne devrait se produire lorsque le tissu est exposé à du peroxyde de benzyle présent dans des produits de beauté. Voir l'article 2.3 pour les références aux modèles réglementaires. Par contre, les documents contractuels peuvent prescrire une couleur différente.

3.2.5 Dyeing. Dyeing shall be carried out using good commercial practices. Only reactive or vat dyes shall be used for dyeing the cotton component. Sulphur dyes shall not be used. Dyes, treatments, or finishes containing copper shall not be used. Acid dyes shall be used for the nylon component. Complete penetration of both component fibres is required. Colour shall be uniform across both fibres such that colour speckling does not occur. The finished, dyed cloth shall be free from dyeing defects such as shading, streaking, botching, barre, spots, frosting, etc. Hydrophobic softeners or lubricants shall not be used.

3.2.6 Antifungal Assessment. When tested in accordance with Table I, there shall be 100% surface inhibition and no growth free zone (i.e. 0 mm). These requirements are applicable to both testing as received and after 25 launderings.

3.2.7 Antimicrobial Properties. When treated 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. When treated 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. The antimicrobial product must be acceptable for use on a textile substrate that will be in direct, prolonged contact with the skin.

3.3 Workmanship. The material covered by this specification shall be free of imperfections or blemishes such as may adversely affect its appearance, quality or serviceability. Good commercial standard practices shall apply throughout. For inspection purposes, imperfections and blemishes shall 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

3.2.5 Teinture. La teinture doit être effectuée conformément aux bonnes pratiques commerciales. Seuls des colorants réactifs ou des colorants de cuve doivent être utilisés pour teindre le coton. 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. Les colorants acides doivent être utilisés pour teindre le nylon. La pénétration complète des deux fibres composant le tissu est requise. La couleur doit être homogène dans les deux 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. Il ne faut pas utiliser d'adoucissants ni de lubrifiants hydrophobes.

3.2.6 Propriétés antifongique. Lors d'essais réalisés conformément aux exigences citées au tableau I, il doit y avoir une inhibition complète de la formation de champignons à la surface (100 %) et aucune zone de croissance (c'est-à-dire 0 mm). Ces exigences s'appliquent aux résultats d'essais à l'état initial et après 25 lavages.

3.2.7 Propriétés antimicrobien. Lorsque les tissus sont traités au Canada, les produits utilisés pour conférer les propriétés antimicrobiennes au tissu doivent posséder un numéro d'enregistrement de produit antiparasitaire émis par l'Agence de réglementation de la lutte antiparasitaire de Santé Canada à titre d'enduit antimicrobien. Lorsque les tissus sont traités à l'extérieur du pays, les produits utilisés pour conférer les propriétés antimicrobiennes au tissu doivent être enregistrés auprès de l'*United States Environment Protection Agency* en vertu de la *Federal Insecticide, Fungicide, and Rodenticide Act* en tant qu'enduit antimicrobien. L'enduit antimicrobien doit être acceptable aux fins d'utilisation sur un substrat du textile qui sera en contact direct et de façon prolongée avec la peau.

3.3 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 sont 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.

defect shall 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.

Aucun défaut dans le tissage 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.

3.4 Pre-production. When specified in the contract, the contractor shall be required to submit pre-production samples. Pre-production samples shall be completely representative of the final product, and shall be made from the components and materials specified using the equipment and processes, which will be used in quantity production. Test data conforming to Table I may be required as part of the pre-production requirement.

3.4 Présérie. Lorsque prescrit dans le contrat, l'entrepreneur doit soumettre des échantillons de présérie. Ces derniers doivent être tout à fait représentatifs du produit final et être fabriqués à partir des pièces et des matériaux prescrits au moyen de l'équipement et selon les procédés identiques à ceux qui seront utilisés pour la production en grande quantité. Les données d'essai conformes au tableau I peuvent être nécessaires pour l'exigence de présérie.

3.5 Length. Unless otherwise specified, the cloth shall be delivered in pieces of approximately 90 metres with not more than two lengths per piece, the shorter of which shall be not less than 15 metres.

3.5 Longueur. Sauf indication contraire, le tissu doit être livré en pièces d'environ 90 m et comporter un maximum de deux longueurs par pièce. La longueur la plus courte de chaque pièce ne doit pas mesurer moins de 15 m.

3.6 Piece Marking. Each piece of cloth shall have a label attached to the selvage at one end. The label shall be made of linen, spunbonded olefin, or heavy cardboard with a reinforced eyelet for attaching a tying cord. The label shall be legibly printed with the following information:

3.6 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) Contractors 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) Month and year of contract
- (j) NATO Stock Number

- a) Nom 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) Mois et année du contrat
- j) Numéro de nomenclature OTAN

4. QUALITY CONTROL/INSPECTION

4. CONTRÔLE DE LA QUALITÉ ET INSPECTION

4.1 Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as

4.1 Sauf indication contraire dans le contrat ou les bons de commande, l'entrepreneur est tenu d'effectuer les inspections susmentionnées dans la

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 with all requirements of the contract.

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 shall be in accordance with the terms of the contract.

5. CONDITIONNEMENT

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

6. NOTES

6.1 Definition of terms.

6.1.1 Design Authority. The Design Authority is the Government agency responsible for the technical aspects of the design and changes to the design. The Design Authority for this requirement is the Directorate of Soldier Systems Program Management (DSSPM), Department of National Defence.

6. NOTES

6.1 Définition des termes.

6.1.1 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. Dans le cas de la présente spécification, il s'agit du directeur de l'Administration du programme de l'équipement du soldat (DAPES), ministère de la Défense nationale.

6.1.2 Master Sealed Pattern. A Master Sealed Pattern is the authorized prototype of the item to be produced and is held only by the Government.

6.1.2 Modèle réglementaire principal. Prototype autorisé de l'article qui doit être fabriqué dont le gouvernement est le seul détenteur.

6.1.3 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.

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

6.2 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.

6.2 La fabrication d'un produit ou son évaluation conformément à la présente spécification peut 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 présente 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.

7.0 TEST METHOD

Test Method for Vertical Wicking

1. **Conditioning.** - Condition the test specimens to textile standard atmosphere of 65 \pm 2% R.H. and 20 \pm 2/C. in accordance with CAN/CGSB 4.2, Method 2, Conditioning Textile Materials for Testing.

2. **Equipment.** - The equipment required to carry out this test is:

(a) Retort stand with clip; (b) Distilled water; (c) Multiple step stop watch; (d) 250 ml beaker

3. **Preparation of Test Specimens.** - Three specimens, 3 x 15 centimetres long, shall be marked with a graduated scale of 1 centimetre intervals using a felt pen with water-soluble ink for fabrics where the change of colour is negligible as the water is moving along the specimen or by lines of stitching using a contrasting thread on fabrics where there is a marked change in colour when the fabric is wet. The fabric shall be tested in both the lengthwise and crosswise directions. The test should be run at in a conditioning room set at 65% humidity and 21°C.

4. **Method.** - A test specimen shall be suspended vertically over a bath of distilled water that is at room temperature as per Figure 1. Timing shall commence immediately upon the water reaching the first mark on the strip of fabric after the end of the specimen is suspended in the water.

5. **Record the results.** - Record the time it takes for the water to reach each marked interval using a multiple step stop watch. Each test shall run for a maximum of 15 minutes.

6. **Report.** - Report the distance the water travels as a function of the time for both the lengthwise and crosswise direction.

Note: The illustration of specimen at Figure 1 is not to scale. Test is similar to the INDA test.

7.0 MÉTHODE D'ESSAI

Méthode d'essai de l'imbibition par capillarité à la verticale

1. **Conditionnement.** - Conditionner les spécimens d'essai à l'atmosphère normale pour le tissu de 65 \pm 2 % H.R. et de 20 \pm 2 /C conformément aux exigences de la norme CAN/CGSB 4.2, méthode 2, Conditionnement des textiles pour fins d'essais.

2. **Équipement.** - L'équipement nécessaire pour effectuer le présent essai est le suivant :

(a) support universel avec pince; (b) eau distillée; (c) chronomètre pouvant calculer plusieurs temps à la fois; (d) bécher de 250 mL

3. **Préparation des spécimens d'essai.** - Trois spécimens de 15 cm de longueur doivent être marqués d'une échelle graduée à un intervalle de 1 cm à l'aide d'un crayon feutre pour tissus à encre soluble à l'eau si le changement de couleur est minime lorsque le spécimen s'imbibe d'eau, ou à l'aide de lignes de piqûres effectuées au moyen d'un fil de couleur contrastante si le changement de couleur est important lorsque le tissu est mouillé. Le tissu doit être mis à l'essai dans le sens de la longueur et le sens de la largeur. L'essai doit être effectué dans une chambre de conditionnement réglée à un taux d'humidité de 65 % et à une température de 21°C.

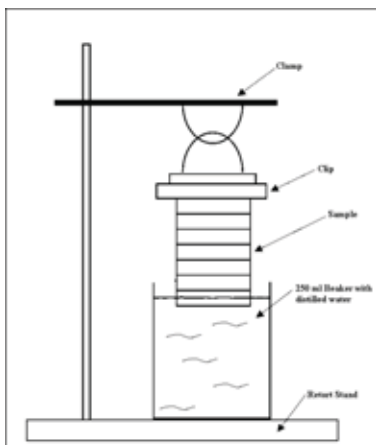
4. **Méthodologie.** - Un spécimen d'essai doit être suspendu au-dessus d'un bain d'eau distillée à la température ambiante, conformément à la figure 1. Le chronométrage doit commencer tout de suite après que l'eau a atteint la première marque sur la bande de tissu, une fois que l'extrémité du spécimen est suspendue dans l'eau.

5. **Consignation des résultats.** - Consigner le temps nécessaire pour que l'eau atteigne chaque intervalle à l'aide du chronomètre. Chaque essai doit durer au plus 15 minutes.

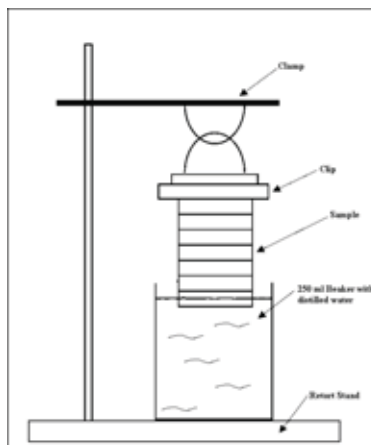
6. **Compte rendu.** - Exprimer la distance parcourue par l'eau comme une fonction du temps écoulé pour le sens de la longueur et le sens de la largeur.

Nota : L'illustration du spécimen à la figure 1 n'est pas à l'échelle. Le présent essai est semblable à

l'essai de l'INDA.



Clamp
Clip
Sample
250 ml Beaker with distilled water
Retort Stand



Attache
Pince
Spécimen
Bécher de 250 ml rempli d'eau distillée
Support universel

TABLE I
FINISHED REQUIREMENTS FOR
CLOTH, KNIT, JERSEY, 60/40 COTTON/NYLON, 130 G/M²

Property	Test Method	Minimum	Maximum
Mass	5.1*	125.5 g/m ²	140 g/m ²
Fibre Content	14*	58% cotton 38% nylon	62% cotton 42% nylon
Count ^{Note 1} (yarns per centimetre)		Wales = 12 Courses = 15	Wales = 16 Courses = 18
Air Permeability	36*	110 cm ³ /cm ² /s	
Abrasion Resistance (9 Kpa)	D3886**	110,000 cycles	
Pilling	51.1*	3-4	
Wicking	DND standard vertical (see below) after 5 laundering ^{Notes 2 & 3}	wales: 15cm in < 16 minutes courses: 15cm in < 16 minutes	
Dimensional Stability after 3 wash-dry cycles	58 III E * Wash temperature of 60°C		± 3.0% wales ± 3.0% courses
Colour Fastness to Laundering	19.1* test No. 2		change GS 4 staining GS 4
Colour Fastness to Light	16**** option E		GS 4 after 20 AATCC fading units
Colour Fastness to Perspiration	23*		change GS 4-5 staining GS 4-5
Stretch Recovery	D2594**		4% growth, measured after 1 hour
Moisture Vapour Transmission Resistance (m ² Pa/W)	ISO 11092***		4.0
Thermal Resistance (CLO)	ISO 11092***		0.15
Thermal Shrinkage -thermal shrinkage	155.20 para 7.3.1 *		5%
-heat resistance			no melt, no drip, and no ignition
Thermal Stability	NFPA 1975 per 8.3 *****		No melt, no drip; no sticking to each other or glass, layers easy to separate
Antibacterial assessment	ISO 20743***	99.9% reduction	
Initial After 25 Washes ^{Note 2}		90% reduction	
Antifungal assessment Initial	AATCC 30**** (Test III)	Refer to paragraph 3.2.6 for performance requirements.	
After 25 Washes ^{Note 2}			

* CGSB -4.2 Textile Test Methods (Canadian General Standards Board)

- ** ASTM Textile Test Methods (American Society for Testing and Materials)
- *** ISO Textile Test Methods (International Standards Organization)
- **** AATCC Textile Test Methods (American Association of Textile Chemists and Colorists)
- ***** NFPA National Fire Protection Association

Note¹ The count of wales and courses has been presented here as a guideline. The final fabric shall be consistent in appearance with the sealed pattern. It shall exhibit the hand, appearance, general stretch characteristics, lustre and uniformity of dye of sealed pattern.

Note² Laundering conditions shall be in accordance with CAN/CGSB-4.2 No.58 Test III E (Tumble dry with an exhaust temperature of <60°C).

Note³ The 12th, 24th, and 25th wash cycles shall be blanks: no detergent, soap, etc. - water only, cycles as specified. The ballast shall be washed by itself prior to the 12th and 24th wash cycles as a blank: no detergent, soap, etc. – water only.

TABLEAU I
EXIGENCES RELATIVES AU
TRICOT JERSEY, 60 % COTON/40 % NYLON, 130 g/m²

Propriété	Méthode d'essai	Minimum	Maximum
Masse	5.1*	125,5 g/m ²	140 g/m ²
Teneur en fibres	14*	58 % coton 38% nylon	62 % coton 42% nylon
Contexture Remarque 1 (fils/cm)		Colonne = 12 Rangée = 15	Colonne = 16 Rangée = 18
Perméabilité à l'air	36*	110 cm ³ /cm ² /s	
Résistance à l'abrasion (9 Kpa)	D3886**	110 000 cycles	
Boulochage	51.1*	3-4	
Imbibition par capillarité	Essai normalisé à la verticale du MDN (voir ci-dessous) après 5 lavages Remarques 2 et 3	Colonne : 15 cm en < 16 min Rangée : 15 cm en < 16 min	
Stabilité dimensionnelle après 3 cycles de lavage et de séchage	58 III E * Lavage à une température de 60 °C		± 3,0 % colonne ± 3,0 % rangée
Solidité de la couleur au lavage	19.1* Essai n° 2		Changement de couleur : échelle de gris 4 Tachage : échelle de gris 4
Solidité de la couleur à la lumière	16**** option E		Échelle de gris 4 après 20 unités de décoloration AATCC
Solidité de la couleur à la sueur	23*		Changement de couleur : échelle de gris 4-5 Tachage : échelle de gris 4-5
Reprise de la taille initiale	D2594**		4 % d'allongement, mesuré après 1 h
Résistance à la vapeur d'eau m ² Pa/W	ISO 11092***		4,0
Résistance thermique (clo)	ISO 11092***		0,15
Retrait thermique	155.20 art. 7.3.1*		5 %
Retrait thermique résistance à la chaleur			Aucune fonte, aucun dégoulinage ni aucune inflammation
Stabilité thermique	NFPA 1975 selon 8.3*****		Aucune fonte, aucun dégoulinage, aucun collage les uns aux autres ni au verre, épaisseurs faciles à

			2012-08-2
			séparer
Propriétés antimicrobien État initial	ISO 20743***	99,9 % d'efficacité lorsque neuf	
Après 25 lavages Remarque 2		90 % d'efficacité après 25 lavages	
Propriétés antifongique État initial	AATCC 30**** (Test III)	Voir l'article 3.2.6 pour les exigences de rendement.	
Après 25 lavages Remarque 2			

- * CAN/CGSB-4.2 Méthodes pour épreuves textiles (Office des normes générales du Canada)
- ** ASTM Textile Test Methods (American Society for Testing and Materials)
- *** Méthodes d'essai des textiles de l'ISO (Organisation internationale de normalisation)
- **** AATCC Textile Test Methods (American Association of Textile Chemists and Colorists)
- ***** NFPA National Fire Protection Association

Remarque 1 : La contexture du tricot (compte des colonnes et des rangées) est présentée dans la présente spécification à titre indicatif. L'aspect du tissu final doit correspondre à celui du modèle réglementaire. Le tissu final doit présenter la main, l'aspect, les caractéristiques générales d'extensibilité, le lustre et l'uniformité de la teinture du modèle réglementaire.

Remarque 2 : Les conditions de lavage doivent être conformes à la norme CAN/CGSB-4.2 No 58 Méthode III E (Séchage en machine à tambour à une température à la sortie < 60 °C).

Remarque 3 : Les 12°, 24° et 25° cycles de blanchissage doivent être sans ajout – aucun détergent, aucun savon, etc. – eau seulement, cycles comme prescrit. Le ballast doit s'être nettoyé de lui-même avant que les 12° et les 24° cycles de blanchissage soient effectués sans ajout – aucun détergent, aucun savon, etc. – eau seulement.

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

**PRE- AWARD, PRE-PRODUCTION,
AND PRODUCTION TECHNICAL REQUIREMENTS
FOR W8476-134002 FOR SHIRT, HOT WEATHER HYBRID**

1. PRE-AWARD TECHNICAL REQUIREMENTS

a. **Physical Samples** - As part of the technical evaluation to confirm a bidder's capability of meeting the technical requirements, one (1) pre-award sample of the Shirt, Hot Weather. Hybrid, CADPAT™ AR is required with the bid. A pre-award sample is required from all bidders. **The size submitted shall be Medium.**

The bidder shall ensure that the required pre-award samples are manufactured in accordance with the technical requirement of this requisition and are fully representative of the bid submitted. The samples will be evaluated for quality of workmanship, conformance to specified materials and measurements, and shall demonstrate capability to meet requisite technologies.

b. **Laboratory Analysis** - In addition, laboratory analysis of the product offered showing test results for specific tests listed at **Annex H** shall be provided with the pre-award samples.

2. PRE-PRODUCTION TECHNICAL REQUIREMENTS

a. **Physical Samples** – A pre-production sample of the garment shall be required from the Contractor unless waived by the DND Technical Authority. Pre-production samples must be completely representative of the final production, being made from parts and materials as specified and by equipment and processes which will be used in quantity production. The pre-production samples shall be **fully compliant** to the technical requirement of this requisition. **The sizes required shall be X-small, Small, Medium, Large, X-large and XX-large.** The pre-production samples shall be CADPAT TW.

b. **Laboratory Analysis** -In addition, laboratory analysis in accordance with those requirements detailed in **Annex H** shall be submitted. In addition to those materials covered in Annex H, the following shall be included:

- **Slide Fasteners** (Annex B (para 3.4.3): Test reports for flame resistance, colourfastness and strength shall be submitted for the slide fastener at the pre-production stage;
- **Hook and Loop Fastener Tape** ((Annex B (para 3.4.4): Certificate of compliance to be submitted at the pre-production stage;
- **Thread** (Annex B, para 3.4.5): Certificate of compliance to be submitted at the pre-production stage; and
- **Cord** (Annex B, para 3.4.6): Certificate of compliance to be submitted at the pre-production stage.

3. PRODUCTION TECHNICAL REQUIREMENTS

- a. **Physical Samples** - A production sample shall not be required from the Contractor unless specifically requested by the DND Technical Authority.
- b. **Laboratory Analysis** -In addition, laboratory analysis in accordance with those requirements detailed in **Annex H** shall be submitted.

NOTES:

Testing: Unless otherwise specified, testing shall be performed by an independent accredited laboratory establishment familiar with textile testing in accordance with the test methods detailed in the applicable document(s). Failure to supply test results that follow these requirements may render the bid non-compliant.

Certificate(s) of Compliance / Certificate(s) of Conformity: Wherever "C of C" appears, the contractor is required to obtain a Certificate of Compliance or Certificate of Conformity from their supplier with the purchase. Certificate(s) of Compliance and Certificate(s) of Conformity shall be current, be dated and signed, and shall clearly indicate compliance of the specific lot delivered. Failure to supply Certificate(s) of Compliance and/or Certificate(s) of Conformity that follow these requirements may render the bid non-compliant.

**EXIGENCES TECHNIQUES
PRÉALABLES À L'ADJUDICATION
DU CONTRAT, EXIGENCES TECHNIQUES
RELATIVES À LA PRÉ-PRODUCTION ET À LA PRODUCTION
POUR W8476-134002 POUR CHEMISE, HYBRIDE, POUR TEMPS CHAUD**

1. EXIGENCES TECHNIQUES RELATIVES À L'ADJUDICATION DU CONTRAT

a. Échantillons – Dans le cadre de l'évaluation technique pour confirmer qu'un soumissionnaire a la capacité de respecter les exigences techniques, ce dernier doit fournir un (1) échantillon de la chemise hybride pour temps chaud, DCamC^{MC} RA avec la soumission. Un échantillon préalable à l'adjudication du contrat est requis de tous les soumissionnaires. **La taille moyenne doit être soumise.**

Le soumissionnaire doit s'assurer que les échantillons requis sont fabriqués conformément à l'exigence technique de la présente réquisition et qu'ils représentent entièrement la soumission déposée. Les échantillons seront évalués selon la qualité d'exécution, la conformité aux tissus prescrits et aux mensurations, et le soumissionnaire doit démontrer sa capacité à respecter les technologies requises.

b. Certificat de conformité – De plus, les certificats de conformité précisés à l'**annexe H** doivent être fournis avec les échantillons.

2. EXIGENCES TECHNIQUES RELATIVES À LA PRÉ-PRODUCTION

a. Échantillons – Un échantillon de pré-production est demandé à tous les entrepreneurs à moins que l'autorité technique du MDN ne l'ait annulé. Les échantillons de pré-production doivent être complètement représentatifs du produit final et fabriqués à partir des parties et des matériaux prescrits et avec les équipements et les processus qui seront utilisés lors de la production en série. L'échantillon de pré-production doit être **complètement conforme** à l'exigence technique de la présente réquisition. **Les tailles t-petit, petit, moyenne, grand, t-grand et tt-grand sont requises à l'étape de la présérie.** Les échantillons de pré-production doivent être CADPAT TW.

b. Analyses en laboratoire – De plus, des analyses en laboratoire conformément aux exigences détaillées à l'**annexe H** doivent être soumises. En plus des matériaux décrits à l'**annexe H**, les éléments suivants doivent être aussi fournis :

- **Fermetures à glissière** (annexe B, article 3.4.3) : Des rapports des essais pour la solidité de la couleur, la force, et la résistance de feu seront soumis pour chaque classe de fermeture à glissière à l'étape de préproduction ;
- **Ruban autoagrippant à boucles et à crochets** (annexe B, article 3.4.4) : un certificat de conformité doit être soumis à l'étape de préproduction;
- **Fil** (annexe B, article 3.4.5) : un certificat de conformité doit être soumis à l'étape de préproduction; et
- **Cordon** (annexe B, article 3.4.6) : un certificat de conformité doit être soumis à l'étape de préproduction.

3. EXIGENCES TECHNIQUES RELATIVES À LA PRODUCTION

a. Échantillons – Un échantillon de production n'est pas requis de la part de l'entrepreneur

à moins que l'autorité technique du MDN ne l'exige spécialement.

- b. Analyses en laboratoire** – En plus du suivant, des analyses en laboratoire conformément aux exigences détaillées à l'**annexe H** doivent être soumises.

NOTES :

Essais : Sauf indication contraire, les essais doivent être menés par un laboratoire agréé spécialisé dans les essais de textiles conformément aux méthodes d'essai détaillées dans les documents applicables. Le défaut de fournir les résultats des essais effectués conformément aux présentes exigences pourrait rendre la présente soumission non conforme.

Certificats de conformité : Lorsque l'inscription « C de C » est présente, l'entrepreneur doit obtenir un certificat de conformité de son fournisseur avec l'achat. Le certificat de conformité doit être valide, daté et signé et doit clairement indiquer la conformité du lot livré. Le défaut de fournir les certificats de conformité pourrait rendre la soumission non conforme.

NOTICE



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AVIS

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**Pre-Award, Pre-Production and Production
Textiles Testing Requirements****Essais de textiles – Exigences préalables à
l'adjudication et exigences relatives à la présérie
et à la production****1.0 General Requirements - Applicable to all**

1.1 Tests and test results are required on each textile at the frequency stated below, before the material is delivered to the Crown or put into garment production, if contractor supplied textile. Complete test results shall also be submitted before the material is put into garment production when there is any change in the source of supply for the material(s). Written approval from the Department of National Defence Technical Authority is required prior to using any material from a new supplier.

1.2 All tests and test methods shall be in accordance with the specified requirements. All testing shall be conducted by an accredited independent laboratory familiar with textile testing. Testing carried out by university textile testing laboratories will also be acceptable. Should a non-accredited laboratory be required for specific tests, approval shall be sought and received in writing from the Technical Authority in advance.

1.2.1 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.

1.3 When a fabric sample is required, the sample and test results shall be from the same lot of fabric. The bidder shall provide written assurance to the fact that all are from the same lot. Fabric and test reports shall be clearly labelled with production lot identification.

1.0 Exigences généraux - Applicable à tous

1.1 Des essais et des résultats d'essai sont 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, si le tissu en question est fourni par l'entrepreneur. Les résultats complets des essais doivent aussi 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 est nécessaire avant d'utiliser un matériau provenant d'un nouveau fournisseur.

1.2 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 seront aussi acceptables. Si un laboratoire non accrédité menait certains essais, il faudrait obtenir au préalable l'autorisation écrite de l'autorité technique.

1.2.1 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.

1.3 Lorsqu'un échantillon de tissu est nécessaire, l'échantillon et les résultats d'essai doivent provenir du même lot de tissu. Le soumissionnaire doit fournir la preuve écrite qu'ils proviennent tous du même lot. Le tissu et les rapports sur les résultats d'essais doivent être clairement étiquetés avec identification de lot de

production.

1.4 Although reporting of test results for all properties may not be required for some items at a certain stage, it is mandatory that the requirements be met in accordance with the applicable specification. The Crown 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.

1.5 If a company has successfully supplied the cloth for a contract for this item within the past two years, then it is acceptable to submit the cloth sample and associated test data from that previous contract for pre-award evaluation.

1.6 The pre-production test results and samples shall be from the production that is intended for use in this current contract, so are production samples and test results. The pre-production samples shall be representative of the finished product in all respects.

1.7 In the event of any inconsistency within this document, including inconsistency between languages, the Technical Authority (DSSPM 2-11) shall be contacted for clarification.

2. DSSPM 2-2-80-239, Cloth, Twill, Aramid/FR Viscose, 185 g/m², CADPAT™(TW) and CADPAT™(AR)

2.1 Pre-Award Requirements

2.1.1 Full test results in accordance with DSSPM 2-2-80-239, Cloth, Twill, Aramid/FR Viscose 185 g/m², including the specified results for CADPAT™(TW) and CADPAT™(AR) prints, must be reported for each fabric.

2.1.2 Submission of one (1) meter full width fabric sample of each of the proposed products, in each CADPAT™ pattern is required.

2.1.3 Bids will be ranked for best compliance to DSSPM 2-2-80-239, including compliance to the applicable CADPAT™ requirements.

1.4 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. Le gouvernement 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.

1.5 Si une entreprise a fourni un tissu de manière satisfaisante dans le cadre d'un contrat pour cet article au cours des deux dernières années, il est alors acceptable de soumettre un échantillon de ce tissu et les données d'essai connexes utilisées pour le contrat précédent aux fins d'évaluation préalable à l'adjudication.

1.6 Les résultats d'essai et les échantillons de présérie, de même que les résultats d'essai et les échantillons de production, doivent provenir du tissu que le soumissionnaire prévoit utiliser pour le présent contrat. Les échantillons de présérie doivent être représentatifs du produit fini sous tous les rapports.

1.7 En cas d'incohérence dans l'énoncé de ce document, incluant l'incohérence entre les langues, il faut communiquer avec l'autorité technique (DAPES 2-11) pour obtenir des précisions.

2. DSSPM 2-2-80-239, Tissu, armure sergé, aramide/viscose ignifuge, 185 g/m², DCamC^{MC}(RBT) et DCamC^{MC}(RA)

2.1 Exigences préalables à l'adjudication

2.1.1 Il faut présenter un rapport sur les résultats complets des essais effectués conformément au document DSSPM 2-2-80-239, Tissu, armure sergé, aramide/viscose ignifuge, 185 g/m², y compris les résultats spécifiés pour DCamC^{MC}(RBT) et DCamC^{MC}(RA).

2.1.2 En ce qui concerne le tissu proposé, il faut en soumettre un échantillon pleine largeur d'un (1) mètre, dans chaque DCamC^{MC} motif.

2.1.2 Les soumissions seront classées selon leur degré de conformité aux exigences du document DSSPM 2-2-80-239, y compris aux exigences

relatives au motif DCamC^{MC} applicables.

2.2 Pre-Production Requirements

2.2.1 After award of contract and prior to commencing garment production, full test results in accordance with DSSPM 2-2-80-239, Cloth, Twill, Aramid/FR Viscose 170 g/m² for the fabric production lots that will be used in garment production must be reported. Test results are required for each CADPATTM pattern.

2.2.2 Submission of two (2) meters full width fabric sample of each CADPATTM pattern is required.

2.3 Production Requirements

2.3.1 For each new production lot, colour and/or print run, or new dye lot, of fabric used in garment production, or when the source of supply changes, full test results in accordance with DSSPM 2-2-80-239, Cloth, Twill, Aramid/FR Viscose 185 g/m² must be reported.

2.3.2 A one (1) meter full width fabric sample is required for each new production lot and/or print run of fabric, and when source of supply changes.

3. DSSPM 2-2-80-248 Cloth, Knit, Jersey, 60/40 Cotton/Nylon, 130 g/m², Canadian Average Green and Light Sand

3.1 Pre-Award Requirements

3.1.1 Full test results in accordance with DSSPM 2-2-80-248, Cloth, Knit, Jersey, 60/40 Cotton/Nylon, 130 g/m², must be reported. Full test results are not required for both colours, however, all tests related to colour properties are required for each colour.

3.1.2 One (1) metre sample of fabric in accordance with DSSPM 2-2-80-248 is required for each colour.

2.2 Exigences relatives à la présérie.

2.2.1 À la suite de l'adjudication du contrat et avant le début de la production en série du vêtement, il faut présenter un rapport sur les résultats complets des essais effectués conformément au document DSSPM 2-2-80-239, Tissue, armure sergé, aramide/viscose ignifuge, 170 g/m², pour les lots de tissus qui serviront à la production du vêtement.

2.2.2 Il faut soumettre un échantillon de tissu pleine largeur de deux (2) mètres, dans chaque DCamC^{MC} motif.

2.3 Exigences relatives à la production

2.3.1 Pour chaque nouveau lot produit, couleur et/ou nouvelle impression, ou lot de teinture, de tissu utilisé pour la production de vêtement, ou dans le cas d'un changement de fournisseur, quand il faut présenter un rapport sur les résultats complets des essais effectués conformément au document DSSPM 2-2-80-239, Tissue, armure sergé, aramide/viscose ignifuge, 185 g/m².

2.3.2 Il faut soumettre un échantillon de tissu pleine largeur d'un (1) mètre pour chaque nouveau lot produit et/ou nouvelle impression de tissu et dans le cas d'un changement de fournisseur.

3. DSSPM 2-2-80-248 Tricot jersey, 60 % coton/40 % nylon, 130 g/m², vert canadien moyen et sable pâle

3.1 Exigences préalables à l'adjudication

3.1.1 Il faut présenter un rapport sur les résultats complets des essais effectués conformément au document DSSPM 2-2-80-248, Tricot jersey, 60 % coton/40 % nylon, 130 g/m². Résultats complets des tests ne sont pas nécessaires pour les deux couleurs, cependant, tous les essais relatives à des propriétés de couleur sont nécessaires pour chaque couleur

3.1.2 En ce qui concerne le tissu proposé, il faut soumettre un échantillon d'un (1) mètre conformément au document DSSPM 2-2-80-248 pour chaque couleur.

3.1.4 For the antimicrobial product used, when treated in Canada a copy of the Pest Control Product Registration information is required. When treated outside of Canada the fabric must be registered with the United States Environment Protection Act in accordance with DSSPM 2-2-80-248, paragraph 3.2.7. Evidence of this registration must be submitted.

3.2 Pre-Production Requirements

3.2.1 After award of contract and prior to commencing garment production, full test results in accordance with DSSPM 2-2-80-248, Cloth, Knit, Jersey, 60/40 Cotton/Nylon, 130 g/m² for the fabric production lots that will be used in garment production must be reported. Test results are required for each colour.

3.2.2 One (1) metre piece of the finished fabric in accordance with DSSPM 2-2-80-248 is required for each colour.

3.2.3 For the antimicrobial product to be used, and when treated in Canada a copy of the Pest Control Product Registration information is required. When treated outside of Canada the fabric must be registered with the United States Environment Protection Act in accordance with DSSPM 2-2-80-248. Evidence of this registration must be submitted.

3.3 Production requirements

3.3.1 For each new production lot, colour, and/or new dye lot of fabric used in garment production, and when source of supply changes, full test results in accordance with DSSPM 2-2-80-238 must be reported.

3.3.2 A one (1) meter full width fabric sample is required for each new production lot and/or dye lot of fabric, and when source of supply changes.

3.1.4 Lorsque l'enduit antimicrobien est appliqué au pays, il faut soumettre le numéro d'enregistrement du produit antiparasitaire. Lorsque l'enduit antimicrobien est appliqué à l'extérieur du pays, le tissu doit être enregistré en vertu de l'*United States Environment Protection Act* conformément au document DSSPM 2-2-80-248, article 3.2.7. Il faut soumettre la preuve de cette inscription.

3.2 Exigences relatives à la présérie

3.2.1 À la suite de l'adjudication du contrat et avant le début de la production en série du vêtement, il faut présenter un rapport sur les résultats complets des essais effectués conformément au document DSSPM 2-2-80-248, Tricot jersey, 60 % coton/40 % nylon, 130 g/m pour les lots de tissus qui serviront à la production du vêtement. Il faut soumettre les résultats d'essais pour chaque couleur.

3.2.2 Il faut soumettre une pièce de tissu fini d'un (1) mètre conformément au document DSSPM 2-2-80-248 pour chaque couleur.

3.2.3 Lorsque les tissus sont traités au Canada, les produits antimicrobiens utilisés doivent être dotés d'un numéro d'enregistrement de produit antiparasitaire. Lorsque les tissus sont traités à l'extérieur du pays, les produits utilisés pour conférer les propriétés antimicrobiennes au tissu doivent être enregistrés auprès de l'*United States Environment Protection Agency* conformément au document DSSPM 2-2-80-248. Il faut soumettre la preuve de cette inscription.

3.3 Exigences relatives à la production

3.3.1 Pour chaque nouveau lot produit, couleur, et/ou lot de teinture de tissu utilisé pour la production de vêtement, et dans le cas d'un changement de fournisseur, il faut présenter un rapport sur les résultats complets des essais effectués conformément au document DSSPM 2-2-80-248.

3.3.2 Il faut soumettre un échantillon de tissu pleine largeur d'un (1) mètre pour chaque nouveau lot produit et/ou lot de teinture de tissu, et dans le cas d'un changement de fournisseur.

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REQUIREMENT FOR SPECIAL SIZES

The term "special size" is defined as those sizes outside the Scale of Measurements in the manufacturing data (Annex B). The Department of National Defence will supply the following body measurements with every order:

- a. Height without shoes;
- b. Chest / bust circumference;
- c. Waist circumference;
- d. Hip circumference (women only);
- e. Neck circumference;
- f. Sleeve length; and
- g. Inseam.

Paper patterns for special size garments shall be the responsibility of the bidder. Special size garments shall be made in full technical compliance with the technical data included as Annexes to this requisition. Please refer to Annex J (Size Roll) for the NATO Stock Number for the special size.

CONDITION POUR DES TAILLES SPÉCIALES

L'expression « taille spéciale » est décrite comme étant les tailles qui sont définies en dehors du tableau de mesures dans les données de fabrication (Annexe B). Le ministère de la Défense nationale fournira les mensurations suivantes avec chaque commande :

- h. Hauteur sans chaussures;
- i. Tour de la poitrine;
- j. Tour de taille;
- k. Tour des hanches (femmes seulement);
- l. Tour du cou;
- m. Longueur de la manche; et
- n. Couture d'entrejambes.

Les patrons de papier pour les vêtements de taille spéciale doivent être la responsabilité du soumissionnaire. Les vêtements de taille spéciale devront être confectionnés conformément aux données techniques qui sont incluses en tant qu'annexes à cette demande. Veuillez se référer à l'annexe J (roulement de taille) pour le nombre courant de l'OTAN pour la taille spéciale.

Size Roll
Roulement de taille

SHIRT, HOT WEATHER HYBRID
GILET HYBRID POUR TEMPS CHAUD

W8476-134002
Annex/Annexe J
August/Aout 2012

SHIRT, HOT WEATHER, HYBRID, AR GILET HYBRIDE POUR TEMPS CHAUD, RA 8415-20-004-8832 A/A					
ITEM NO	NSN NNO	SIZE GRANDEUR	25 CFSD MONTREAL	7 CFSD EDMONTON	TOTAL
0001	8415-20-004-8833	X - Small	2,400	800	3200
	8415-20-004-8834	Small	3,600	1200	4800
	8415-20-004-8835	Medium	9,600	3200	12800
	8415-20-004-8836	Large	3,600	1200	4800
	8415-20-004-8837	X- Large	2,400	800	3200
	8415-20-004-8838	XX-Large	2,400	800	3200
					0
TOTAL			24,000	8,000	32,000
					0
	8415-20-007-0338	Special size Grandeur Spéciale	As when requested Au besoin	As when requested Au besoin	200

Size Roll
Roulement de taille

SHIRT, HOT WEATHER HYBRID
GILET HYBRID POUR TEMPS CHAUD

W8476-134002
Annex/Annexe J
August/Aout 2012

SHIRT, HOT WEATHER, HYBRID, TW GILET HYBRIDE POUR TEMPS CHAUD, RBT 8415-20-005-4383 A/A					
ITEM NO	NSN NNO	SIZE GRANDEUR	25 CFSD MONTREAL	7 CFSD EDMONTON	TOTAL
0002	8415-20-005-4384	Extra Small	450	0	450
	8415-20-005-4385	Small	900	0	900
	8415-20-005-4386	Medium	1,350	0	1350
	8415-20-005-4387	Large	900	0	900
	8415-20-005-4388	X-Large	450	0	450
	TBD	XX-large	450	0	450
	TOTAL		4,500	0	4,500
	8415-20-007-0339	Special Size	As when requested Au besoin	As when requested Au besoin	100



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Annex / Annexe K
W8476-134002
July / juillet 2012

1. Each item of clothing, or matched pair, must be neatly folded in accordance with good commercial practice. Items of clothing with a unit of issue "each" must be packaged individually. All others may be packaged in larger quantities. The package must consist of a polyethylene (or other transparent film) bag or envelope, made of material not less than one (1) mil thickness. The bags must be taped or stapled to effect closure and must be legibly marked (labelled) as follows (only required if the garment's identification markings are not clearly visible through the bag):

NATO Stock Number (NSN) *	- As specified on contract
Nomenclature (including size) **	- As specified on contract
Quantity / Unit of Issue	- As applicable

2. A quantity of packages, of the same NSN, must be packed into a corrugated fibreboard box conforming to Canadian General Standards Board (CGSB) specification CAN/CGSB-43.22-2001. Overall inside dimensions (length, width and depth added) must not exceed 1.5 metres (59 inches). The maximum weight of the box and contents must not exceed 18 kilograms (40 pounds). The box size and content quantity must be uniform for the duration of the contract.
3. Closure of the corrugated fibreboard box must be in accordance with CGSB specification CAN/CGSB-43.22-2001 (Appendix B).
4. On one end of each corrugated fibreboard box, stencilling or labelling in figures as large as practicable in relation to the space available must legibly mark the following information:

NATO Stock Number (NSN) *	- As specified on contract
Nomenclature (including size) **	- As specified on contract
Quantity (per box) / Unit of Issue	- As applicable
Gross Weight (nearest kg)	- As applicable
Contract Serial Number	- As specified on contract

5. On one side of each corrugated fibreboard box, stencilling or labelling in figures as large as practicable in relation to the space available must legibly mark the following information:

Consignee	- As specified on contract
Consignor	- Supplier's name or symbol
Case ____ of ____ cases	- As applicable within each shipment

6. The last shipping container of each shipment must have affixed to the side on which the shipping instructions are contained (paragraph 5), an envelope containing the Packing List, Release Note, etc. This water-resistant envelope must be prominently marked "Packing List Enclosed" and must be securely affixed to the outside wall of the container.
7. Shipments must be palletized in uniform loads and strapped/secured on standard 4-way entry, 48-inch by 40-inch wood or fibreboard non-returnable pallets, to be supplied by the contractor. Total height, including pallet, must not exceed 47 inches.

* Marking must be applied using Bar Code Symbolology UCC/EAN-128 with AI 7001, including HRI (in accordance with D-LM-008-002/SF-001)

** Bilingual format - English/French

Canadian Forces Transportation Packaging Order

CFTPO-GENERAL

Date	15 Jul 2011
Sheet	1 of 2
Nomenclature	As specified on contract
Based on	As specified on contract

Draftsman	H. Fraser
Checker	H. Fraser
Design Engineer	DSCO 5-4-3
Approval Stamp	

CF 798