

## NOTICE

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



## 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 MITTENS, INSERT, EXTREME COLD WEATHER, BROWN

### 1.1 Scope

This specification covers the material, design and construction requirements for the Mittens, Insert, Extreme Cold Weather (ECW), Brown, to be worn with Mittens, Shell, Extreme Cold Weather, MULTICAM®.

### 1.2 Classification

Gloves covered by this Manufacturing Data are classified as follows: Mittens, Insert, Extreme Cold Weather (ECW), Brown.

## 2.0 **GENERAL**

### 2.1 Intellectual Property

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.

### 2.2 Applicable Documents

The following documents form part of this Manufacturing Data to the extent specified, and are supportive of this Manufacturing Data when referenced; all other document references are to be considered supplemental information only. In the event of a conflict between the documents referenced and the contents of this Manufacturing Data, then the contents of this Manufacturing Data must take precedence:

#### DND Drawings (provided upon request)

- Pattern 389372 – Small
- Pattern 389373 – Medium
- Pattern 389374 – Large
- Pattern 389375 – X-Large
- CS-150 Stud Fastener
- CS-151 Eyelet Fastener

CAN/CGSB Standards (email: [ncr.cgsb-ongc@pwgsc.gc.ca](mailto:ncr.cgsb-ongc@pwgsc.gc.ca))

- CAN/CGSB-54.1-M Stitches and Seams, Parts I and II
- CAN/CGSB-86.1-2003 Care Labelling of Textiles
- 4-GP-85M Nylon Thread

FED Standards (Download Documents: <http://assist.daps.dla.mil/quicksearch/>)

- FED-STD-595C - Colors Used in Government Procurement

2.2.1 Order of Precedence

The order of preference is as follows:

- (a) In the event of inconsistency between contract documents, such as contract, Manufacturing Data, drawing and sealed pattern, the order of precedence must be contract, Manufacturing Data, drawing and sealed patterns;
- (b) In the event of a conflict between the text of this manufacturing data and the references cited herein, the text of this manufacturing data must take precedence;
- (c) In the event of inconsistency within this manufacturing data, the Contracting Authority must be contacted for clarification; and
- (d) Nothing in this document supersedes applicable laws and regulations, unless a specific exemption has been obtained.

2.3 Material Standards

The following material standards are supplemental to this standard:

- (a) Specification for Cloth, Cotton, Duck, Unbleached, Plied Yarns;
- (b) Specification for Cloth, Melton, Wool; and
- (c) Specification for Cloth, Taffeta, Nylon.

2.4 Definitions

Earth Tone	By definition, earth tone is considered a color scheme that draws from a color palette of browns, tans, grays, greens, oranges, whites and some reds. The colors in an earth tone scheme are muted and flat in an emulation of the natural colors found in soils, moss, trees and rocks. For the purpose of this specification, the earth tone color (where specified) must be based on the predominantly brown, tan and gray color series (lusterless) within FED STD-595C, where those colors do not include any elements of orange, red and white.
MULTICAM®	A proprietary design for a computer generated digital camouflage pattern patented by Crye Precision Ltd.

2.5 Picture

A picture of the finished product is given at Appendix 1. Note that the colour of the insert is not correct.

## 2.6 Patterns

DND will provide patterns as follows:

- (a) Sealed Sample: DCGEM 380-72-BR-M - Mitten, Insert, Extreme Cold Weather (for glove design only) in size Medium; and
- (e) Paper patterns - Paper patterns for all sizes under Style Code ARCIN33. Size Medium will be used for tendering purposes.

Note: The patterns for the Mitten, Insert, Extreme Cold Weather are to be used for the construction of the Mitten, Insert, Extreme Cold Weather, Brown.

## 3.0 **REQUIREMENTS**

### 3.1 Design

The design must be in accordance with Sealed Patterns DCGEM 380-72-BR-M and must incorporate the following features:

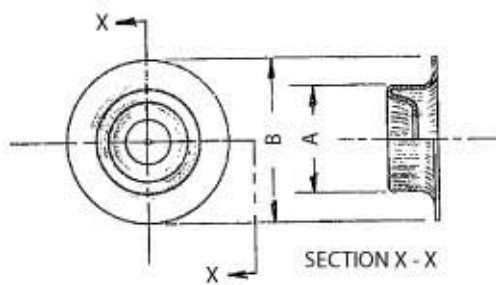
- (a) Slip-on gauntlet style mitt with sidewalls;
- (f) Flared brown coloured gauntlet lined with cotton duck;
- (g) Quilted lining with insulation;
- (h) Lined in its entirety with non-florescent earth-tone coloured wool Melton; and
- (i) Male snaps at cuff for attachment to Mitten, Shells, ECW, MULTICAM®.

### 3.2 Materials

- (a) Palm, Back, Thumb and Sidewalls - The palm, back, thumb and sidewalls must be cut from a quilted fabric consisting of the following:
  - i. One (1) layer of Cloth, Taffeta, Nylon in a non-florescent earth-tone colour (brown);
  - ii. One (1) layer of thermal insulation as follows:
    - a. Batting of man-made and natural fibres including binder fibre and acrylic resin;
    - b. Nominal weight of 150 g/m<sup>2</sup> ( $\pm 10\%$ ); and
    - c. Matador part # BMDW 150 from Matador Converters Co. Ltd., 270 rue de LOUVAIN O., Montreal, PQ H2N 1B6 Tel: 514-389-8221 has been known to meet this requirement;
  - iii. One (1) layer of nylon or polyester spun bonded, non-woven, scrim backing with a maximum weight of 20 g/m<sup>2</sup>; and
  - iv. With the thermal insulation smoothly and evenly spread between the other layers, the layers are then quilted together using lock stitch in accordance with CAN/CGSB-54.1, using 10-13 stitches per 2.5 cm (1 in) with a 50  $\pm$  3mm (2  $\pm$  0.12 in) diamond stitch pattern;
- (b) Lining for Palm, Back, Thumb, Sidewall and Gauntlet - The lining for palm, back, thumb, sidewall and gauntlet must be Cloth, Melton, Wool in a non-florescent earth-tone colour (brown);

- (c) **Cuff Stiffener** - The cuff stiffener must be made from Cloth, Cotton, Duck, Unbleached, Plied Yarns, have a minimum weight of 400 g/m<sup>2</sup>, in a non-florescent earth-tone colour;
- (d) **Thread** - The thread must:
  - i. Be bonded nylon in accordance with CAN/CGSB 4-GP-85, Type 2, Class A, Tex 45;
  - ii. Meet the physical requirements specified in Table 2 of CAN/CGSB 4-GP-85 for Tex Ticket No. R 45 Tex; and
  - iii. Be a colour that matches the leather and/or textile being sewn;
- (e) **Snap Fasteners** - Snap fasteners must brass with nickel plating with a black finish as detailed in the following drawings:

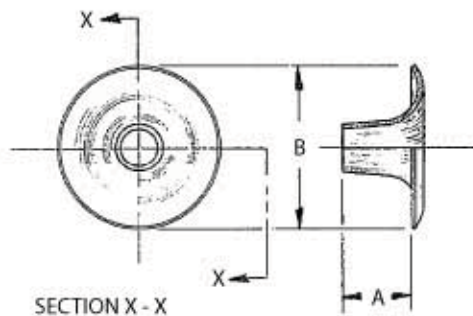
Drawing 1: CS-150 - Stud Fastener



Diameter "A"	10.0 mm (0.39 in)
Diameter "B"	14.0 mm 0.55 in)

Texfast Group Ltd. Part No PRY-3000 has been known to meet these requirements.

Drawing 2: CS-151 - Eyelet Fastener



Barrel Length Diameter "A"	5.54 mm (0.22 in)
Flange Diameter "B"	13.68 mm (0.54 in)

Texfast Group Ltd. Part No. PRY-4000 has been known to meet these requirements.

### 3.3 Sizing

The Mitten Insert must be available in the following sizes:

Table 1: Size Roll for Mitten Shell

Size	Pattern	NSN
A/A	N/A	8415-20-012-8397
Small	389372	8415-20-012-2419
Medium	389373	8415-20-012-2420
Large	389374	8415-20-012-24121
Extra-Large	389375	8415-20-012-2422

### 3.4 Cutting

The component parts of the insert must:

- (a) Be cut using the patterns specified;
- (b) The palm, back, thumb and sidewalls are to be cut from the quilted material;
- (c) The lining for the palm, back, thumb, sidewall and cuff is to be cut from Cloth, Melton, Wool; and
- (d) The cuff stiffener is to be cut from Cloth, Cotton, Duck, Unbleached, Plied Yarns.

### 3.5 Sewing

The following applies.

- (a) All stitching must:
  - i. Be lock stitch Type 301 in accordance with CAN/CGSB 54.1-M with eight (8) to twelve (12) stitches per 2.5 cm (1 in), except for quilting operations that require ten (10) to thirteen (13) stitches per 2.5 cm (1 in);
  - ii. Have seam allowances of 4 mm (0.157 in) unless otherwise specified;
  - iii. Have the beginning and ending of all seams securely back tacked for at least 19 mm (0.75 in); and
  - iv. Not utilize the trimmer on trimmer equipped machines;
- (b) All serging must:
  - i. Be Type 504 or 505 in accordance with CAN/CGSB 54.1-M with a minimum of three (3) threads and eight (8) to ten (10) stitches per 2.5 cm (1 in); and
  - ii. Have a bight sufficiently wide to ensure the edges are securely caught in the serging.

### 3.6 Marking Label

The Mitten Inserts must have the following information legibly and indelibly inscribed in black ink with numerals and letters 6.4 to 9.5 mm (0.25 to 0.375 in) high on the inside (cotton duck) side of the cuff:

- (a) Nomenclature in English and French as follows:

MITTENS, INSERT, ECW, BROWN  
DOUBLURES AMOVIBLES POUR TRÈS GRANDS FROID, BRUN

- (b) Size/taille;
- (c) Year of manufacture/année de fabrication;
- (d) Contract number/numéro du contrat;
- (e) NATO Stock number/numéro de nomenclature de l'OTAN.

### 3.7 Construction

The Mitten Inserts are to be manufactured in accordance with the following requirements:

- (a) **Palm, Back, Thumb and Sidewall** - The palm, back, thumb and sidewall must be joined as follows:

- i. The lining and matching quilted pieces are partnered with all edges flush and the nylon taffeta to the outside, then lock stitched together around all sides at 3 mm (1/8 in) gauge and the edges are serged; and
  - ii. The palm, back, thumb and sidewalls are then assembled and lockstitched together, around all edges at 4 mm (0.157 in) gauge;
- (b) **Gauntlet** - The gauntlet must be assembled and joined as follows:
- i. The lining and the stiffener are assembled with all edges flush and serged together, then stitched to the hand of the insert;
  - ii. The inserts is closed on the last inseam; and
  - iii. The hem of the gauntlet is then finished as follows:
    - a. Hem measuring  $31 \pm 3$  mm ( $1.22 \pm 0.12$  in) is folded under on the longest edge of the cuff, turned toward the cotton duck side; and
    - b. Stitched 6 mm (0.25 in) from the serged edge;
- (c) **Snap Fasteners** - Four (4) snap male portions of a snap fastener must be included on the insert cuff as follows:
- i. Evenly spaced around the perimeter of the cuff such that they align with the female portions of a snap fastener on the Mitten Shell; and
  - ii. Firmly attached through all layers of the hemmed portion of the cuff with the male portion of the snap fastener facing outward;
- (d) **Finishing** - After closing, the Mitten Inserts must be blocked and shaped on a suitably shaped and heated form.

**APPENDIX 1      FINISHED PRODUCT**

