'EXPRESSION OF INTEREST'

CRPF is in the process of revising the QR (Qualitative Requirements) specifications for the **Hand Gloves and Cap Comforter** for all CAPF. The draft revised QRs/Specification of these items are attached herewith.

The interested firms/parties dealing in subject matter are invited to submit their views/opinions on the draft revised QRs/ Specification of the item by **23/08/2025**.

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SPECIFICATION FOR HAND GLOVES

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1.0 SCOPE

1.1 This specification covers the requirement for **"Hand Gloves"** Black or any other shade against CAPF requirements.

1.2 This specification does not specify general appearance, feel etc. of the "Hand Gloves".

2.0 MATERIAL

The hand gloves are crafted from a **three-layer bonded polar fleece fabric with membrane/scrim** and consisting of 100% Polyester with internal (Polyurethane) membrane layer.

3.0 Manufacture

3.1 The shape, dimensions and design of the "Hand Gloves" are shown in Fig.1 & 2.

4.0 WORKMANSHIP AND FINISH

The "Hand Gloves" shall be free from manufacturing defects such as large mends, ladders, dropped stitches, noticeable oil or other stains, holes, cuts, sewing defects, badly shaped fingers, chemical damages and dyeing defects such as uneven dyeing and streakiness or any other defect which may significantly mar the appearance or serviceability of the gloves.

5. Photograph Gloves

Photograph-1

6. MEASURMENT & DIAGRAM

GLOVE

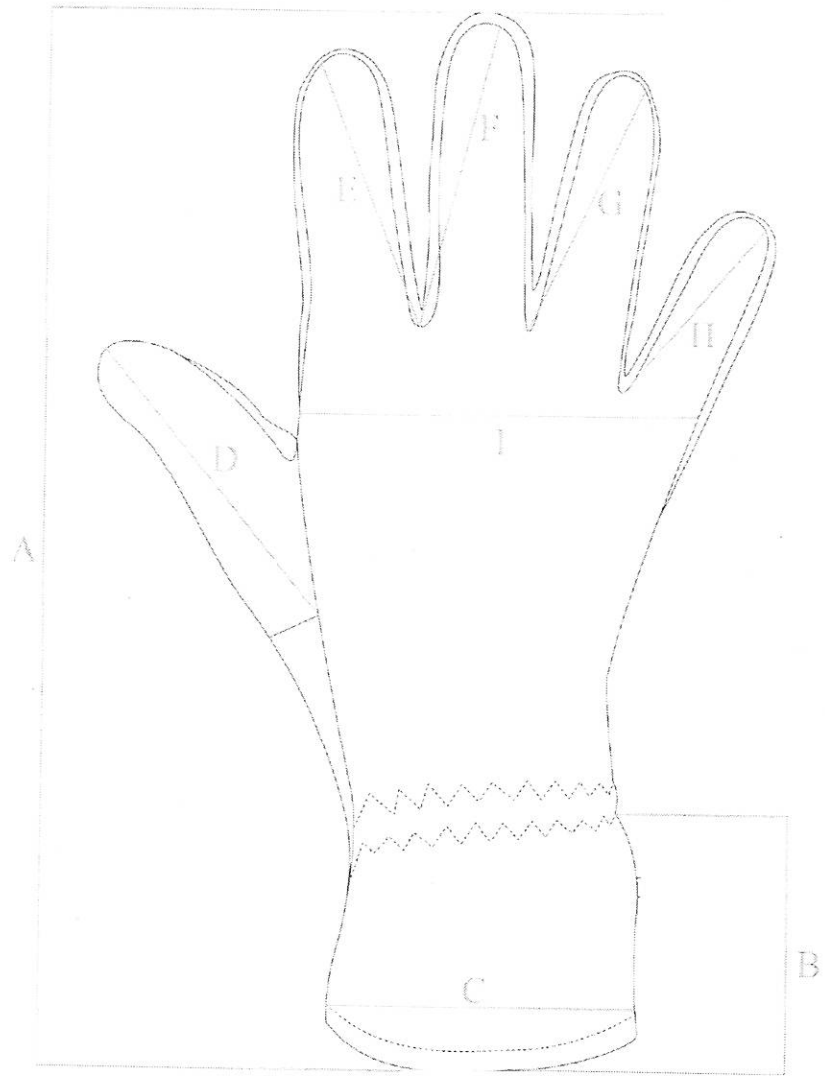

FIGURE- 1

GLOVE

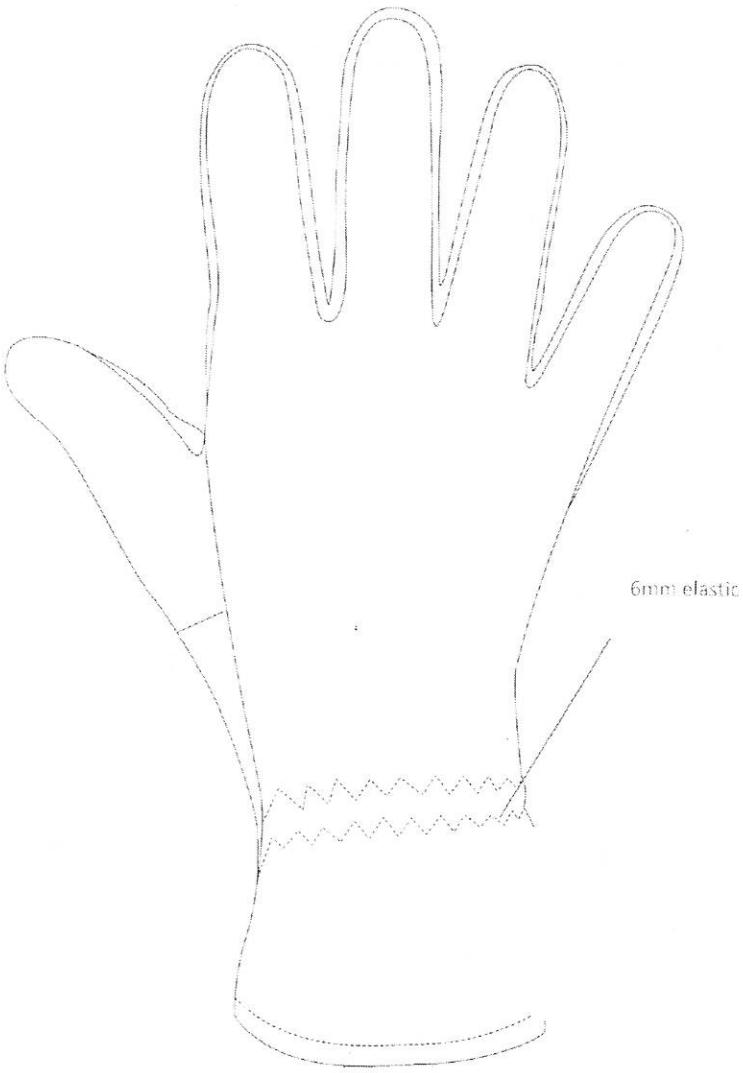

FIGURE-2

7. REQUIREMENTS

7.1 General Description

The ECC (Extreme Cold Climate) Inner Gloves are high-performance under-gloves engineered to offer insulation, dexterity, and durability in sub-zero environments, particularly for tactical operations involving weapon handling. Constructed using 3-layer bonded fleece fabric and premium goat leather, these gloves ensure thermal protection up to **-10°C**, while maintaining a **snug fit**, **superior grip**, and **flexibility** for precise hand movements.

- **Color:** Black or Olive Green (as approved)
- **Available Sizes:** S, M, L, XL (to be specified in tender)
- **Design:** Ambidextrous (right and left specific), ergonomic finger design

7.2 Material Composition

A. Bonded Fleece Fabric (Primary Insulating Layer)

Table-1

Parameter	Specification	Test Method
Construction	3-layer bonded polar fleece fabric with membrane/scrim	Visual + ISO confirmation
Visible Layer	100% Polyester with internal (Polyurethane) membrane layer	Declaration + lab report
Fabric Weight	320 ± 5% GSM	IS 1964-Part I
Bursting Strength	≥ 400 KPa	IS 1966:2022-Part I
Dimensional Stability (Post 3 Washes @ 40°C)	≤ 5% shrinkage (lengthwise & width wise)	ISO 5077 / ISO 6330
Antimicrobial Efficacy	≥ 95% reduction for S. aureus & K. pneumoniae	IS 20743:2021

B. Goat Leather (Grip & Durability Layer)

Table-II

Parameter	Specification	Test Method
Type	Full-Grain Goat Leather	Microscopic inspection
Thickness	≤ 2.0 mm	ASTM D1777:1996
Chromium (VI) Content	≤ 10 mg/kg	ISO 21420
pH	Between 5.0 and 7.5	IS 1390
Ash Content	≤ 13%	IS 199
Flex Endurance	No cracking up to 50,000 cycles	**IS 7016 PART 4 (de-matia)**
Special Feature	Conductive fabric on thumb & index finger for touchscreen use as shown in drawing.	Practical verification

7.3 Performance Parameters – Final Product

Parameter	Requirement	Test Standard
Contact Cold Resistance	Minimum Level 3	EN 511:2006
Convective Cold Resistance	Minimum Level 2	IS 15758-Part I
Air Permeability (Palm/Back @ 100 Pa)	≤ 10 l/m²/sec (both zones)	ISO 11056
Dexterity	Minimum Level 4	ISO 21420
Abrasion Resistance	Minimum Level 1 (≥100 rubs)	EN 511:2006

7.4 Garniture Items & Constructional Features

A. Stitching & Assembly

Component	Specification	Test standard
Thread	3 Ply, 145 Dtex X 3- 100% Polyester.	IS9543 or IS 4229
Stitch Density	Minimum 6 stitches per inch	-
Stitch Type	Lock stitches, single needle, double stitched at stress points	-
Seam Strength	Should withstand minimum 300 N force without failure	-

B. Supporting Accessories

Component	Specification	Test Method
Webbing Tape (Width 12mm)	100% Polyester	IS667
Tensile Strength of Webbing (Tape Width- 12mm)	≥ 1500 N	ISO 13934-1:2013

C. Cuff with Elasticated hem with adjustable and Buckle with adjusting webbing tape as per figure-3.

Components		Requirements	Test method
Webbing tape	Size Width Length	 2.5 cm 10 cm	Visual
	Material	Polyester-100%	ISO 1833-1/AATCC 20/ 20A :2018
	Tensile strength	Min 1500N	ISO 13934-1:2013
	Bonding Strength of wrist straps to outer Gloves	Min 250	ISO 13934-1:2013
Buckle load Strength		Min 300N	ISO 13934-120

- **Design**: Ergonomically contoured, minimal seam interference for comforts

7.5 Suitability & Operational Application

- Designed for sub-zero operations (down to -10°C)
- High grip accuracy and dexterity for weapon handling and fine tasks
- Antibacterial, breathable, and lightweight for extended use
- Washable and durable under field conditions
- Foldable and compact for pocket storage

8. Size chart of Gloves

Size Chart of Gloves- Table-3

Sr. No.	Measurement Parameter	Medium (mm)	Large (mm)	Extra Large (mm)	Tolerance (+/-) mm
I	Overall Length	260	265	270	5
B	Length of Rib	70	70	70	4
A	Width of Cuff Opening	122	126	130	3.5
H	Length of Thumb	115	118	121	2
G	Length of Index Finger	74	77	80	2
F	Length of Middle Finger	88	91	94	2
E	Length of Ring Finger	80	83	86	2
D	Length of Little Finger	62	65	67	2
J	Width of Glove at Back	113	117	121	3.5
C	Palm Height	260	265	270	5

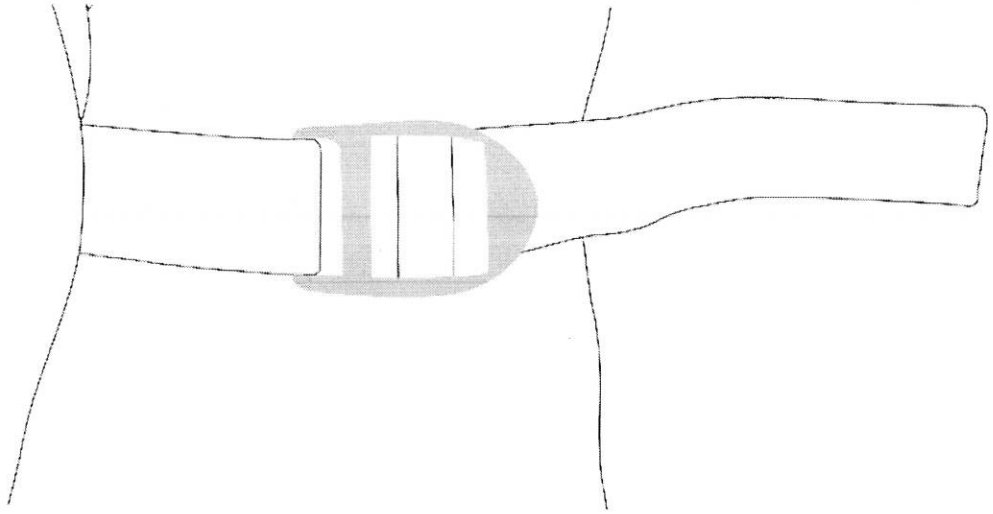

Figure-3

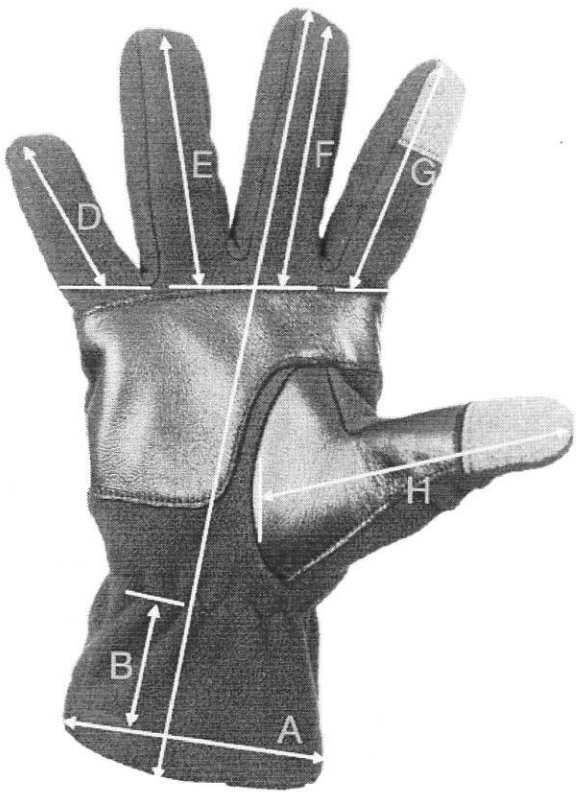

Figure-4

Figure-5

9.0 SAMPLING

9.1 The sampling procedure detailed in 9.2 and 9.3 shall give desired protection to the buyer and the seller, provided that the lot submitted for inspection is homogeneous. To achieve this, the manufacturer shall maintain a system of process control at all stages of manufacturing ensuring the "Hand Gloves" tendering by him for inspection to comply with the requirements of this standard in all respects.

9.2 The manufacturer should offer the stores serially numbered and arranged in such a way that the entire lot is accessible to the inspecting officer. The conforming of a lot to the requirement of this specification shall be determined on the basis of the tests carried out on the samples selected from it. The number of samples shall be selected at random in accordance with Table-4.

Table-4: Number of "Hand Gloves" to be selected from a lot and permissible number of non-conforming "Hand Gloves"

Sample Size, Permissible Number of Non-Conforming and Sample drawn for Testing

Lots Size in No's	Visual Inspection (As per GIL-1 AQL-4)		Physical Parameters (As per SIL-4 AQL-4)		Chemical Parameters (As per SIL-2 AQL-4)	
	Sample Size	Acceptance No (Permissible Number of Non-Conforming)	Sample Size	Acceptance No.	Sample Size	Acceptance No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Up to 280	13	1	13	1	5	0
281-500	20	2	13	1	5	0
501-1200	32	3	20	2	5	0
1201-3200	50	5	32	3	8	1
3201-10000	80	7	32	3	8	1
10001-35000	125	10	50	5	8	1

Note: Sampling officer will select sampling unit randomly and select ultimate items from each sampling unit as per the above table.

9.3 Lot: For the purpose of conformance inspection and test sampling, a lot is defined as all the completed "Hand Gloves" of the same size and type, with same assemblies, produced in one facility, using the same production processes and materials, and being offered for delivery at one time to buyer against a dispatch note.

9.4 The Buyer reserves the right to carry out inspection of bigger lot sizes, even to the extent of 100% inspection, if considered necessary.

9.5 The sample size and the criterion for conformity for various characteristics shall be as follows:

Characteristics	Sample size	Criteria for conformity
Freedom from defects, manufacture and dimensions	All the "Hand Gloves" shall be inspected according to the column 2 of table 4	Non-conforming "Hand Gloves" not to exceed the corresponding number given in col. 3 of table 4
Nature of fibre, Construction, Dimensional change, Scouring loss, pH value, colour	All the "Hand Gloves" shall be inspected according to the column 4 of table 4	All the "Hand Gloves" to satisfy the relevant requirements.

Colour fastness to light	One each for lot size upto 500 "Hand Gloves" and two if lot size is 501 and above	All the "Hand Gloves" to satisfy the relevant requirements.

10. **Marking:** - Inspect marked Hand gloves for clarity, adhesion, and durability. Avoid markings that bleed or peel. The proper marking on Hand Gloves is crucial for regulatory compliance and user safety. If direct marking on the glove is not feasible, the information should be provided on the Taffeta printed label attached on inner side of every pair of Hand Gloves. The marking shall include: -

a) Size of Hand Gloves
b) Instruction regarding maintenance
c) Firm Name/ logo.
d) Name of the Force
e) Year of manufacturing
f) Any other information required by buyer.

11. **Packaging and Packing**: - Hand gloves are carefully inspected, paired, and individually packed in protective plastic bags to prevent contamination and damage. These are then grouped and systematically placed into sturdy corrugated cartons designed to hold specific quantities, ensuring efficient space use and protection during transit. The cartons are securely sealed, labeled with product details, batch numbers, and handling instructions, and finally palletized with stretch wrap for stable shipment. This packing and packaging process guarantee the gloves arrive clean, intact, and ready for distribution.