Annex C
To: W8486-136657

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NOTICE

This document has been examined by the Technical Authority for content and confirmed that it has no references to controlled goods

Pre-Production and Production
Technical Evaluation Plan for the
Interim Extreme Cold Weather Mukluk (ECWM) Assembly

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1.0 General.

1.1 **Evaluation Plan**. This annex describes how The Department of National Defence (DND) is to perform the pre-production and production technical evaluations of Interim Extreme Cold Weather Mukluk (ECWM) Assembly submissions in terms of evaluating physical samples for the quality of workmanship and for their ability to demonstrate capability to meet requisite technologies, and for conformance to specified materials and measurements outlined in **Annex B** (DSSPM 2-3-87-ECWM). The technical portion of the evaluation plan will be done through a technical verification performed by a team of DND Subject Matter Experts (SMEs) with the exception for the conformance to specified materials which will be proven by the submission from the Manufacturer with the appropriate test results from accredited independent laboratories or, when stated, Certificate(s) of Compliance (C of C).

1.1.1 **Technical Verification:** A technical verification will be completed on all bid submissions to determine technical compliance through the examination of the physical examples, mandatory test results, C of C's, and supporting information outlined in paragraphs 1.2 to 1.4.

1.2 **Samples**. As part of the evaluation, to confirm a Manufacturers' capability of meeting the technical and performance requirements, the following samples outlined in Table I must be submitted:

Table I – Physical Samples Of Interim Mukluk To Be Submitted

Requirement – Pre-Production Stage
One (1) pair of the Interim Extreme Cold Weather Mukluk Assembly in the complete size range (size 9, 10, 11, 12, 13, and 14 in medium widths) must be submitted.
Requirement – Production Stage
No requirement for physical samples of the finished boot to be submitted at Production Stage.

1.2.1 The Manufacturer must ensure that the required samples are manufactured in full compliance with the technical and performance requirements outlined in **Annex B** (DSSPM 2-3-87-ECWM) and are fully representative of any quantity production.

1.3 Evaluation of Conformance To Specified Materials And Measurements Outlined In Annex B (DSSPM 2-3-87-ECWM).

1.3.1 **Mandatory Material Testing Information**. As part of the evaluation, to confirm a Manufacturers' capability of meeting the technical and performance requirements, the test results and/or certificates of compliance outlined in Table II must be submitted.

Table II – Mandatory Material Testing Information

Material	Reference in Annex B (DSSPM 2-3-87-ECWM)	Requirement and Reference	Testing Requirements and Frequency	
			Pre-Production	Production
Upper	Paragraph 2.2.1	**COLOUR AND INFRA-RED REFLECTANCE REQUIREMENTS** in accordance with paragraph 2.2.1 and DSSPM 2-2-80-502	A physical sample measuring two metres in length (full width) shall be submitted. Testing shall be done at start of production of the material. Test results done by accredited independent laboratory. The samples and test results submitted at pre-production shall be from the production lot that is intended for use in this current contract. The pre-production samples shall be representative of the finished product in all respects.	When there is any change in the source of supply for the material(s), test results outlined at Pre-Production shall also be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.
Whole Boot	Paragraph 2.5.1	**WHOLE BOOT LEAKAGE TEST** in accordance with Annex B, paragraph 8.2	Certificate of Compliance from the source of supply showing test results from in-house laboratory.	In-house testing to be completed on a minimum of one percent (1%) of each lot of finished boots. It must be demonstrated that a minimum of ninety-five percent (95%) of tested boots passed the leakage requirement.
Upper Materials	Paragraph 3.1.2	**BREAKING STRENGTH** test results in accordance with CAN/CGSB-4.2 Method 9.2	Testing shall be done at start of production of the material. Test results done by accredited independent laboratory. The test results submitted at pre-production shall be from the production lot that is intended for use in this current contract.	When there is any change in the source of supply for the material(s), test results outlined at Pre-Production shall also be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.

Material	Reference in Annex B (DSSPM 2-3-87-ECWM)	Requirement and Reference	Testing Requirements and Frequency	
			Pre-Production	Production
Upper Materials	Paragraph 3.1.3	**TEARING STRENGTH** test results in accordance with CAN/CGSB-4.2 Method 12.1	Testing shall be done at start of production of the material. Test results done by accredited independent laboratory. The test results submitted at pre-production shall be from the production lot that is intended for use in this current contract.	When there is any change in the source of supply for the material(s), test results outlined at Pre-Production shall also be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.
Upper Materials	Paragraph 3.1.4	**WATER REPELLENCE** test results in accordance with CAN/CGSB-4.2 Method 26.2	Testing shall be done at start of production of the material. Test results done by accredited independent laboratory. The test results submitted at pre-production shall be from the production lot that is intended for use in this current contract.	When there is any change in the source of supply for the material(s), test results outlined at Pre-Production shall also be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.
Upper Materials	Paragraph 3.1.5	**WATER RESISTANCE** test results in accordance with CAN/CGSB-4.2 Method 26.5	Testing shall be done at start of production of the material. Test results done by accredited independent laboratory. The test results submitted at pre-production shall be from the production lot that is intended for use in this current contract.	When there is any change in the source of supply for the material(s), test results outlined at Pre-Production shall also be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.

Material	Reference in Annex B (DSSPM 2-3-87-ECWM)	Requirement and Reference	Testing Requirements and Frequency	
			Pre-Production	Production
Bottoming Components	Paragraph 4.2	**SLIP RESISTANCE** test results in accordance with SATRA TM144 OR ASTM F2913.	Certificate of Compliance from the source of supply showing test results from in-house laboratory.	When there is any change in the source of supply for the material(s), test results outlined at Pre-Production shall also be submitted before the material is put into production. DND written approval is required prior to using any material from a new supplier.

1.3.2 **Tests and test results or Certificate of Compliance (C of C):** Tests and test results or Certificate of Compliance (C of C) will be required on each textile component at the frequency stated in Table II before the material is delivered to the Crown or put into garment/end item production, if contractor supplied textile. Test results as specified in Table II shall also be submitted before the material is put into production when there is any change in the source of supply for the material(s). DND written approval is required prior to using any material from a new supplier.

1.3.2.1 Unless otherwise specified, 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 Design Authority in advance.

1.3.2.2 When a fabric sample is required, the sample must be clearly identified and traceable to production lots. Written assurance to the fact that both the fabric sample and test reports are from the same lot. Fabric and test reports shall be clearly labeled with production lot identification.

1.3.2.3 When required, the bidder/contractor must be able to provide the QA documentation to assure the fact that the test results were obtained on fabric from the same production as the submitted sample.

1.3.2.4 When a sample is required for pre-production submission, the sample and associated test results shall be from the first production lot being used for the contract.

1.3.2.5 All of the in-production test results must be submitted through the DND Quality Assurance Representative (DND QAR)

1.4 **Evaluation of quality of workmanship and ability to demonstrate capability to meet requisite technologies**.

1.4.1 **Workmanship and Construction Evaluation**. As part of the evaluation, to confirm a Manufacturers' submission for the quality of workmanship and for the ability to demonstrate capability to meet requisite technologies, the workmanship and construction will be evaluated using the criteria outlined in Table III.

1.4.1.1 **Definitions.**

1.4.1.1.1 **Critical Infraction**. A critical infraction is defined as a non-compliance of a performance requirement deemed essential in Annex B.

1.4.1.1.2 **Deviation**. A deviation is defined as a workmanship or construction issue evaluated to be non-compliant that directly affects serviceability of the boot or affects overall quality assurance.

1.4.1.1.3 **Observation**. An observation is defined as a workmanship or construction issue evaluated to be non-compliant that does not necessarily affect serviceability of the boot but affects overall quality assurance.

1.4.1.2 **Maximum Infractions**. No critical workmanship and construction infractions will be accepted in any of the pre-production or production samples. A maximum of three (3) workmanship and construction deviations will be accepted in any of the pre-production samples or production samples. Note that if a workmanship or construction issue is not listed in Table III, it will be deemed an observation.

Table III – Workmanship and Construction Evaluation

Reference in Annex B (DSSPM 2-3-87-ECWM)	Criteria	Classification (*see Note)		
		Critical	Deviation	Observation
Paragraph 2.2.2 (Colour of Bottoming Components)	The colour of the bottoming components is not white or grey.	X		
Paragraph 2.2.3 (Colour of Fittings)	The colour of the fittings is not white or grey.	X		
Paragraph 2.3 (Weight)	Maximum weight of a size 9M Interim Extreme Cold Weather Mukluk Assembly exceeds 1350.0 grams per boot.	X		
Paragraph 2.4 (Height)	Height (without height of the snow cuff) is less than 13-1/2 inches (34.3 cm) or exceeds 16 inches (40.6 cm).	X		
Paragraph 2.4.1 (Adjustable Snow Cuff)	An adjustable snow cuff was not included at the upper edge of the shaft of the boot.	X		

Reference in Annex B (DSSPM 2-3-87-ECWM)	Criteria	Classification (*see Note)		
		Critical	Deviation	Observation
Paragraph 4.1 (Bottoming Components)	The area directly under the foot/heel must be finished smooth, free of voids or material that may collect moisture.	X		
Paragraph 4.4 (Bottoming Components)	The lug depth or cleat height for any part of the sole must be a minimum of 4.0 mm.	X		
Paragraph 5.2 a. (Removable Liner)	If the removable liner is a two layer system, each layer must be able to detach from each other	X		
Paragraph 5.2 b. (Removable Liner)	The removable liner must be flexible enough to facilitate packing into the large field pack assembly.	X		
Paragraph 5.2 c. (Removable Liner)	The removable liner must incorporate a method of quick attach and detach from the ECWM shell.	X		
Paragraph 6.1 (Mandatory Components / Design Elements)	The Interim ECWM must include an adjustment/closure system that includes the use of eyelets and laces.	X		
Paragraph 6.1 (Mandatory Components / Design Elements)	The ECWM must have round laces of sufficient length to ensure firm closure and easy adjustment.	X		
Paragraph 6.2 (Mandatory Components / Design Elements)	Heel Bar providing secure notch for snowshoes not used.	X		
Paragraph 10.1 (Labeling)	Labeling omitted, incorrect, illegible, or incomplete.	X		
Paragraph 10.2 (Marking of removable pieces)	Marking omitted, incorrect, illegible, or incomplete.	X		
Paragraph 12.0 (Packaging)	Packaging omitted, incorrect, or incomplete.	X		

Reference in Annex B (DSSPM 2-3-87-ECWM)	Criteria	Classification (*see Note)		
		Critical	Deviation	Observation
Construction and Assembly - General	**Applicable to all components and assemblies unless otherwise indicated.**			
Construction and Assembly - General	Any operation omitted or not properly performed, or any part missing.	X		
Construction and Assembly - General	Incomplete manufacturing process.	X		
Construction and Assembly - General	Cuts, tears, holes, rips, mend, lumps, creases, weak places, or other deficiencies seriously affecting serviceability.	X		
Construction and Assembly - General	Noticeable separation of parts.	X		
Construction and Assembly - General	Needle chews likely to develop into a hole.		X	
Construction and Assembly - General	Pairs of finished boots must be the same in terms of materials and design.		X	
Construction and Assembly - General	Pairs of finished boots have significant variation in shade or colour.		X	
Construction and Assembly - General	Pairs of finished boots not right and left of same size.		X	
Construction and Assembly - General	Any open seam, any row of stitching missing, stitching uneven tension, appropriate number of stitches per inch for material, loose stitching resulting in loosely secured seam, tight stitch resulting in puckering of fabric or assembly, thread ends not trimmed, or parts caught in an unrelated row of stitching,	X		
Construction and Assembly - General	Grease, oil, or other foreign matter on outside or inside of finished footwear.		X	

* NOTE: The classification of infraction is for the purposes of evaluation only