No. U.II-98 (Spec)/12-13-Prov
भारत सरकार/Government of India
गृह मंत्रालय/Ministry of Home Affairs
पुलिस आधुनिकीकरण प्रभाग /Police Modernization Division
संभरण-I डेस्क /Prov.I Desk

26, Man Singh Road, Jaisalmer House,
New Delhi, the 8 December, 2014

To,

The DsG: AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject: Revised QRs/Specifications of Jungle Shoes (PU Sole).

The undersigned is directed to refer to the subject mentioned above and to say that the revised QRs/Specifications in respect of Jungle Shoes (PU Sole) as per Annex-I have been approved by the competent authority in MHA.

2. Henceforth, all the CAPFs should procure the above items, required by them strictly as per the laid down QRs/Specification.

3. Concerned CAPF will be accountable for correctness of the QRs/Specifications of Jungle Shoes (PU Sole).

Yours faithfully,

(P.K. Srivastava)
Under Secretary to the Govt. of India

Encl: As above.

Copy forwarded for necessary action to:

SO (IT), MHA - with the request to host the revised QRs/Specifications of Mosquito Net LLINs on official website of MHA (under the page of Organizational Set up, Police Modernization Division-Clothing items). Soft copy is being sent through email also.

(R. K. Soni)
Section officer (Prov-I)

Copy to: DDG (Procurement), MHA

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Annex-I

SPECIFICATION
FOR
BOOT ANKLE TEXTILE (JUNGLE BOOT), DIRECT MOULDED (PU) SOLE

1. SCOPE

1.1 This specification covers the requirement of Jungle Boot PU Sole in sizes 5 - 11.

1.2 Jungle Boots described in this specification has been designed to provide smart, durable and comfortable footwear to cater the needs of various State Police Organizations, Railways & Central Para Military Forces etc.

1.3 The design also caters for adequate ankle support. It also meets the requirement of wear comfort for long hours. These boots are made with bucket type cleated PU sole and heel

1.4 Materials are specified in this specification, so as to provide to provide added comfort and functionality while undertaking long combat actions. Instep support and cushioning is provided by way of moulded EVA rubber sheet as part full insocks.

1.5 This specification covers the constructional, manufacturing and other requirements of the upper & lining fabric, PU Sole and other materials used in the manufacture of Jungle Boots, Ankle High having PU Sole and Heel

2. REFERENCES

Reference is made in this specification to the following:

i)	IS: 2050-1991	Glossary of terms relating to footwear
ii)	IND/TC/0304	Laces Nylon Black
iii)	IS: 5041-1978	Specification for Footwear and Stationery Eyelets
iv)	IS: 7329-1971 (Reaffirmed [illegible])	Metal Lasts for canvas ankle boot
v)	IS: 4905-1968	Method of random sampling
vi)	IS 15298 (Part 1)	Requirements and test methods for Safety, Protective and occupational footwear for professional use

The Standards mentioned above or anywhere in this specification contain provisions which through reference in this text, constitute provisions of this standard.

3. TERMINOLOGY

For the purpose of this specification the definitions and terminology given in IS:2050-1991 are applicable

4. STANDARD PATTERN

Design: Boot shall be made to design shown in figure 1 on last IS No. 7329-71 or equivalent broad toe, 'E' fitting last.

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MATERIALS

4.1 **Upper :** The upper shall consist of water repellant(On Visual inspection Minimum Rating 80 in the water repellency test as per IS 390:1975) Polyester Viscose fabric conforming to the requirements given in annexure B as an outerlayer and 100% non woven nylon (cambrille type) lining conforming to the requirements given in annexure C as an inner layer or lining. The two fabrics shall be firmly adhered together with flexible adhesive & polyurethane foam of 5mm thickness. inside counter lining shall be of upper material The color/shade of upper used shall be Olive green

4.2 **Binding Materials:** Polyester Black binding

4.3 **Toe Puff, Counter:** For toe puffs and stiffeners well struck thermo plastic toe puff & sriffeners of minimum thickness 1.5 mm & 2 mm respectively shall be used.

4.4 **Eyelets:** Aluminum Eyelets conforming to IS: 5041-1978

4.5 **Insole:** Insole will be non-woven polyester fabric conforming to IS 15298(Part 2) with suitable treatment for providing antistatic properties .

4.6 **Insock:** Each boot shall be provided with a detachable 4.0 mm ± 1.0 mm thick full insock of compress moulded EVA rubber having instep arch support. The outer layer of the insock shall be covered with Camprelle type or drill cloth material in black colour.

4.7 **Laces:** Each pair of boots shall be provided with a pair of Nylon Black Laces of 130 cm long having minimum mass of 100 gms. per 10 Pairs

4.8 **Outsole:** Shall be Polyurethane (PU) sole having anti-slip design moulded directly. The design and pattern of PU Sole shall be similar to tread design of sole as shown in fig. 2 for reference. Physical requirements of PU sole are given in Annexure A

4.9 The material used should meet the eco-friendly quality parameters as per Annexure D

5. REQUIREMENTS AND TESTS

5.1 The material used in the manufacture of boots shall be tested to the requirements given in this specification.

5.2 **Whole Footwear**

5.2.1 **Mass**

The Mass of one pair of finished boots of Size 8 shall be in the range750 gms to 850g with an increase or decrease of 50 gms for each bigger or smaller size respectively.

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5.2.2 **Leg Height**

The leg height of the boots when tested in accordance with IS 15298:Part I shall be 160+ _2 mm. for Size 8 with an increase or decrease by 2.0 mm for each bigger and smaller size.. The leg height of the pair shall be equal

5.2.3 **Upper/Outsole Bond Strength**

When these boots are tested in accordance with the method given in IS: 15298 Part-I, the bond strength shall be no less than 4.0 N/mm.

5.2.4 **Electrical Resistance**

When measured in accordance with the method described in IS: 15298 Part I after conditioning in a dry and wet atmosphere, the electrical resistance shall be not less than 100 kΩ and not greater than 1000 MΩ.

5.2.5 **Energy absorption of seat region**

When footwear is tested in accordance with the method described in IS: 15298 Part I, the energy absorption of the seat shall be not less than 20 J

5.2.6 **Resistance to harsh environments**

5.2.6.1 **Heat insulation of sole complex.**

When footwear is tested in accordance with the method described in IS: 15298 Part I, temperature increase on the upper surface of the insole shall be not greater than 22° C

5.2.6.2 **Cold Insulation of sole complex**

When Footwear is tested in accordance with the method described in IS: 15298 Part I, the temperature decrease on the upper surface of the insole shall be not more than 10° C

5.2.7 **Hydrolysis Test**

The Boots shall be placed in High Humidity (100%) at a temperature of 70° C for 5 days and then tested for whole shoe flexing for 100000 cycles. No Crack or damage to the sole is acceptable.

5.3 **Upper & Lining**

i) Upper (Outer Layer)
Polyester Viscose Fabric **Annexure-B**

ii) Lining (Inner Layer)
100%Non Woven Nylon (Cambrelle type) Fabric **Annexure-C**

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5.4 **Outsole**

5.4.1 Outer thickness and cleat height shall be as under:

S.No.	Description	Thickness
1.	Minimum Thickness of sole	4 mm
2.	Cleat Height	2.5 mm (Min)
3.	Thickness of sole when measured from outside with side wall	
	a. At Forepart	20 mm (Min)
	b. At Waist	16 mm (Min)
	c. At Heel	35 mm (Min)

5.4.2 **Physical requirements of Polyurethane Sole**

PU Sole shall conform to the requirements as mentioned in Annexure A.

6. **MARKING**

6.1 Each boot shall be legibly marked by the manufacturer using indelible ink on the insock with the detail of Name / Trademark of the manufacturer, Nomenclature, Year of Manufacture, Size of the Boot.

6.2 Month and Year of manufacture shall also be marked on inside of the tongue.

7. **SAMPLING AND CRITERIA FOR CONFORMITY**

7.1 Manufacturers/ Contractors must satisfy themselves first by carrying out thorough pre-inspection of each lot/ batch that the stores manufactured are in accordance with the contract and fully conform to the specification, before tendering to QA officer nominated under the terms of contract.

7.2 A declaration by the Contractor that necessary pre-inspection/ tests have been carried out on the stores tendered and the same are fit for inspection and test shall be rendered along with the challan. The declaration shall include the method followed in pre-inspection showing features checked / tested and the test reports be submitted along with challan.

7.3 The jungle boot pairs of the same description nomenclature and of the same batch belonging to one size and fitting or a set of sizes and fittings offered against one challan shall constitute a lot.

7.4 The lot size shall not exceed 10000 pairs.

7.5 In all cases samples shall be drawn using technique of random sampling as per IS: 4905. The sampling officer shall first draw the samples for visual, dimensional, and construction parameters and for compliance to approved sample as per col 2 & 3 of the following table-3.

7.6 If found satisfactory on examination as above, the officer may draw (out of it) and send samples for lab testing as per col 2 & 5 of table-3. The samples so drawn shall be subject to testing .(Composite testing)

7.7 If found satisfactory, lot shall be accepted and inspection report shall be prepared.

Table-3: SAMPLING PLAN

S. No	Lot Size in Pairs	For Visual, Dimensional, Constructional Parameters and compliance to approved sample		For Laboratory Testing for Physical and Chemical Parameters	
		Number of samples to be drawn	Permissible no. of non-conforming samples	Number of samples to be drawn	Permissible no of non-conforming samples
(1)	(2)	(3)	(4)	(5)	(6)
1	Up to 2500	50	5	3	0
2	2501- 6000	90	8	5	0
3	6001- 10000	150	11	7	1

8. PACKING

8.1 Each pair of boots shall be wrapped in tissue paper and shall be packed in a three ply corrugated box that will form a unit pack.

8.2 A paper label with Nomenclature, Manufacturer's name/ Trade mark, Size and Month and Year of Manufacture shall be securely pasted on front of the unit box, which shall be clearly readable.

8.3 Suitable number of unit packs shall further be packed in one corrugated carton strong enough to withstand transit hazards and to the satisfaction of inspecting officer.

8.4 The Carton, thereafter shall be sealed with adhesive tapes and tape bound with polypropylene tapes. Each package shall be legibly marked with.

i. Nomenclature of the store.
ii. Quantity packed in the package.
iii. Lot and serial No. of the package.
iv. Month and year of manufacturer.
v. Gross mass of the package in kg.
vi. Name and address of the consignee.
vii. Name and recognized trade mark of the supplier.

9. STORAGE

These Jungle Boots with PU Sole shall have shelf life of minimum of 12 months for normal PU sole.

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Annexure A

POLYURETHANE SOLE (DIRECT MOULDED PU SOLE)

PARAMETERS	NORMS
Shore "A" Hardness	50 to 60 Shore "A"
Moulded density (kg/m^3)	500 to 600
Trouser tear strength (IS 15298 part 1) in kN/m	5 Min.
Flexing life test (IS: 15298 part 1)	50,000 flexes cut growth 4mm max.
Abrasion test, (IS: 15298 part 1)	250 mm^3 max.
Hydrolysis test as per (IS: 15298 part 1)	6 mm cut growth maximum

Annexure B

REQUIREMENTS OF UPPER MATERIAL

S.N	Parameter	Requirement/Norm	Test Method
1.	Blend Composition (for Guidance)	a. Polyester (%):80 ± 3 b. Viscose: Remainder	IS: 11195
2.	Weave	Twill 2/1	Visual
3.	Mass (gm / m^2)	290 ± 10%	IS: 1961 IS: 1969
4.	Breaking Load in kg(min) (5x20 cm strip)		
	a. Warp	200	
	b. Weft	100	
5.	Elongation in % age	20 % (min.)	IS: 1969
6.	Tear Strength in N, Min.		IS:6489 Part 4
	a. Warp	200	
	b. Weft	150	
7.	Mullen Burst in Kg /cm^2	10 (min.)	IS:1966 Part-I
8.	pH Value	6.0 - 8.5	IS:1390 (Cold method)
9.	Colour Fastness		
	a. Light	3/4 or better	IS: 2454
	b. Washing	3/4 or better	IS:764
	c. Perspiration	3/4 or better	IS: 971

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Annexure C

REQUIREMENTS OF NON-WOVEN LINING MATERIAL

Sl. No.	Parameter	Requirement / Norm	Test Method
1.	Blend Composition	Nylon: 100%	IS: 11195
2.	Weave	Non Woven	Visual
3.	Thickness	0.7mm (min.)	-
4.	Mass (gm / m²)	150 ± 25	IS: 1964
5.	Tear Strength in N, Min	15	IS 15298 (part I)
6.	Mullen Burst in Kg / cm²	5 (min)	IS:7016 Part-6/ IS:1966 Part-1
7.	Abrasion Martindale, Min	25,600 Cycles (dry) 6400 Cycles (wet)	IS 15298 Part I
8.	Colour Fastness		
	a. Light	3/4 or better	IS: 2454
	b. Washing	3/4 or better	IS:764
	c. Perspiration	3/4 or better	IS: 971

Annexure D

The material used should meet the following eco-friendly quality parameters:

Sl	Material	Test	Quality Norm	Test Method
1	Upper, lining fabric	Azo dyes	IS 14898	LC - 4 of IS 14816/ ISO 17234 / ISO 14362
		Pentachlorophenol (PCP)		IS 13758/ ISO 17070
		Formaldehyde		LC - 3 of IS 14816/ ISO 17226
2	Sole	Lead	IS 12254	IS 12240 (Part 5)/ EN 1122
3	Metal parts eg; eyelets, buckles, zip etc	Nickel free	SG Criteria	DIN EN 12471

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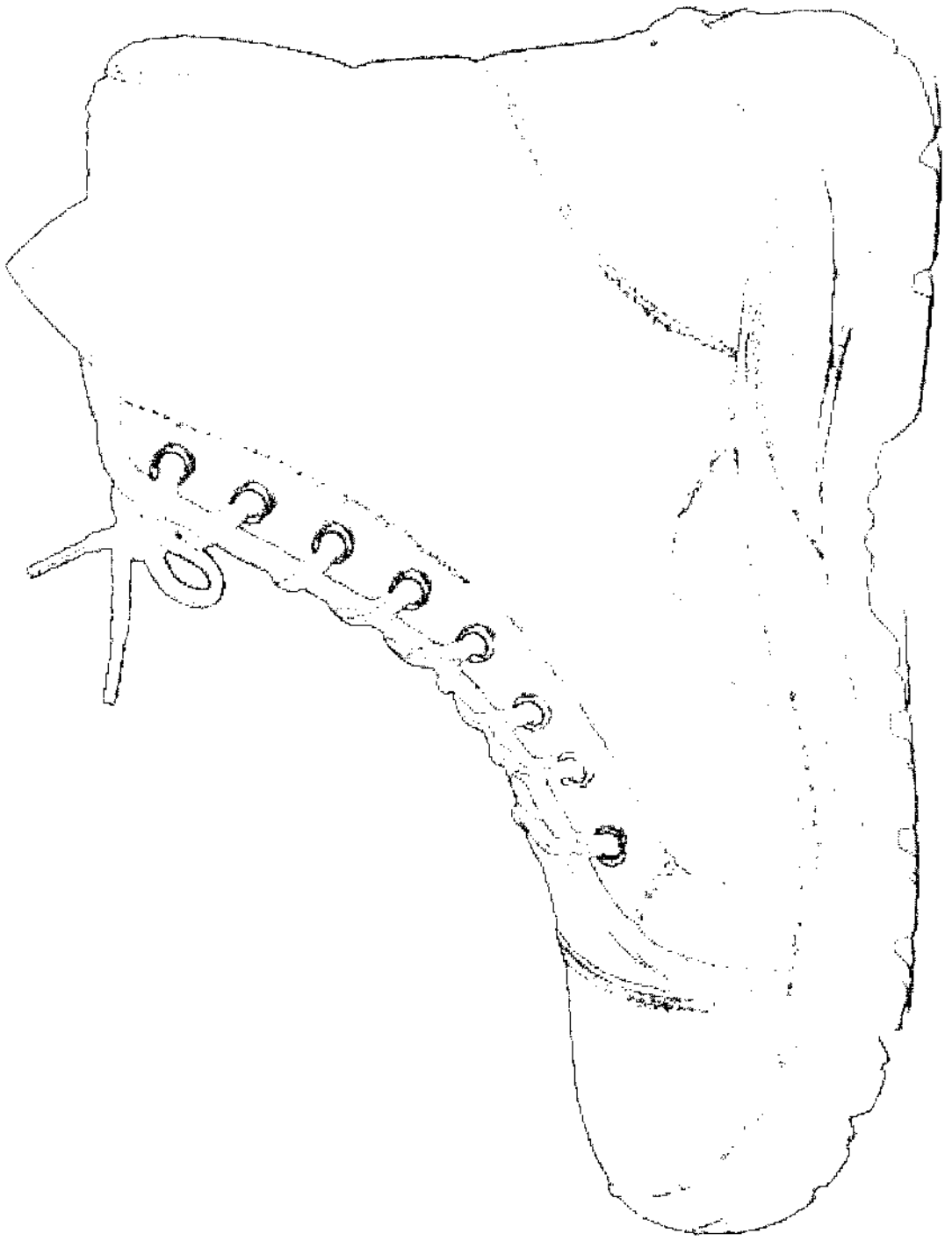

Fig.1: Upper Design of Jungle Boot, PU Sole

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Note:- This illustration is diagrammatic only for reference and is not intended to illustrate details of the sole design

Fig.2: Sole Design for Jungle Boot, PU Sole

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