

INTEGRATED HEADQUARTERS OF MINISTRY OF DEFENCE (NAVY)  
DIRECTORATE OF CLOTHING & VICTUALLING

AMENDMENT NO.1

TO

INDIAN NAVY SPECIFICATION

ON

BOOT SNOW

CNCMT-SCFOO21 TO CCFOO26

(SIZE 6 To 11)

ISSUE DATE: NOV 2015

DIRECTORATE OF CLOTHING AND VICTUALLING

D-II WING, SENA BHAWAN

INTEGRATED HEADQUARTERS

MINISTRY OF DEFENCE (NAVY)

NEW DELHI – 110 011



*Arvind*  
05/11  
कप्तान अरविंद वडहेरा  
Capt Arvind Vadhera  
प्रधान निदेशक (ए ओ डी/ए ओ एल)  
Principal Director (AOD/AOL)  
बस्त्र एवं भक्षण निदेशालय  
Dir of Clothing & Victualling

REPORT OF AMENDMENT

(a) REQUIREMENTS

Para 2 Ser. (b)

FOR

The leg height of the boot shall be 144mm +/-2 mm for size 8, for all other sizes increase/decrease by 3mm per size. The heel height shall be 35+/-1mm.

Read

The leg height of the boot shall be 168mm +/-2 mm and total height of the boot shall be 203mm +/- mm for size 8, for all other sizes increase/decrease by 3mm per size. The heel height shall be 35+/-1mm.

(b) UPPER PART

Para 3 Ser. (a) (iii)

FOR

An interlayer of Non woven insulating Fabric (Preferably "Thinsulate") shall be placed in between the upper leather and lining leather.

Read

An interlayer of Non woven insulating Fabric Thinsulate B600(620GSM) shall be placed in between the upper leather and lining leather.

(c) SEWING OF THE UPPER

Para 4 Ser. (a) (vii)

ADD

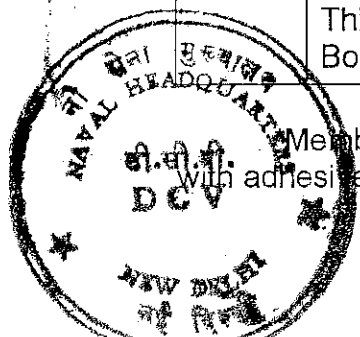
The Gusset (outer wings) of tongue is to be extended up to top line of Quarter. Top line of tongue will be 20 mm +/- 2mm above the top line of quarter.

Table 1- Requirements Of Upper Portion Of Boot (Above Sole)

ADD

SI.NO	Material/Trails	Control Methods	Required Limits
1	Upper insulation Thinsulato B 600	IS 15298 Part 1 ASTM F - 1291	620 GSM
5	Top layer-pile Fabric Second layer-Pu Foam Third layer-TPU membrane Bottom-foil with PE Foam	Insock	100%woollen pile
			2mm
			---
			5mm

Membrane is required for water proofing of insock. All these layers are laminated with adhesive.



*(Signature)*  
Capt Arvind Vadhera  
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DCV/ BOOTS SNOW / 18 /2011

INTEGRATED HEADQUARTERS OF MINISTRY OF DEFENCE (NAVY)  
DIRECTORATE OF CLOTHING & VICTUALLING

INDIAN NAVY SPECIFICATION

ON


BOOTS SNOW

CAT NO. CNCMT- SCF0021 TO SCF0026  
(Size 6 to 11)

ISSUE DATE: 29 NOV 2011


DIRECTORATE OF CLOTHING AND VICTUALLING  
D-II WING, SENA BHAWAN  
INTEGRATED HEADQUARTERS  
MINISTRY OF DEFENCE (NAVY)  
NEW DELHI - 110 011

REPORT OF AMENDMENT

  
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एड/110011 New Delhi-110011

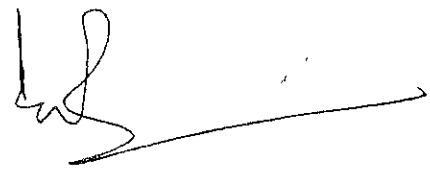
# REPORT OF AMENDMENT

<u>DATE</u>	<u>AMENDMENT NO</u>	<u>DETAILS OF AMENDMENT</u>	<u>AMENDMENT CARRIED OUT BY AND DATE</u>

  
 कैप्टन पी के मोहन  
 Capt P K Mohan  
 प्रधान निदेशक / Principal Director  
 वीसीडी / वीसीडी आर का कक्ष (नियंत्रण)  
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डी.डी.पी./ए.डी.डी. मू. रक्षा मंत्रालय (नौसेना)  
D.D.P./A.D.D. M. MoD (Navy)

## SPECIFICATION

### BOOTS SNOW

1. **FOREWORD.** This specification has been prepared by the Directorate of Clothing and Victualling on the authority of the Controller of Logistics, and is for use by the Indian Navy.

(a) This specification has been prepared on the basis of commercially available similar products available with reputed Indian manufacturers and exporters.

(b) This specification would be used for manufacture, quality assurance and procurement of the item.

(c) Authority Holding Sealed Particulars (AHSP) for the item covered in this specification is Principal Director of Clothing & Victualling (PDCV), Sena Bhawan, New Delhi, for the Indian Navy.

(d) This specification holds good only for the supply order for which it is issued.

(e) This should not be communicated to any one who is not authorized to receive it.

(f) The PDCV reserves the right to amend or modify this specification as and when necessary.

(g) Nothing shall relieve the manufacturer of his responsibility for the safe custody of drawings and other paper particulars and specification issued to him for the particular contract till the contract is completed. Manufacturer will also be responsible for maintenance of the secrecy of the information contained in these documents.

(h) Unauthorised departures from this specification may involve rejection of the store which will be inspected during and after manufacture and will be subjected to testing for the final approval of the Inspecting Officer before accordance of delivery to the consignee.

## SPECIFICATION

### BOOTS SNOW

1. **SCOPE.** The specification determines the characteristics and the technical requirements of the service for the supply of the Ankle Snow Boots Rubber sole anti slip with Direct Vulcanising Method / Direct Moulding System(D.M.S) which are intend for the personnel of the Indian Navy to be used at extreme low temperature conditions

### 2. REQUIREMENTS.

(a) **General** - The numbers that are reported in the specification are not absolute but they indicate the level of quality. Products that have small divergences from the numbers that are reported will not be rejected unless minimum or maximum values are specified.

(b) **Drawing** - Ankle boot with padded collar full leather lined including the tongue. The upper shall consist of four components. The vamp and outside quarter single component. The second component inside quarter. The closed tongue third component and back strap fourth component.

The leg height of the boot shall be 144mm +/- 2 mm for size 8. For all other sizes increase/decrease by 3 mm per size. The heel height shall be 35+/- 1 mm.

(c) **Collar** - It shall be placed at the top edge of the quarter.

(d) **Boot last** - The forme, the size and the application of the shoe last will be approved from the evaluation committee.

(e) **Upper Leather (vamp, quarter & tongue)** - Leather Chrome tanned C.G., in black colour, drum dyed and water resistant

(f) **Sole** - Direct Vulcanised /Direct Moulded Rubber Sole

### 3. TECHNICAL CHARACTERISTICS, SPECIAL REQUIREMENTS OF RAW MATERIAL.

#### (a) Upper Part.

(i) **Upper Leather** - Chrome tanned, Corrected Grain water resistant (DIN CG) without any defects caused by human or nature which affect the appearance or the use of the boot at the vamp, quarter and tongue.

Both the internal surface and the flesh at the backside of each skin to be homogenous of the and clean, exempted from deep cuttings and remains of flesh. The leather has to go through the appropriate water resistance process in order to resist water penetration. The thickness of the upper leather is 1.8 – 2.0 mm and this specific thickness has to be same all around each skin. The leather has to correspond to the technical requirements of Table '1'.

(ii) Tongue Leather & Back Strap Leather - Leather will exactly have the same characteristics as they are described in the above paragraph 4(a)(i) but with a specific thickness of 1.0 – 1.2 mm. The leather has to correspond to the technical requirements of Table '1'.

(iii) Upper Insulation - An interlayer of Non woven Insulating Fabric (Preferably "Thinsulate" ) shall be placed in between the upper leather and lining leather.

(iv) Leather Lining - Cow chrome tanned, full grain in light beige colour, only drum dyed with thickness 0.9 – 1.1 mm. The leather has to correspond to the technical requirements of Table '1'.

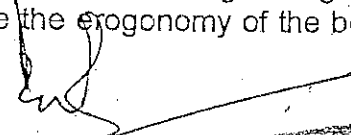
(v) Threads to be used for the sewing of the upper - From continuous multiple NYLON thread, tri-band, counter-clock-wize (Z) in black colour. The thread to be done with solid colour. The spinners will be with adhesive substances (BONDED) without any knots in the entire length of the cone. The Zigzag joint has to be done with thread size 40 and the remainder joints with size 20-40.

(vi) D-Rings and Hooks for the Laces - The material of manufacturer is aluminum or brass in black colour which is achieved via the ascendant oxidation(anodisation) and is covered with at least a double layer of black varnish..

(vii) Laces - From Nylon fibres of the most excellent quality, exempted from faults such as knots, broken thread etc in black colour, with a cylindrical thickness of 3mm and length 145 cm uniformly. The two edges of the laces are to be shaped with plastic over with heating in length 2+/-0.2 cm. (Bodkin)

The dye to be done in the threads of Nylon and not in the finished laces. The laces must correspond to the requirements of Table "1".

(viii) Internal Strengthening of the Toes (Toe Puff) - The toe puff material must be suitable for use for internal strengthening of the toes. It is not supposed to influence the ergonomomy of the boot or

  
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to create problems to the user. It must be made of Thermoplastic sheet of thickness 1.4 to 1.5 mm.

(ix) Counter - Thermoplastic material of 1.6 – 1.8 mm thickness.

(b) Lower Part .

(i) Insole (Internal Sole) – The material for manufacturing the insole consist of Vegetable Tanned buffalo leather with thickness 3.0 to 3.5 mm

(ii) Steel Shank for the Arch Plate - The shank should be manufactured from Rust Proof Steel Ribbed, Zinc plate with hardness of 60-4" in the ROCKWELL Scale C.

CONSTRUCTION ELEMENTS (SHANK)

The dimensions of the shank as follows:-

Length of shank : 11.15 cm +/- 0.08 cm  
Width of shank : 12mm +/- 0.8mm  
Thickness of shank : 1.06 mm +/- 0.06 mm

The shanks will have three "Flutes" the height of which will be 1.25 until 2.00 mm and will be extended upto 25.4 mm from each edge,.

(iii) Lasting Adhesives – Suitable for the lasting that would not influence unfavourably the process of sole fixing.

(iv) Heel Filler - The heel filler will be made from Light wood or from the proportional material as NOVAPAN, which however does not influence the vulcanization of the heel. This has to be cohesive, non-pressurised and absorb humidity.

The heel filler is placed so as margin exists between the region of the heel filler and external surface of the boot heel at least 20 mm. The thickness of rubber on top of the heel filler must be at least 8 mm.

(v) Sole - The dimension and the drawings of the sole must be according to **Annex B 1**. The sole has to correspond with the technical requirements of Table '2'.

4. MANUFACTURING PROCESS

The designing and the manufacturing of the boots is made with updated methods and with materials of the most excellent quality and are produced based on the principles and the rules of industrial practice, leading to presentable and

functional boots, ensuring at the same time their compatibility with the terms of this specification.

(a) **Sewing of the upper**

(i) The number of stitches in the various seams of the upper are 8-10 per each 25 mm.

(ii) Joint of quarters to be stitched Zigzag.

(iii) Strengthening of quarters through back strap 25 mm wide with Double row of stitches 2-3 mm apart on both the edges.

(iv) **Collar:** Nappa Leather to be stitched at the top edge of quarter and folded inside, with foamy material inside it and stitched to the upper with single row of stitches, so as to have a approximate height of 30 mm.

(v) Joint of Tongue with upper with double row of stitches 2-3 mm apart both sides tongue to be stitched with the quarters from outside upto the position of second hook from top edge of quarter. The top unstitched ed of tongue should extend 10 mm above the top line of quarter and to be so designed that it is folded inside the two wings of the quarter when the laces is tied up. A strengthening leather piece, as in paragraph 4(a) (ii), of length 50 mm and width 22 mm to be stitched on both sides of quarter beneath the third hook from the top of quarter.

(vi) **Water resistance of the seams** The seams of the upper has to sealed so that no water penetrate inside the boot through the seam.

(b) Each boots shall have 10 pairs of D-rings and six pairs of Double riveted hooks. The D-rings & Hooks to be riveted with the upper such that the rivets are not visible inside of boot.

(c) **Toe puff** - To be skived according to the needs of the boot and to be placed in the right position.

(d) **Assembly Of The Lower Part For Direct Vulcanized Sole**

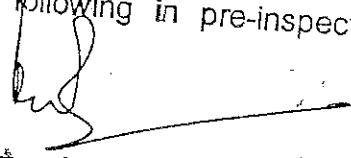
(i) **Counter** - To be skived according to the needs of the boot and to be placed in the right position.

(ii) **Insole** - The appropriate steel shank is placed in the insole according to its size so that the shanks edge is at least 25 mm under the heel.

- (iii) Upper lasting – To be done in such a way so that the upper takes the exact shape of the last, without any folding or straining either in the lining or in the leather. The lasting margin must have a width of a least 15 mm. The upper should be fixed the insole with proper adhesive.
- (iv) Roughening of the complete upper which is already lasted as above. The lasting margin is shaved well in such a way so that the colour is removed and the leather fibres are lifted thus allowing the adhesives to penetrate inside. Neither very light or no excessive roughening is allowed since the possibility exists for the sole attachment or the leather attachment to become weak.
- (v) Heel Filler – The proportional size filler is placed so as for a margin to exist between the circumference of the heel filler and the exterior surface of the boot's heel which has to be at least 20 mm. The thickness of the rubber above the filler has to be at least 8 mm.
- (vi) Clueing – The lasting margin which has undergone roughening is glued with the appropriate adhesive according to the instruction of the manufacturer.
- (vii) Vulcanization of the sole – It should be made according to the instructions and specification of the manufacturer of the material. The time, temperature and the pressure of the press should be observed strictly in order to achieve the desirable degrees of vulcanization. The minimum tearing strength of detachment appears in Table '2'.

5. PRE-INSPECTION PROCEDURE OF SUPPLY

- (a) Advance Sample : All firms have to submit two pairs of acceptable samples of the Boots Show as advance sample within the stipulated date for clearance by AHSP prior to commencement of bulk production.
- (b) Manufacturers/Contractors must satisfy themselves that the stores manufactured are in accordance with the contract and fully conform to the specifications by carrying out thorough pre-inspection of each lot before actually tendering the same for the inspection to the Quality Assurance Officer nominated under the terms of the contract.
- (c) Declaration by the contractor that necessary pre-inspection test has been carried out on the stores tendered and same are fit for inspection is to be submitted. Test and findings shall be tendered alongwith the challan. The declaration shall include the method following in pre-inspection showing feature checked/tested.

  
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 (Quality Assurance)  
 (AHSP)

(d) If the Quality Assurance officer finds that pre-inspection of the consignment as required above has not been carried out, the consignment is liable for rejection.

6. **QUALITY ASSURANCE.** Examination of the sample taken from any portion of the consignment or during surveillance inspection shall conform to the requirement when tested in accordance with the method mentioned against each in clause 5 of the specification.

7. **SAMPLING**

(a) **Formation of Lot:** The delivery shall be visually inspected by quality assurance officer on the spot, in the first instance to ascertain its homogeneity in respect of nature, source, year of manufacture, batch, uniformity of production etc.

(b) If the product units are homogeneous, the delivery shall be treated as one lot. If not the product units shall be segregated by the supplier into separate groups, so that each group is homogeneous within itself to form a sub lot. The supplier shall arrange the unit of the homogeneous lot in such a way that all the product units are easily accessible to the sampling officers from all sides to enable him to draw samples at random from any portion of the homogeneous lot.

(c) **Sample Procedure:** Sampling of the stores shall be carried out by adopting appropriate sampling method as per IS:4905.

(d) **Sample Size:** The scale of sampling shall be followed in respect of Visual, Physical and Chemical parameters.

(e) **Lt Size :** 5,000 Nos Maximum.

8. **CRITERIA FOR CONFORMITY**

(a) The shoes shall be delivered in new, dry and clean condition

(b) The lot shall be considered to be in conformity with the required standard, if the samples drawn for testing are found satisfactory and the lot is also found otherwise satisfactory in regards to visual parameters.

9. **TEST METHODS.** The related specification mentioned in Table '1' and Table '2' against each parameter be followed for test methods.

10. **MARKING.** The Boots Snow shall be legibly stamped at the waist of the in-sock with manufacturers name, together with the year and month of manufacturer. Year and the month of supply will be legibly embossed at the tongue alongwith manufacture's name and size of the boots.

11. **PACKING.** Each pair of the Boots shall be placed heel and toe alternatively and be wrapped in tissue paper to be placed in Card Board Box. Unit pack shall be placed in a 3 ply corrugated fibre board slotted type box and the unit packs shall be placed in corrugated 7 ply fibre board slotted box. Cartons are to be sealed with self adhesive tape of 40-50 mm width. Further, cartons are to be sewn in waterproof Hessian cloth and strip bound with 19 mm wide polypropylene tape. The case is to be labeled with full consignment details in 40 mm stenciled. Hand written details are not permitted.

12. **MARKING OF PACKAGING.**

(a) The front side of the packing cases shall be legibly and indelibly marked with the indent number, description of the stores and the quantity packed preceded with the abbreviation "Qty". The words "OPEN THIS SIDE" and "TOP" shall be marked on the left and right hand edges of packing case respectively.

(b) The rear side should have the name and address of the consignee as given in the contract and the weight of the packages in Kilograms and Grams. It shall also have the number of individual packages and the total number of packages in the consignment.

(c) The left end should have the consignor's name and address, initials or his recognized trade mark, month and year of packing, inspection note number and date.

(d) All details are to be stenciled in 40 mm. Hand written details are not permitted.

13. **WARRANTY.**

(a) Except as otherwise provided in the invitation to the tender, contractor/supplier shall declare that the fabric supplied to the purchaser against this specification is of best quality and workmanship and new in all respect and is strictly in accordance with the laid down specifications.

(b) The stores supplied against this specification shall be deemed to bear the warranty of the contractor against defective materials and performance for a period of 12 months from the date of receipt of stores at Consignee's depot. If during this period, the stores supplied are found to be so defective, the same shall be replaced immediately with the serviceable stores by the contractor at site, free of any charges or cost or the contractor supplying such defective stores shall accept a suitable price penalty for the defective stores as may be decided by the purchasing officer on the recommendation of the consignee/ Quality Assurance Authority.

**TABLE 1 - REQUIREMENTS OF UPPER PORTION OF BOOT(ABOVE SOLE)**

SI.NO.	Material/Trails	Control Methods	Required Limits
1	<b>Upper Leather</b>		
	a. <u>Leather Thickness</u>	ISO 2589 SATRA TM 1	1.8-2.0 mm
	b. <u>Bending Resistance</u> Dry : 1,000,000 Wet : 10,000 Or Dry: 50000 Wet: 20,000	BSENISO 7854 BS342 part 9/11c  SATRA TM 55  ISO 5402	Medium Shrink Medium Shrink  No damage in person or colour  No damage in person or colour
	c. <u>Abrasion colour Resistance</u> Dry : 256 turns/rounds Wet : 64 turns/rounds Or Dry : 50 frictions/abrasions Wet : 20 frictions/abrasions	SATRA TM 8 or  BS1006 UK-LC  ISO11640 or SATRA TM 173	3 (grey scale) minimum 3 (grey scale) minimum  4 (grey scale) minimum 3 (grey scale) minimum
	d. <u>Tearing Strength</u>	IS:15298 ISO:20344	120 (min)
	e. <u>Water Penetration Resistance</u>	IS15258  ISO20344	No water penetration allowed before 120 minutes with a 10% swing
	f. <u>Vapour Penetration</u>	IS:15298 ISO20344	1mg/cm <sup>2</sup> minimum
	g. <u>Determination of Grain</u>	Visual	Corrected Grain (A Hair Cell Grain is permitted)
2.	<b>TONGUE LEATHER</b>		
	a. <u>Leather Thickness</u>	ISO 2589	1.0 – 1.2 mm
	b. <u>Bending Resistance</u> Dry : 1,000,000 Or Dry : 50000	BSENISO 7854 BS342 part 9/11c  SATRA TM 55  ISO 5402	Medium shrink  No damage in person or colour
	c. <u>Abrasion colour Resistance</u> Dry : 256 turns/rounds Wet : 64 turns/rounds Or Dry : 50 frictions/abrasions Wet : 20 frictions/abrasions	SATRA TM 8 or BS1006 : UK-LC  SATRA TM 173	3 (grey scale) min 3 (grey scale) minimum  4 (grey scale) minimum

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			minimum
	d. <u>Tearing Strength</u>	IS15298 ISO20344	36 N
	e. <u>Water Resistant</u>	IS 15298 ISO 20344	No water penetration allowed before 90 minutes with a 10% swing.
	f. <u>Vapour Penetration</u>	IS 15258 ISO 20344	1 mg/cm <sup>2</sup> minimum
	g. <u>Determination of Grain</u>	Visual	C.G. (A hair cell grain is permitted)
3.	<b>LINING LEATHER</b>		
	a. <u>Thickness</u>	ISO2589	0.9 – 1.1 mm
	b. <u>Tearing strength</u>	IS15298 or ISO20344	15 N
	c. <u>Abrasion colour Resistance</u>  Dry : 256 turns/rounds Wet : 64 turns/rounds Or Dry : 50 frictions/abrasions Wet : 20 frictions/abrasions	SATRA TM 8 or BS1006 : UK-LC  SATRA TM 173	
4.	<b>LACES</b>		
	<u>Breaking Strength</u>	BS 5131, Sec 3.7	700N

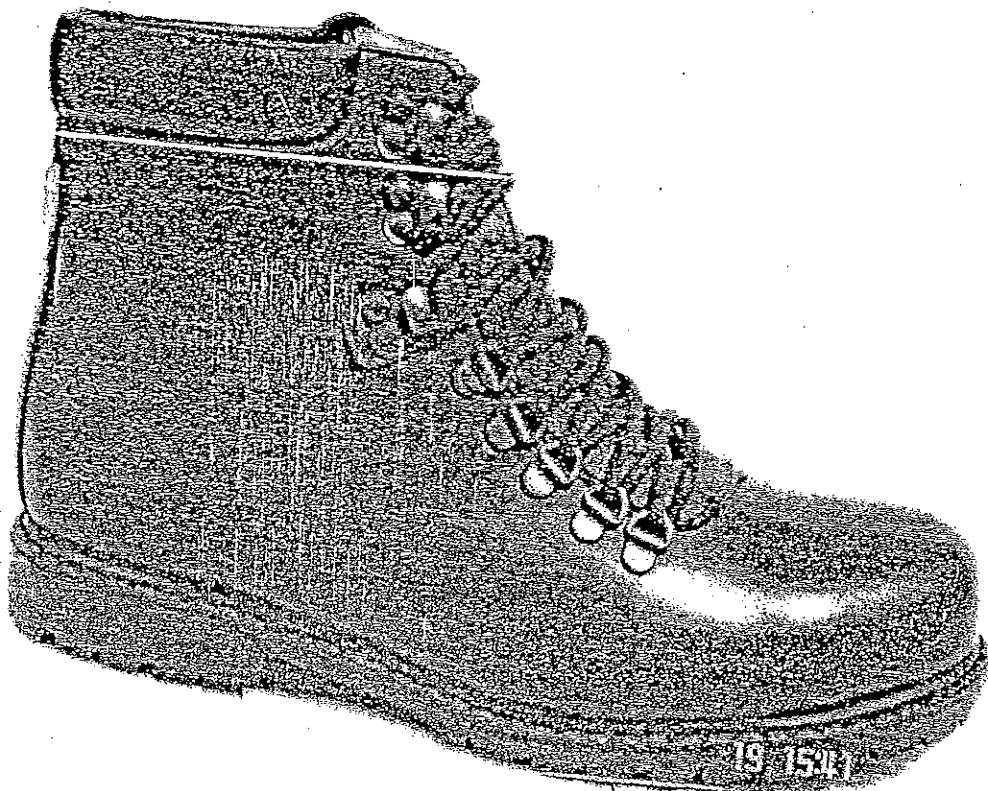
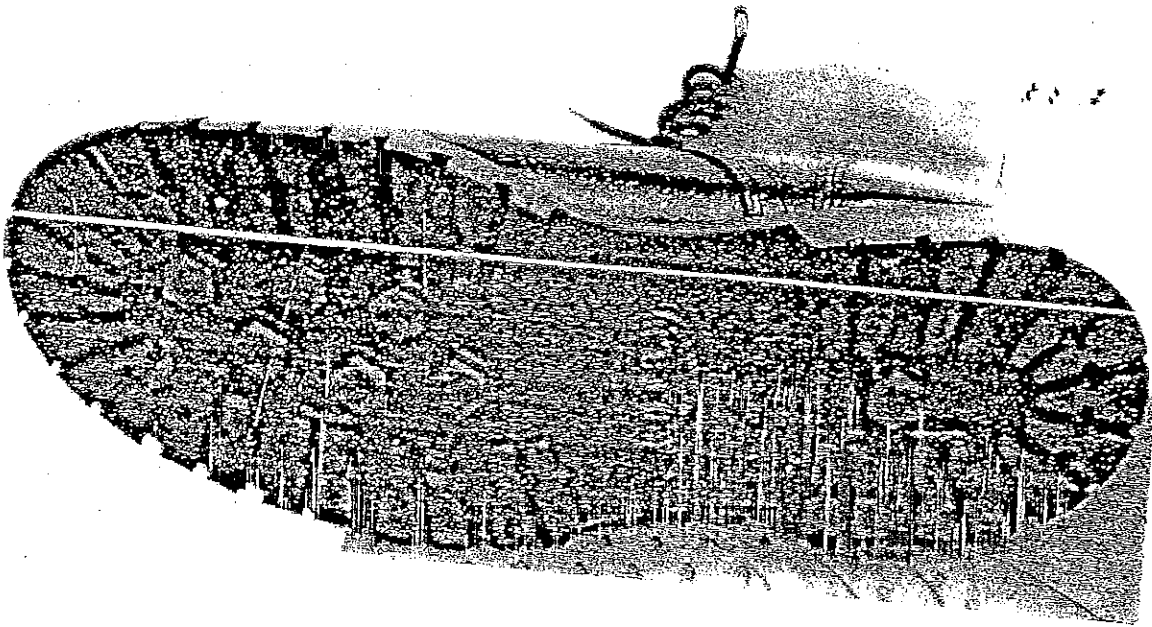
**TABLE 2 - REQUIREMENTS OF DVS RUBBER OUT SOLE**

S.No	Traits	Control Methods	Required Limits
1.	1. Bennewart flexing 2. Hardness at 23+/-20°C 3. Hardness at -30°C	DIN 53543 at -30°C	Cut growth 6 mm (max after 30000 cycles) 65+/-5 IRHD Not greater than 15 degrees increase in hardness with maximum 80 IRHD
2. ✓	<u>Bond Strength</u>	IS 15298/ISO20344	4N/mm



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रिजर्व (Navy)

PHOTOGRAPH OF SHOE AND SOLE DESIGN



*[Handwritten signature]*