


**PLACING OF DRAFT QRs AND TRIAL DIRECTIVES OF NON SKID TACTICAL/  
COMBAT/ ADVANCE HIGH ANKLE BOOT ON MHA WEBSITE**

1. Please refer PM Division, MHA letter No. IV-24011/14/2016-Prov.I-2405 dated 05 Oct 2017, letter No. IV-24011/12/2011-Prov.I dated 13 Jun 2012 and letter No 11012/02/2009- Fin-I/Prov-I-17 dated 02 Jan 2018.
2. Meeting of sub group of technical experts was held on **31 Dec 2020 at 1030 in the conference Hall, HQ NSG** for revised the QRs and Trial Directives of Non Skid Tactical/ Combat/ Advance High Ankle Boot.
3. The sub group during the meeting opined that the QRs and Trial Directives of Non Skid Tactical/ Combat/ Advance High Ankle Boot be placed on MHA as well as NSG website for 15 days to invite vendor comments/ suggestions.
4. As per PM Division, letter under reference, the draft QRs and Trial Directives of Non Skid Tactical/ Combat/ Advance High Ankle Boot as per appx is forwarded herewith in hard and soft copy for hosting on the MHA website.

  
(Sonu Rai)  
Maj  
Sqn Commander (Ord)  
For IG (Prov)

Encls :- As above.

✓ Mrs. Sugandhi, Technical Director, NIC, North Block, New Delhi

No. P/604/19(389)/Non Skid/Prov (Ord)/NSG /45 Dated, the 04 Jan 2021

Kindly See



(SOFT)

**INVITATION OF VENDOR COMMENTS ON QR/ TDs OF NON SKID TACTICAL/  
COMBAT/ ADVANCE HIGH ANKLE BOOT**

1. It is intimated that firms/ vendors' comments are invited on the QR/ TDs of **Non Skid Tactical/ Combat/ Advance High Ankle Boot**. All firms are requested to offer their comments on e-mail address [scord@nsg.gov.in](mailto:scord@nsg.gov.in) or [gcproc@nsg.gov.in](mailto:gcproc@nsg.gov.in) in under mention format.

QRs	TDs	Comments by the firm
-----	-----	----------------------

2. You are requested to offer comments within **15 days** from the date of uploading on the website. The QR/ TDs of above mentioned equipment/ weapon are being considered by sub group committee meeting for finalization.



  
(Sonu Raj)  
Maj  
Sqn Commander (Ord)  
For IG (Prov)



**DRAFT REVISED QR & TDs OF NON SKID TACTICAL/COMBAT/  
ADVANCE HIGH ANKLE BOOT**

**DESCRIPTION**

1. The boots ankle described in this QRs are to be made from chrome tanned full grain leather upper. The boots are to be manufactured with cleated rubber outsole with anti-slip design using broad toe last.
2. The boots shall be made with or without zipper fastening system with 32 round D Ring/Hooks in one pair of boot to facilitate excellent FAST fastening system.
3. The boot shall be made by using broad toe last with minimum "G" fitting.
4. The boot must be black in colour.
5. The boot must have a shelf life of 3 year tested as per 10 D.

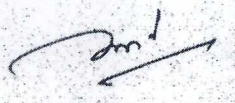
**ESSENTIAL FEATURES**


6. **BREATHABILITY** – Upper leather & Linings must be breathable for all day long comfort.
7. **ERGONOMICALLY FIT ASSESSMENTS** – Boots can be put on & taken off quickly without discomfort, It must be fitted correctly to be secure on the foot at all times. All normal daily activities i.e. climbing stair, driving etc. can be easily carried out.
8. **SLIPS, OIL & HEAT RESISTANCE** – Sole physical testing- The sole must be designed for 'long term' slip resistance & should pass SRC test, Sole should not break down in FOL (Fuel, Oil, Lubricant), should resist 1 minute contact at 300 Deg C. Must be tested for flexing, tear & Abrasion.
9. **SHOCK ABSORPTION** – Should have adequate shock absorption property and must absorb 30 joules of impact force at heel area – Protects knees & Joints from impact injury.
10. **QUALITY REQUIREMENT OF UPPER LEATHER** – Made from chrome tanned full grain leather.

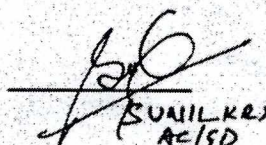
S.No	Parameters	Requirement	Trail directive as per Standard & clause
A	Thickness	2mm+/- 0.2 mm min.	5.4.2 EN ISO 20345 : 2011
B	Tear Strength	120 N min.	5.4.3 EN ISO 20345 : 2011
C	Tensile strength	15 N/mm min	5.4.4 EN ISO 20345 : 2011
D	Upper- outsole Bond Strength	4.0 N/mm min	5.3.1.2 EN ISO 20345 : 2011
E	Water vapour permeability	0.8mg/(cm <sup>2</sup> h) min.	5.4.6 EN ISO 20345 : 2011
F	Water vapour coefficient	15 mg/cm <sup>2</sup> min.	5.4.6 EN ISO 20345 : 2011
G	pH value	3.2 min.	5.4.7 EN ISO 20345 : 2011
H	Chromium VI content	3.0 mg/kg max.(Chromium VI should not be detectable)	5.4.9 EN ISO 20345 : 2011
I	Water penetration and absorption	0.2 g max and 30% max.	6.3 N ISO 20345 : 2011
J	Chrome Content	4.0% (Min)	IS:578:1985, RA

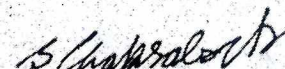
**QUALITY REQUIREMENT OF SOLE**


11. Sole is to be composite in nature. The mid-sole is to be of PU whereas outsole is to be slip-resistant rubber. Insole Antistatic penetration resistant fabric with removable antistatic in sock.

  
\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
\_\_\_\_\_

  
SUNIL K R  
AC/SD  
ITSP  
\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
\_\_\_\_\_

  
25 BN BSR  
\_\_\_\_\_  
\_\_\_\_\_



**DRAFT REVISED QR & TDs OF NON SKID TACTICAL/COMBAT/  
ADVANCE HIGH ANKLE BOOT**

**12. OUTSOLE**

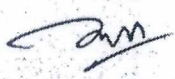

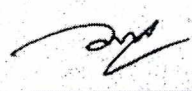
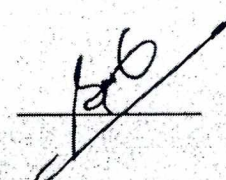

S.No.	Parameters	Requirement	Trail directive as per Standard & clause
A	Density	1.05± 0.1	SATR TM 134
B	Tear Strength	8 KN/m min.	5.8.2 EN ISO 20345 : 2011
C	Abrasion resistance (Volume loss)	150 mm <sup>3</sup> max.	5.8.3 EN ISO 20345 : 2011
D	Interlayer Bond Strength tasted after 3 weeks of conditioning as per Annx E ISO 5423:1992	Not less than 4.0 N/mm	5.8.6 EN ISO 20345 : 2011
E	Resistance to fuel oil	Increase in Vol. Not more than 12%	6.4.2 EN ISO 20345 : 2011
F	Resistance to Hot contact at 300°C.	No crack/ melting	6.4.1 EN ISO 20345 : 2011
G	Cleated Area of Outsole	Slip resistance requirement as per EN ISO 20345:2011-5.3.5	5.8.1.2 EN ISO 20345 : 2011
H	Thickness of Cleated outsole	4.0 mm min.	5.8.1.1 EN ISO 20345 : 2011
J	Cleat Height	2.5 mm min.	5.8.1.3 EN ISO 20345 : 2011
K	Flexing resistance	4mm max. After 30,000 flex cycles	5.8.4 EN ISO 20345: 2011

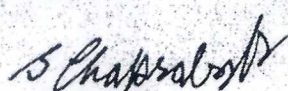
**13. MID SOLE**

S.No.	Parameters	Requirement	Trail directive as per Standard & clause
A	Hardness	35-50 Shore A	SATRA 205
B	Density	0.40-0.55 gm/cc	SATRA TM 134

**14. INSOLE & INSOCK**

S.No.	Parameters	Requirement	Trail directive as per Standard & clause
A	Thickness of insole or insole with non- removable insock	Not less than 2 mm	5.7.1 EN ISO 20345 : 2011
B	pH value	Not less than 3.2	5.7.4 EN ISO 20345 : 2011
C	Water absorption Water Desorption	70 mg/cm <sup>2</sup> min. 80% min.	5.7.3 EN ISO 20345 : 2011
D	Insole abrasion resistance	No severe damage after 400 cycles	5.7.4.1 EN ISO 20345 : 2011
E	In-sock Abrasion resistance	Shall not develop any hole before 25600 dry cycles & 12800 wet cycles	5.7.4.2 EN ISO 20345 : 2011





**DRAFT REVISED QR & TDs OF NON SKID TACTICAL/COMBAT/  
ADVANCE HIGH ANKLE BOOT**

**15. QUALITY REQUIREMENT OF LINING MOISTURE - wicking, hydrophobic antimicrobial lining.**

S.No.	Parameters	Requirement	Trail directive as per Standard & clause
A	Weight	150 gm/mt <sup>2</sup> min.	IS 1964:2001, RA 2010
B	Tear Strength	15 N min.	5.5.1 FN ISO 20345 : 2011
C	Abrasion resistance	Shall not develop any hole before 25600 dry cycles & 12800 wet cycles for Vamp and Quarter lining and 51200 dry cycles & 25600 wet cycles for Seat Region lining	5.5.2 EN ISO 20345 : 2011
D	Water vapour permeability	2 mg/cm <sup>2</sup> h min.	5.5.3 EN ISO 20345 : 2011
E	pH Value	3.2 min.	5.5.4 EN ISO 20345 : 2011

**16. QUALITY REQUIREMENT OF COUNTER STIFFENER**

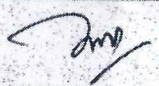

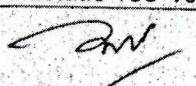
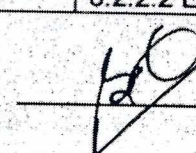
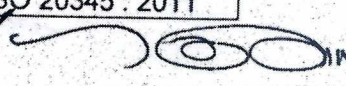
S.No	Parameters	Requirement	Trail directive as per Standard & clause
A	Material	Thermoplastic	IS 7554-2009 Rev No 1
B	Thickness	Min. 1.6 mm	
C	Shape Retention	After first collapse 18% (max.). After 5 <sup>th</sup> collapse-21% max. Recovery after two hours-21% max.	SATRA TM 186:2001
D	Peel strength (N/mm)	0.5 (min)	IS 554:2009 Rev 1

**17. QUALITY REQUIREMENT OF FLAT ARAMID LACE & BONDED THREAD**

S.No	Parameters	Requirement	Trail directive as per Standard & clause
A	Breaking Strength (lace)	ARAMID	Best Quality
B	Breaking Strength	Min. 750 Newton	IS 1969:2009
C	Abrasion resistance	Should withstand min. Of 5000 cycles	ISO 22774:2004
D	Breaking Load Aramid thread	Min. 1000 Newton	Min. 100 Newton As per BS EN ISO 2062

**18. QUALITY REQUIREMENT OF WHOLE FOOTWEAR**

S.No	Parameters	Requirement	Trail directive as per Standard & clause
A	Height of upper from insole	Min. 8 inch	5.2.2 EN ISO 20345 : 2011
B	Toe cap impact resistance	Not less than 14 mm for UK size 8	5.3.2.3 EN ISO 20345 : 2011 as per table 6
C	Slip resistance (SRC)	Meet table No.9	5.3.5.4 EN ISO 20345 : 2011
D	Specific Ergonomic Feature	As per EN ISO 20345	5.3.4 EN ISO 20345 : 2011
E	Penetration Resistance	As per EN ISO 20345	6.2.1 EN ISO 20345 : 2011
F	Energy Absorption of seat region	Min. 30 Joules	6.2.4 EN ISO 20345 : 2011
G	Electrical Resistance	Antistatic 100-1000 KO	6.2.2.2 EN ISO 20345 : 2011





**DRAFT REVISED QR & TDs OF NON SKID TACTICAL/COMBAT/  
ADVANCE HIGH ANKLE BOOT**

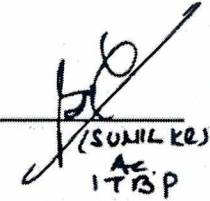
S.No.	Parameters	Requirement	Trail directive as per Standard & clause
H	Heat insulation of sole complex at 150°C	Temp increase on upper surface of the insole shall not be greater than 22°C after 30 minutes.	6.2.3.1 EN ISO 20345 : 2011
J	Cold insulation of sole complex	Temp decrease on upper surface of the insole shall not be greater than 10°C	6.2.3.2 EN ISO 20345 : 2011
K	Water resistance	Not more than 3 cm <sup>2</sup>	6.2.7 EN ISO 20345 : 2011
L	Ankle protection	Mean value 10 KN max. and Single value 15 KN max.	6.2.7 EN ISO 20345 : 2011
M	Cut resistance	Cut-resistance index not less than 2.5	6.2.8 EN ISO 20345 : 2011


**19. MATERIAL FEATURES**

- (a). **Upper:-** Black combination of full grain 2mm+/- 0.2mm thick leather and 1600 Denier based heavy duty ballistic grade nylon fabric for better flexibility in ankle/quarter region. The upper must be stitched with nylon anti-fraying stitching thread.
- (b). **Tongue:-** Heavy duty ballistic grade nylon fabric. Below & padded with 5mm PU foam. Lined by moisture wicking padded lining meeting IS 15298.
- (c). **Trims:-** Should be non-metallic.
- (d). **Thread:-** Waterproof thread, seam sealed on inside, No decorative stitching.
- (e). **In-sock:-** Fully moulded PU Antistatic with heel cushion for impact.
- (f). **TOE CAP:-** The boot shall be fitted with 200 J EN 12568- marked Toe cap. It cannot be removed without damaging the footwear.
- (g). **Lace:-** Kevlar laces of adequate length with breaking load of minimum 150 kg.
- (h). **Marking:-** The boot shall have marking category of S3 (Table 13 of IS 15298 Part 2:2011) & as per IS 15298 Part 2:2011, 7.

  
Neeraj Kumar  
 SSB

  
Sushil Kumar  
 PSO, BPRAD.

  
(SUNIL KE)  
 As  
 I.T.P

  
25 BN  
 BSR