संख्या. पी-63013/218/01/2025/मोड-I/सीसुबल/ 1045-50

भारत सरकार, गृह मंत्रालय
महानिदेशालय सीमा सुरक्षा बल
(रसद निदेशालय: आधुनिकीकरण सैल)
(Email-comdtord@bsf.nic.in)
(Fax: 011-24367683)

ब्लाक संख्या . 10,
सीजीओ काम्पलैक्स,
लोधी रोड, नई दिल्ली–03
दिनांक 2 अप्रैल 2025

सेवा में,

महानिदेशकः– आसाम राईफलस (through LOAR), केन्द्रीय ओद्यौगिक सुरक्षा बल, केन्द्रीय रिजर्व पुलिस बल, भारतीय तिब्बत बोर्डर पुलिस, सशस्त्र सीमा बल, राष्ट्रीय सुरक्षा गार्ड एवं पुलिस अनुसन्धान एवं विकास ब्योरो

विषयः **अनुमोदित गुणात्मक आवश्यकता /परीक्षण निर्देशों का प्रेषण**

तकनीकी विशेषज्ञों के उप समूह द्वारा किए गये पुनः सूत्रीकरण एवं महानिदेशक सीमा सुरक्षा बल द्वारा अनुमोदित **"Shock Shield"** के गुणात्मक आवश्यकता/परीक्षण निर्देशों को आपकी अग्रिम कार्यवाही हेतु प्रेषित किया जाता हैं।

संलग्न : उपरोक्तनुसार

आनन्द सिंह 2/4/25
(आनन्द सिंह तक्षक)
उप महानिरीक्षक (रसद)

प्रतिलिपि :–

1. **तकनीकी निदेशक**
   The Technical Director
   राष्ट्रीय सूचना–विज्ञान केन्द्र, नोर्थ ब्लाक, गृह मंत्रालय, नई दिल्ली
   NIC, North Block, MHA
   New Delhi, **(द्वारा ई–मेल)**
   (ई–मेल पता : mpsugandhi@nic.in)
   : आपसे अनुरोध है कि **"Shock Shield"** उपकरण के पुनः सूत्रीकरण किये गये गुणात्मक आवश्यकता/परीक्षण निर्देशों को गृह मंत्रालय की वैबसाईट (MHA website Division of MHA+ - Police Modernization Division-Qualitative Requirements-Qualitative Requirements of Machinery & Eqpt Items with Surveillance item) के अर्न्तगत अपलोड करने का श्रम करे।
2. SO (IT), North Block, MHA
   (Through E-mail)
   (E-mail address: soit@nic.in)
   : कृपया उपरोक्तानुसार कार्यवाही करने का श्रम करें।
3. तकनीकी विंग, सीमा सुरक्षा बल
   : कृपया उक्त उपकरण के गुणात्मक आवश्यकता/परीक्षण निर्देशों को सीमा सुरक्षा बल की वैबसाईट पर अपलोड करने का श्रम करें।
4. Sh. Samarth Sharma,
   Director Nodal Officer for MHA GeM,
   3rd Floor, Jeevan Bharti Building
   Conaught Lane, Janpath
   Cannaught Place, New Delhi-110001
   E-mail:directorcategory13@gem.gov.in
   For info with request to upload the approved QRs & TDs of **"Shock Shield"** on GeM Portal. Copy of QRs & TDs is attached with this letter.
5. The DIG (Prov),
   Directorate General, CRPF,
   Block No.1, CGO Complex, Lodhi Road,
   New Delhi-03.
   : वास्ते सूचनार्थ आपके पत्र संख्या–L.II-3/2021-25-Prov-DA-5 दिनांक 4 मार्च 2025 के संदर्भ में।
6. फाईल।

Appendix-A

REVISED QUALITATIVE REQUIREMENTS/ TRIAL DIRECTIVES OF SHOCK SHIELD

SL No	Name	QR Specifications		Trial Directives
1.	**Nomenclature**	Shock Shield		To be Checked by B.O.O/ Line Committee
2.	**Uses**	Shock Shield shall be used by troops during their deployment in Riot or Riot like situations. It is aNon-Lethal Equipmentto provide deterrence for self-defence against violent rioters/agitators.		
3.	**Colour**	Should be colourless		To be checked by B.O.O/Line Committee
4.	**Transparency**	Minimum 85%		• Certification from a Valid NABL accredited Lab • Duly certified in user manual/literature provided by OEM
5.	**Operating& Storage Temperature**	- 20°C to + 50°C		Certification from a Valid NABL accredited Lab
6.	**Water resistance for Electric parts**	IPX4 or above		
7.	**Weight**	4,500 gms (Maximum)		To be check by BOO/ Line committee
8.	**Shape**	Rectangular or any other shape providing maximum protection to the user		
9.	**Dimensions**	Length	**920 ± 20mm**	
		Breadth (Fiat)	560 mm to 600 mm	
		Breadth (Concave)	**600 mm to 620 mm**	
		Thickness	03 mm (Minimum)	
10.	**Polycarbonate Material requirements**	(i) The polycarbonate sheet shall be made of high impact resistant/ natural polycarbonate material. It may contain additives, processing aids and stabilizers (for example UV absorbers).		• Certification from any Valid NABL accredited Lab for the test conducted as per IS 14434:1998.

SL No	Name	QR Specifications	Trial Directives

(i) The PC Sheet material shall comply with the requirements as below:-

Sl. No	Characteristics	Requirement	Method of test, Ref to IS/Annx
(a)	**Melt Flow Index**, gram/10 min. (at 300°C under 1.2 Kg load when measured after pre- drying of the material at 120 ± 5°C upto 4 hrs.)	i) 1.5 to 8 (for extrusion /Thermoforming) ii) 8 to 15 (for injection moulding)	IS 13360 (Part 4 / Sec 1/ Sub-sec 2)
(b)	**Specific Gravity**	1.19 to 1.22	IS 13360 (Part 3 Section 11)
(c)	**Flexural Modulus**, Min, MPa (With crosshead speed of 1.2 mm/min and a span to depth ratio of 16 to 1 (test specimen size, 04 mm x 10 mm)	2200	IS 13360 (Part-5 Section-7)
(d)	**Izod Impact Strength**, notched, Min, kJ/m² (test specimen thickness of 03 mm and notch radius of 0.25 mm)	60	IS 13360 (Part-5 Section-4)
(e)	**Deflection Temperature** under load at 1.82 MPa, Min,°C	120	IS 13360 (Part-6 Section-17)

Certification from any Valid NABL accredited Lab for the test conducted as per IS specified at column-4 with results as per values shown in column-3 (a), (b), (c), (d) & (e) of the table at Sl No 10 .

<table>
<tr>
<td>11</td>
<td>Polycarbonate sheet characteristics</td>
<td>(i) PC sheet shall comply with the test requirements as per table below:-
<table>
<tr><th>Sl.No.</th><th>Characteristics</th><th>Requirement</th><th>Method of test Ref to IS/Annex</th></tr>
<tr><td>(a)</td><td>Dart drop impact Minimum J (at 27°C)</td><td>150</td><td>Annex B of IS 14443</td></tr>
<tr><td>(b)</td><td>Light Transmission, percent, minimum</td><td>85</td><td>IS 13360 (Part-9 Section-5)</td></tr>
<tr><td>(c)</td><td>Flammability Test (test specimen thickness 3.18mm±0.13mm)</td><td>94 HB class</td><td>IS 16864, protective Shield specification, Annex'C'</td></tr>
</table>
(ii) The polycarbonate body of the Shock Shield shall have abrasion resistance surface coating on both surfaces.</td>
<td>Certification from any Valid NABL accredited Lab for the test conducted as per IS specified at column-4 with results as per values shown in column-3(a), (b) & (c) of the table at Sl.No.11 & to be checked by BoO for column-3(b)</td>
</tr>
<tr>
<td>12</td>
<td>Handle/Arm rest Characteristics</td>
<td>(i) Handle with Grip, Arm Support shall be provided for comfortable use of teh equipment for long durations.
(ii) General requirement of Handle:-
(a) Material for handle should be polymeric, preferably polycarbonate (Sling attachment)
(b) Classic bolts(MS) if used, shall be SS 304 hex-headed. Dome Nut and bolts system should preferably be self-locking.</td>
<td>To be check by BoO /Line Committee.</td>
</tr>
</table>

Sandeep Kasher

SL No.	Name	QR Specifications	Trial Directives
13.	**Field Performance requirements of Shock Shield**	(a) **Resistance to vandalism :-** The Polycarbonate body of the shield shall have impact resistance of level 'A3' when tested for vandal resistance as per the method prescribed in Annex C of IS 14443.	Certification from any Valid NABL accredited LAB for the test prescribed in Annex C of IS 14443
		(b) **Resistance to surface penetration: -**The Polycarbonate body of Shock shield shall have resistance of level 'B3" against penetration when tested for resistance to forced entry as per the test method prescribed in Annex D of IS 14443.	Certification from any Valid NABL accredited LAB for the test prescribed in Annex D of IS 14443. Field Trial on NCNC basis.
		(c)**Resistance to Surface Abrasion:-**The resistance of Shock shield to surface abrasion shall be tested in accordance with ASTM D 1044 for 100 cycles under 500 g load. Haze of test specimen shall not be more than 20 percent.	Certification from any Valid NABL accredited LAB for the test in accordance with ASTM D 1044.
		(d)**Resistance to Environmental Stress Cracking**:- Environment Stress Cracking Resistance (ESCR) test shall be performed on polycarbonate body of the shield (with Protective coating) by constant strain method as per IS 13360(Part 8/ Sec 9).	Certificate from any Valid NABL accredited lab for the test conducted as per IS 13360 (Part8/Sec 9).
14.	**Shelf Life**	(i) 06 Years (minimum) except battery, (ii) For battery 01 year (minimum)	Recommended
15.	**Miscellaneous**	(i) The Word RAF/ POLICE in 100 mm width and 400 mm length May be written of fluorescent paper size(100mm width and 400mm length ±10mm) (colour to be specified by user) on front side or as required by user department. (ii) The design of the shield should be such that during handling the vision area should not fall on the resting surface. (iii) Elastomeric bushes & washers should be used for nut and bolt system.	To be check by BOO/ Line committee

Sandeep Kesh

SL No.	Name	QR Specifications			Trial Directives
16.	**Battery Specifications for Shock Shield**	(a)	Capacity	As Required	Certificate from any Valid NABL accredited lab
		(b)	Type	Rechargeable Batteries complying to:- 1. IS 16046 (Part I) for Nickel based batteries. or 2. IS 16046 (Part II) for Lithium based batteries.	
		(c)	Charging cycles	1000 (minimum)	
		(d)	Charging time	Maximum 04 hours from low to full charge.	
		(e)	Number of shocks	Minimum 7000 qtr second burst when fully charged	
		(f)	Indicators	Full, Low & Charging Battery (on equipment or on Charging Adapter)	To be Checked by B.O.O/Line Committee
17.	**Voltage&Current**	(a)	Input Voltage	220 V, 50 Hz (±10 %)	Certificate from any Valid NABL accredited lab
		(b)	Output Voltage	80 KV (minimum)	
		(c)	Max Duration of Impulse/ Current	1 ms/ 1mA	
18.	**Electrical Safety**	Compliance to Clause 13 (Leakage Current and Electrical Strength at Operating Temperature) & Clause 15 (Moisture Resistance) of IS 302-1			Certification from any Valid NABL accredited LAB
19.	**Trigger/ Shock Mechanism**				
(a)	**Trigger Type**	There shall be on/ off switch and a Self- Returning trigger on Shock Shield.			To be Checked by B.O.O/Line Committee
(b)	**Placement of Electrodes their Shape/ Design**	(i) Aluminium Electrodes should be uniformly distributed coveringat least 20% area of front surface of the shield. (ii) Thickness of Electrodes-Min 1.5mm(±0.5mm). (iii) Width of Electrodes- Min 20 mm(±03mm) (iv) Electrodes shape/ Design must be so that the vision area of the shield doesn't get affected. (v) Electric sparks will be visible from electrodes for deterrence.			

Sandeep Kakkar

20.	**Miscellaneous**		
	(a)	The Manufacture/ supplier will provide complete test reports for confirmation of compliance from any NABL/Govt. accredited Lab.	To be Checked by B.O.O/Line Committee
	(b)	01 year warranty for battery& electrical circuits/fittings and 03 years warranty for whole equipment.	
	(c)	OEM/ Traders should be able to provide at least 03 years AMC on completion of warranty.	
21.	**Field testing/ observations by BOO**		
(a)	**Drop Test**	To confirm the physical ruggedness of equipment, The equipment should be thrown five times from 02 meter height on a concrete surface. No physical damage to the equipment should be reported.	To be Checked by B.O.O and their views will be considered final and binding against the Lab Test Reports.
(b)	**Impact Test**	The shield will be hit five times on the front surface/edgeusing 01 meter long& blunt SS/Iron rod (with circular cross section) of 10mm-25mm Dia& 1kg-1.5kg Weight. Different points of impact may be chosen for every strike. No damage/ cracks should be reported.	To be Checked by B.O.O and their views will be considered final and binding against the Lab Test Reports.
(c)	**Current Detection**	Board will check the presence of electrical charge/energy on various portions of electrodeswith the help of common electric tester (Screw Driver type).	To be Checked by B.O.O and their views will be considered final and binding against the Lab Test Reports.

Hav/GD Ramesh Kumar, AR

Insp. Abhinav Kumar Pandey, SSB

Vikrant Vedwan, AC (Tech Officer) RAF

Pankaj Dagar , TC, NSG

P.A.Shegar, AC, CISF

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Anil Kumar, 2-I/C 103 RAF

Shahnawaz Khan, DIG(Prov)

Sonal V.Misra, IPS, IG (Prov)

Sandeep Khirwar, IPS, ADG HQr

Approved/Not Approved

DG, BSF