

26, Man Singh Road, Jaisalmer House,  
New Delhi, 18.1.2010

To

The DGs: Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D

Subject: - QRs/Technical Specifications for the security related equipments -regarding

The QRs/Technical Specifications for the following security related equipments have been accepted and approved by the Competent Authority in MHA:-

- (i) Shot Gun/Spas Gun
- (ii) Armour Plates fir Snipers
- (iii) Laser Grip for Glock Pistols
- (iv) UBGL
- (v) Lay Tuning (Road Blocker)
- (vi) Slithering Rope
- (vii) Commander Torch
- (viii) Sonic Defenders-Hearing Protection Device
- (ix) Robot
- (x) Bullet Proff Jacket Full Body Protection(360 degree)
- (xi) Non Magnetic Tool Kit
- (xii) Gas Mask

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

3. The trial directives for the following items have also been approved by the Competent Authority in MHA

- (a) Mini Remotely operated vehicle-F/X
- (b) Electro Stun Gun
- (c) Light Support Weapon

18/1/10  
(R.S.Sharma)  
Director (Prov)

Copy to:-

DD(Procurement),MHA

Copy for information to:-

PS to JS(PM),MHA

**QR'S/SPECIFICATION FOR BULLET PROOF JACKET FULL BODY PROTECTION(360°)/BULLET PROOF JACKET (360° PROTECTION)**

1. **Ballistic Protection.** The basic Bullet proof jacket should meet NIJ Level III & IIIA according to NIJ STD 0101.06. The basic Jacket should defeat following ammunition from 10 m distance.

- (a) 7.62 x 51 mm FMJ Nato M-80 or Indian ball Fired from Indian SLR Rifle
- (b) 7.62 x 39 mm MSC ammunition fired from AK 47 / 56 Rifle.
- (c) 9mm Para FMJ RN bullet 8.2g at V = 436 m/s fired from Pistols and sub machine guns such as MP-5.
- (d) 5.56x45mm NATO SS109 / INSAS.
- (e) Protection against Russian/Chinese Tokerev(7.62x25 mm ammunition) gun,
- (f) 44 Magnum SJHP bullet 15.6 g at V = 436 m/sec.

2. **Construction.** The bullet proof jacket should provide 360 degree all round upper torso body protection. The system should be flexible and allow complete freedom of movement without compromising the ability to acquire and neutralize threats from any firing position including when wearing a ballistic helmet. The full body armor should have throat protector & upper arm protector as add on.

3. **Flexibility.** BPJ should ensure snug fit that exactly fits the body contour. It should have hard armor panel flexible enough to follow the body contour thus ensuring that it does not hinder body movement and use of arms.

4. **Emergency Release.** In case of emergency situation the jacket should have a special provision for instantaneous discard in one swift pull. It should be easy to open the vest in a sitting position and the jacket must split in two parts to get fast access to wounds.

5. **Emergency Evacuation:** The jacket must have minimum two pull out/buddy straps.

6. **Wearer Comfort.** The design and fitment of the BPJ should provide weight distribution over the waistline and shoulders instead of only shoulders, to enhance the wearer's comfort. Self suspending Ballistic system to keep ballistic panels in place, prevent sagging and/or bunching that can expose vulnerable areas.

7. **FHAH Design.** The BPJ should have Flexible Harness Attachment System (FHAH) that facilitates attachment of various pouches. Multipurpose side wings to secure the vest around the waist, to provide adjustment and allow quick break away, Offers load attaching point's for the sides of the vest and to hold the side plate pouches which should be adjustable both vertically and horizontally.

8. **Field Up-Gradable Add-ons.** The BPJ should have the provision to attach / detach protection armour at the Throat area, Upper Arms and these should not hinder normal movement..

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### 17. BELT/KAMARBANDH

- (a) An additional belt of nylon/polyester weaving with minimum width of 10cm should be provided around the waist to properly secure the B.P. jackets with the body of the wearer around waist, so that weight of jacket is distributed on waist/shoulders. Kamarbandh should be of same material as outer carrier with velcro.
- (b) Two pouches (one each on front and rear of outer carrier) should be provided to accommodate two 305 mm x 254mm Hard Armour Plates so that jacket protects vital organs of body.
- (c) Ballistic panels (SAPs & HAPs) should be removable from outer carrier.
- (d) Outer carrier shall be machine washable.

### 18. TRAUMA PAD FOR TRAUMA ATTENUATION.

- (a) Trauma pad must be provided behind the SAPs, to provide proper cushioning.
- (b) It must cover uniformly up to the edges of the SAPs.
- (c) Back face signature (BFS) should not exceed 25mm in plasticine block at  $30 \pm 2.9$  degree centigrade temperature of plasticine.
- (d) Drop test will be carried out as per NIJ standard 0101.06..

### 19. MATERIALS.

- (a) The outer carrier shall be made of high tenacity, heavy duty, abrasion Proof and 100% vest integrity fabric PU coated Nylon.
- (b) The fabric weight should not be less than 95 gm/m<sup>2</sup>.
- (c) The fabric shall be treated for protection against water, fire and ultra violet rays exposure.
- (d) The fabric must be suitable to wear in the Indian conditions of heat, rain and humidity.
- (e) The inner side (body side) shall also be of a similar fabric and shall be treated for moisture and water repellency.
- (f) The cloth of the carrier must be pre-shrunk before stitching.

#### Note:-

The methods of testing criteria for measuring the properties of outer carrier shall be as per IS: 11871-1986, IS:3417-1979 (reaffirmed 1997), IS:392-1989 and IS 391-1975).

- (i) Duration of flame after removal of burner maximum 5 seconds (Test Method ISI 1871).
- (ii) Duration of flame afterglow-maximum 5 seconds (Test method ISI 1871).
- (iii) Hydrostatic Head-Minimum 100 cms of water (Test Method IS 391-1975).
- (iv) Water penetration should be zero (Test Method IS392-1989).
- (v) Mean Ultra Violet Penetration Factor-Minimum 100 (Test Method IS 3417).

The tests reports specified will be submitted by the manufacturer from a accredited Lab.

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**Immunity Level:**

(a) **Hard Armour Plates:** The HAPs are to be tested in conjunction with SAPs.

(i) Six bullets NATO ball (9.4g to 9.6gms) fired from 7.62mm SLR/bolt action rifle from a distance of 10 meters at zero angle of incidence.

(ii) Six bullets (mild steel core), from 7.62mm of AK rifle from a distance of 10 Mts at zero angle of incidence on separate plates.

(b) **Soft Armour Panels:** Six shots fired through 9mm Sub Machine Gun (Such as Sten Machine, MP-5, Carbine, any other variant) from a distance 5 meters with a muzzle velocity  $430 \pm 15$  m/s and the weight of the bullet between 7.4 gm to 8.2 gm as specified in standard.

The velocities of bullets fired through weapons are given as follows:

Armour Type	Test Bullet	Reference Velocity m/s	Hits per Armor part at 0° angle of incidence	BFS* Depth Maximum	Shots per Panel
IIIA	9mm FMJ RN	430± 15	4+2 at 30° angle	25mm	6
III	7.62mm NATO FMJ	838± 15	6	25mm	6
	7.62mm mild steel core	715± 15	6	25mm	6
	5.56 x 45 NATO SS 109/INSAS	920± 15	6	25mm	6

\* BFS – Back Face Signature on Plasticine.

\* Selected weapon and lot of ammunition, for which reference velocity has been once achieved, will remain the same throughout ballistic testing of all tender samples of various firms.

(All tests will be in accordance with the SOP. Any changes in the SOP will be decided by Technical Evaluation Committee).

27. **Testing Criteria.**

(a) Scientific inspections/ballistic trial of these BP jackets will be conducted as NIJ standard 0101.06.

(b) Groin Pad will be tested ballistically with 9mm SMG. Three evenly spaced fair hits at zero degree angle incidences shall be taken and BFS should not exceed 28mm.

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23/12 BSF

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Moi PR Mohant  
23/12

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At Col S Bhatta  
24/12

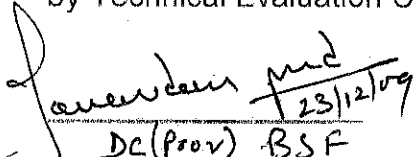
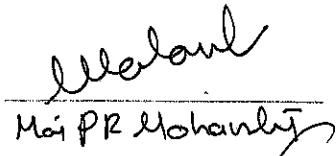
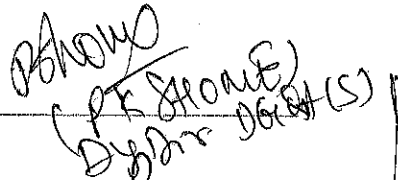
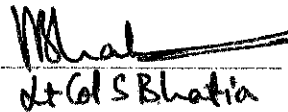

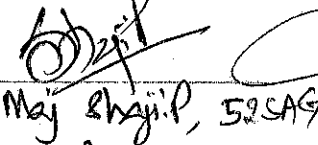
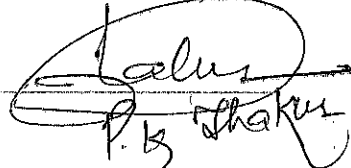
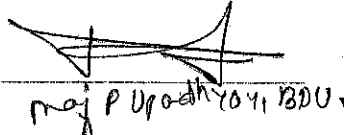
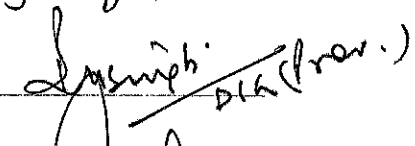
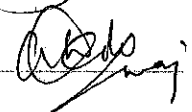
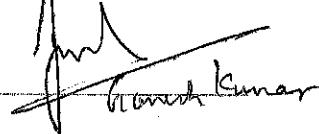
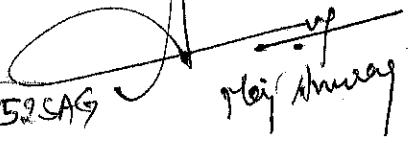


28. Miscellaneous.


- (a) The supplier/manufacturer shall provide one number of BP jackets of the order size along with HAP at their cost from the lot of every 500 numbers but minimum four numbers per lot of jacket for the purpose of the ballistic test/evaluation of the tendered specifications at the time of materializing the supply. These will be selected prior to dispatch at random in the factory premises.
- (b) While submitting the samples for tender, the supplier shall mention the exact area of SAP and HAP and give the template of the jackets as per the area, so that import of raw materials of the BP jackets will be allowed accordingly.
- (c) Five tender samples are required for technical evaluation from a firm.
- (d) Each model of BP jacket offered by vendor should be submitted against a separate tender form.

29. Testing facilities.

Ballistic trials as per the QRs will be held at TBPL, Chandigarh or any other facility as decided by Technical Evaluation Com.

 DC (Prov) BSF	 Maj PR Mohan	 Dy Dir (Prov) (S)
 Lt Col S Bhatia	 Maj Roshni	 Maj Shaji P, 52SAG
 P. B. Shakti	 Maj P Upadhyay, BDU.	 Dy Dir (Prov.)
 A. S. Singh	 Anand Kumar	 Maj Shree

Approved/ Not approved

  
(N.P.S Aulakh) 11  
Director General, NSG