

पत्रांक संख्या/आपूर्ति/95-1-5-2019)/.....645.....

बिहार पुलिस मुख्यालय,
(आधुनिकीकरण, अपराध अभिलेख एवं प्रोविजन प्रभाग)

पटना, दिनांक- 04/09/20

सेवा में,

निदेशक,

सूचना एवं जनसम्पर्क विभाग,
बिहार, पटना।

विषय— निविदा आमंत्रण सूचना सं0-08/2020-21 के प्रकाशन के संबंध में।

निदेशानुसार उपर्युक्त विषय के संबंध में निविदा आमंत्रण सूचना सं0-08/2020-21 की प्रतियाँ भेजते हुए अनुरोध है कि इसे राज्य एवं राज्य से बाहर के प्रमुख समाचार पत्रों में (अंग्रेजी एवं हिन्दी) के अगले दो संस्करणों में प्रकाशित कराने की कृपा की जाय साथ ही पी0आर0डी0 वेबसाइट पर भी प्रसारित करने की कृपा की जाय।

इस निविदा आमंत्रण सूचना का प्रकाशन किन-किन समाचार पत्रों में किया गया इसकी सूचना देने की कृपा की जाय।

अनु0-यथोपरि।

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पुलिस महानिरीक्षक के सहायक (क्यू0),
बिहार, पटना

प्रतिलिपि:—

1. आई0टी0 मैनेजर, पुलिस महानिदेशक का कार्यालय, बिहार, पटना को कृपया सूचनार्थ। कृपया इसे आज ही वेबसाइट पर अपलोड किया जाय। साथ ही Indian Trade Journal, Kolkata के अंक में प्रकाशन हेतु Government of India, the Controller of Publications, Civil Lines, Delhi : 110 054, (Tel No. 011-23812527, FAX : 011-23817846), Email Id-sk.mondal.dgcis@nic.in के पतेपर भी अनिवार्य रूप से भेजा जाय।
2. Government of India, the Controller of Publications, Civil Lines, Delhi : 110 054, (Tel No. 011-23812527, FAX : 011-23817846), Email Id- sk.mondal.dgcis@nic.in को कृपया सूचनार्थ एवं आवश्यक क्रियार्थ प्रेषित। अनुरोध है कि उक्त निविदा का प्रकाशन Indian Trade Journal, Kolkata के अंक में करने की कृपा की जाय।

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पुलिस महानिरीक्षक के सहायक (क्यू0),
बिहार, पटना

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Police Headquarters, Bihar, Patna
Notice Inviting Tender No.-08/2020-21

1. Name of the Department: Office of Director General of Police, Bihar, Patna.
2. Last date & time for the acceptance of the tender : **30/09/2020**, Till 02:00 PM
3. Date & time fixed for the opening of the tender : **30/09/2020**, At 04:00 PM
4. Place fixed for receiving & opening the tender : Office of Director General of Police, Bihar, Patna.
5. Details of Job:

S.N.	Item name	Quantity
1	Bullet Proof Jacket (Protection Level III/IV NIJ)	24
2	Ballistic Goggles	12
3	Tri-Lower Hand Guard with Rail for MP-5	25
4	Under Barrel Tactical Light 2	12
5	Tactical Grip with Flashlight and Green Laser Sight	25
6	Tactical Observation Camera	01
7	Automatic Cutter (Combo Tools battery operated)	01
8	Manual Spreader & Cutter	01
9	Bomb Inhibitor	02
10	Hook and Line Set	02
11	Thermal Cutter	02
12	Explosive Test Kit	02

Specifications and other terms & conditions of the tender may be obtained in person from this office or may be downloaded from the website www.prdbihar.gov.in or www.biharpolice.bih.nic.in.

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Bihar, Patna

Terms & Conditions of Tender No.-08/2020-21

1. The tender should be submitted in two parts: (i) Technical Bid and (ii) Financial Bid, duly sealed in two separate envelopes super-scribed as "Technical Bid" and "Financial Bid".
2. All relevant papers/ E.M.D./certificates/specifications etc. of items should be enclosed in the Technical Bid.
3. The rates of the items shall be quoted in the Financial Bid only.
4. All charges like IGST/CGST/SGST etc. shall be clearly mentioned in the Financial Bid and the net rate (in figures and words) including all taxes and duties must also be quoted. Vague offers like indicating taxes "as applicable" will not be accepted.
5. The rates of the items shall be quoted in the Financial Bid in two parts :
(i) With AMC (Annual Maintenance Contract) and (ii) Without AMC
6. There should be no cutting, over writing or correction on the rates.
7. The technical and financial bids for each item should be submitted separately in separate envelopes. The technical and financial bids for more than one items submitted together in the same envelope shall not be accepted.
8. If the financial bid is submitted in the same envelope containing the technical bid then also it shall be summarily rejected.
9. The technical and financial bids should be put in two separate sealed envelopes and the envelopes should be marked Tender No-08/2020-21 (Technical Bid) and Tender No-08/2020-21 (Financial Bid) along with the name and address of the firm. The sealed envelopes containing the technical and the financial bids should be sent in another sealed envelope which should be marked as Tender No-08/2020-21. **This envelope should not bear the name and address of the firm.**
10. Income Tax Returns of last three years, a photocopy of GST registration number of the participating firm and turn-over of any two of the previous three financial years should be submitted with the technical bid. It should be specifically mentioned whether IT return has been filed manually or electronically.
11. The turnover of the firm for the last reported financial year should be at least equal to the amount of the supply order which is being issued. A copy of the profit and loss Account of the firm for any two of the previous three financial years, certified by a Chartered Accountant should be submitted along with the tender. If the tenderer is authorized dealer or authorized supplier of manufacturing firm, then the certified details of the turnover of authorizing firm may be accepted. Tender specific authorization from the OEM must be submitted, but in certain cases where authorization from OEM is not required, the Technical-cum-User committee (T.U.C.) shall decide about exemption (if any) on a case-by-case basis; citing appropriate reasons for the same.
12. If there is some discount in the price of any item, it should be deducted from price itself and such discounts should not be quoted separately.
13. If the product is available on DGS & D rate contract, then a copy of the contract must be attached and pricing be done including all taxes.
14. A copy of the test report for the product issued by any established and recognized private Laboratory or by agency accredited by the Government should be attached with the technical bid. However if required, the Technical-cum-User committee (T.U.C.) can take decision regarding exemptions/relaxations (if any), citing appropriate reasons.
15. In case of Bullet Proof/Bullet Resistant items, test report of TBRL or any Government Approved/Recognized Laboratory is compulsory.

16. Firms participating in this tender shall also submit duly sworn affidavit to the effect that " this firm has not been black listed/debarred by any Government or Semi Government or Private Agency and no sister concern of this firm is participating in this tender."
17. Firms participating in this tender shall also submit the self attested list of users of its equipments.
18. All items shall be received at Central Clothing Store, Patna; therefore price should be quoted FOR Central Clothing Store, Phulwari Sharif, Patna.
19. Firms will have to deposit a sum of Rs. 50,000/- (Fifty Thousand) only as an earnest money deposit in the form of Bank Draft duly pledged in favor of the undersigned along with the quotations. The small scale units located in Bihar shall not be liable to deposit earnest money. Exemption from submitting E.M.D. will also be available to those who are registered with the Central Purchase Organization/State Purchase Organization and National Small Industries Corporation (NSIC).
20. Technical Bids will be opened on scheduled date and time in the office chamber of Police Headquarter. Representatives of the firms competing in the tender may remain present at the time of opening of the technical bid.
21. The technical bids will be opened first and placed before the Technical Committee of the Police Headquarters, Bihar. If the technical bids are found satisfactory as per tender conditions, it will be put before Central Purchase Committee of the Police Headquarters, Bihar. The firms may be required to participate in the demonstrations of the quoted product and discussions with this committee.
22. Any paper/document will not be accepted after opening the tender.
23. Successful firm will have to enter into an agreement after depositing a sum of 5% of the total value of the order as security money in the form of Bank Guarantee duly pledged in favor of undersigned.
24. The firm will be required to provide satisfactory after-sales service after the delivery of the product.
25. The firm will be required to supply all the items within the stipulated time frame as mentioned in the purchase order.
26. Payment for the delivered items will be made only after the acceptance report of the Inspection Committee of the Police Headquarters, Bihar.
27. The firm whose quotation is approved by the Central Purchase Committee of the Police Headquarters, Bihar, shall be invited to enter into an agreement with the undersigned.
28. It is expected to submit the duly filled chart attached herewith, along with the technical bid if not the tender shall be summarily rejected.
29. Indexing of the requisite documents must be done and submitted along with the technical bid.
30. Hands on training for 3 weeks of the equipment must be imparted to the user group by the firm after successful installation.
31. Director General of Police Bihar, Patna reserves the right to reject any or all the quotations partially or fully, without assigning any reason thereof.
32. The Quantity indicated may increase or decrease at the time of issuing purchase order.
33. The bids must be include the data sheet of individual item.

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Bihar, Police.

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No can procure in case there is shortage

No. IV-24011/27/2013-Prov-I/1934

भारत सरकार/Government of India

गृह मंत्रालय/Ministry of Home Affairs

पुलिस आधुनिकीकरण प्रभाग /Police Modernization Division

संभरण-1 डेस्क /Prov.I Desk

Jaisalmer House, 26th Man Singh Road,
New Delhi, the 6th October, 2015

De/Pl/

IG(Prov)

To

DDG(Prov)

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

Subject: QRs and Trial Directives of Bullet Resistance Jackets.

Sir,

SC/AR

I am directed to refer to the subject mentioned above and to say that the QRs and Trial Directive in respect of Bullet Resistant Jackets as per Annexure has been approved by the competent authority in MHA.

2. Concerned CAPFs and BPR&D will be accountable for correctness of the QRs and Trial Directives of Bullet Resistant Jackets.

3. Henceforth, all the CAPFs should procure the above item required by them strictly as per the laid down QRs.

4. BR Jacket is protective gear and therefore, putting detail QRs of such items on web site may not be in the interest of nation keeping in view its security. However, while floating tenders/RFP, utmost care needs to be taken to have effective transparency in the procedure, keeping in view the guidelines used by the CVC on the subject.

Yours faithfully,

Copy - WE & FMA
Spk - su

M. N. Sukole

Under Secretary (Provisioning-I)

Tele: 23381278

Encl: As above.

Copy to: DDG (Procurement), MHA

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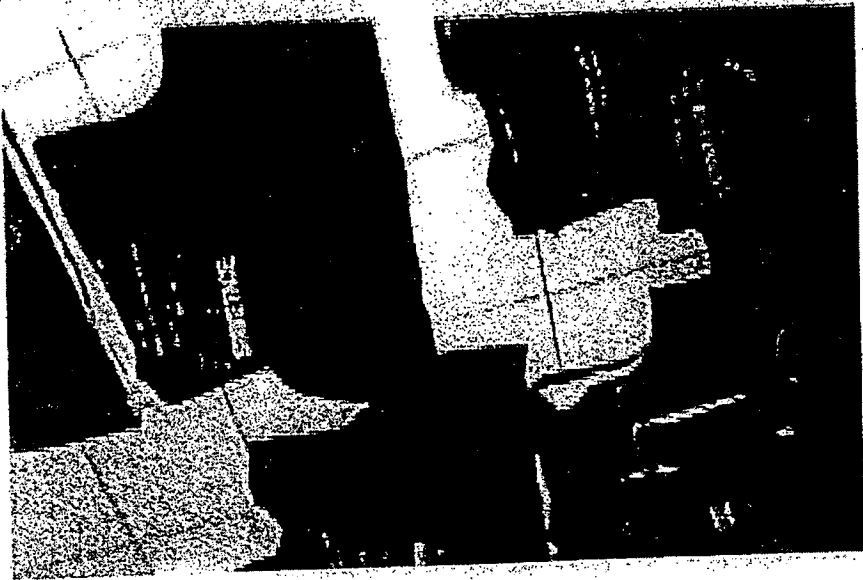
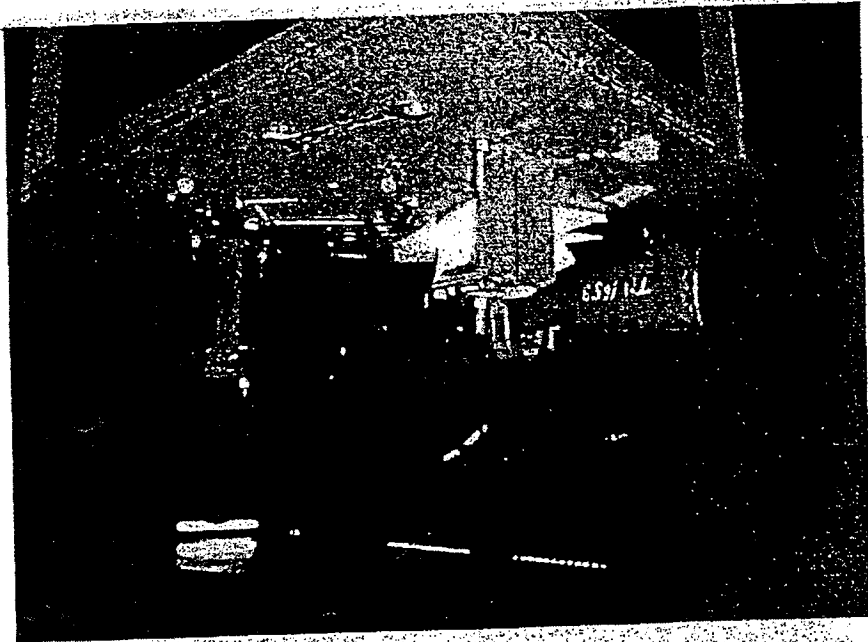
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Bullet Resistant Jackets



Qualitative Requirements And Trial Directives

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**Qualitative Requirements
For
Bullet Resistant Jacket**

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QUALITATIVE REQUIREMENTS FOR BULLET RESISTANCE JACKETS

General Directives

1. Before commencement of ballistic trial vendors shall be briefed about test procedures. They will be asked to sign certain certificates (Annexure A and A1). Tests will be conducted as per Trial Directive.
2. The decision of Technical Evaluation Committee will be final. The test results will be recorded on the same day and firms' signatory shall be required to sign Compliance Test Report (CTR). No re-testing of tested samples on the firm's request will be undertaken.
3. Test sequence will be decided through draw of lots.
4. Action on Fair and unfair shots will be taken as per Trial Directive.
5. Physical examination of the tender sample would be carried out by a Group of Officers nominated by the Chairman of Technical Evaluation Committee.
6. Only vendor or one authorized representative of firm would be present during the physical examination which would include physical parameter and weight, comfort and checking of the documents.
7. Vendor or authorized representative of firm must submit in writing, any objections, or representation, if any, with regards to these trials, to the officer In charge of the team, within **One hour** on the completion of evaluation of their sample.
8. *User BoO shall carry out the Human Fitment Trial and Functional Operational Trial of full BR Jacket before ballistic trial evaluation. Based on the operational requirements, the user will assess the type of BR Jackets (44 mm BFS or 25 mm BFS), required by them.*
9. Ballistic trials as per the QRs will be held at TBRL/CFSL, Chandigarh or any other facility (Any NABL accredited Lab which is specifically approved for Ballistic testing) as decided by Technical Evaluation Committee. The entire proceedings of the preparation of various equipments such as plasticine box, chronometer, mounting etc, standardization, reading of these instruments and their mounting and conduction of the ballistic trials, will be carried out by the experts of the laboratory.
10. The final results would be made available to the vendor or authorized representative of firm at a designated place and time, decided by the Chairman of the Technical Evaluation Committee.

A collection of handwritten signatures and initials in black ink, including names like 'Anand', 'Veeray', 'Ajay', 'A. Kumar', and 'A. R.', along with various initials and scribbles.

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11. The decision of the Chairman, Technical Evaluation Committee shall be final on the representation of vendor or authorized representative of the firm.

DESIGN PARAMETERS FOR BR JACKETS

- A. Shall conform to Trial Directive, "Ballistic Resistance of Body Armor," Protection against all of the following ammunitions fired from weapons mentioned against each:
- (i) 9x19 mm cartridge fired through Sub Machine Gun (Such as Sten Machine, MP-5, Carbine, any other variant) from a distance of 5 meters to achieve a muzzle velocity $430 \pm 15\text{m/s}$ and the weight of the bullet between 7.4 gm to 8.2 gm.
 - (ii) 7.62x51mm cartridge NATO ball ammunitions fired through 7.62mm SLR/Bolt action rifle from a distance of 10 meters to achieve a muzzle velocity $838 \pm 15\text{m/s}$ and the weight of the bullet 9.4 gm to 9.6 gm.
 - (iii) 7.62 x 39mm (mild steel core bullet) cartridge fired through AK series rifles from a distance of 10 meters to achieve a muzzle velocity $715 \pm 15\text{m/s}$ and the weight of the bullet 7.45 gm to 8.05 gm.
 - (iv) 7.62 x 39mm (hard steel core bullet) cartridge fired through AK series rifles from a distance of 10 meters to achieve a muzzle velocity $635 \pm 15\text{m/s}$ and the weight of the bullet 7.45 gm to 8.05 gm.
 - (v) 5.56 x 45mm Ball MK M (Equivalent to 5.56 mm NATO (M 193)) cartridge fired through INSAS rifles from a distance of 10 meters to achieve a muzzle velocity $890 \pm 15\text{m/s}$ and the weight of the bullet 3.5 gm to 4.0 gm.
- B. Vest should have the components mentioned in para D below. Each component should be made of multi layers of same material. Each layer will be in single piece and of equal shape and size to maintain uniform thickness all over area up to edge level.
- C. **SIZES OF SOFT ARMOUR PANEL (SAP)- STANDARD, LARGE & EXTRA LARGE.** SAP shall be covered with durable water repellant fabric that exhibits excellent sealing properties thus protecting the ballistic material from moisture.

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D. AREAS OF COMPONENTS OF SOFT ARMOUR PANEL
Coverage area of the Soft Armour Panel as per the sizes will be as under: -

(Table No. 1)

S. No	PANEL	STANDARD SIZE (Sq. Mtr.)	LARGE SIZE (Sq. Mtr.)	EXTRA LARGE SIZE (Sq. Mtr.)
1	FRONT	0.15	0.18	0.21
2	BACK (inclusive of sides)	0.24	0.26	0.28
3	COLLAR (TOTAL)	0.06	0.06	0.06
4	SHOULDER (TOTAL)	0.04	0.04	0.04
5	GROIN	0.06	0.06	0.06
	TOTAL	0.55	0.60	0.65

However, drawings of the various components of BR Jacket are mentioned in Trial Directive.

- (i) Negative tolerance in terms of area measurement is not permissible.
- (ii) Measurements will be made with the help of scaled drawing on graph paper and using planimeter.

E. WEIGHT OF THE JACKET

Total weight of BR Jacket including HAPs, SAPs, trauma pads and outer carrier should not exceed as mentioned below:-

(Table No. 2)

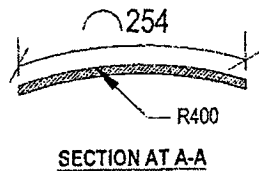
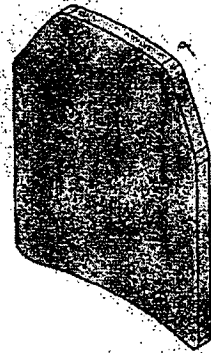
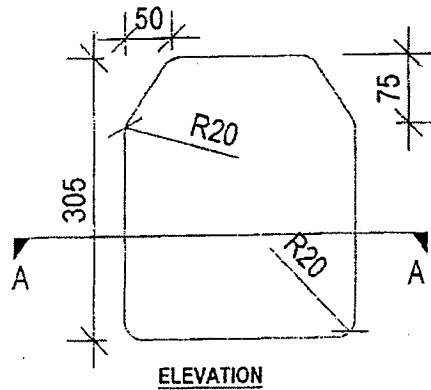
S No.	Size	Weight of Jacket without side plates when 25 mm BFS is permissible (In Kgs)	Weight of Jacket without side plates when 44 mm BFS is permissible (In Kgs)	Weight of Jacket with side plates when 25 mm BFS is permissible (In Kgs)	Weight of Jacket with side plates when 44 mm BFS is permissible (In Kgs)
1	Standard	7.1	6.2	8.9	8.0
2	Large	7.5	6.6	9.4	8.5
3	Extra Large	7.8	6.9	9.8	9.0

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- F. **Size of One Standard Hard Armour Panel** –305mm X 254mm (0.0735 sqm)
 Drawing along with all dimensions is given below: -

Negative tolerance in dimensions of HAP is not permissible.



- G. Shall consist of an outer carrier, removable Soft Armour Panels (SAP) of suitable material and Two Hard Armour panel (HAP) made of High Performance Polyethylene Plates/Aramid Fibre/Composite material or any other superior quality material.

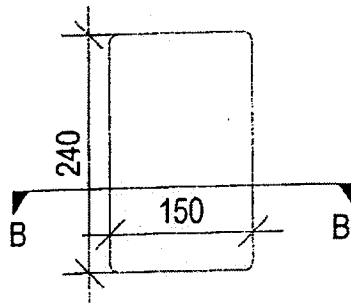
Note: - For 360° Protection, two additional side HAP if required by any user, the total area and weight of Jacket will increase as per below mentioned details:-

(Table No. 3)

Components	Min side HAP size (in cm ²) (24 cm x 15 cm)	Weight (in kg)
STANDARD SIZE	359 x 2 = 718	.9 x 2 = 1.8

The threat level of side HAP shall be the same as front and rear HAP. The side HAP shall also be in conjunction with SAP as same is with rear and front HAP. The sizes of all HAP (front, rear and sides) shall be as per the drawings. Negative tolerance in dimensions of HAP is not permissible

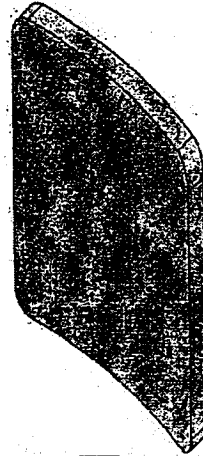
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ELEVATION



R400
SECTION AT A-A



Surface Area-359 cm²
All Dimensions are in mm

(Table No. 4)

HAP	Surface Area of each HAP (In M ²)			Max Weight of HAP (In Kgs)		
	Standard	Large	Extra Large	Standard	Large	Extra Large
Front / Back	0.0735	0.0772	0.0810	1.90	2.00	2.1
Side Plate	0.0359	0.0377	0.0396	0.90	0.97	1.02

Size, Area and weight of different sizes of BR Jacket

(Table No. 5)

S No.	Components	Chest Size (in-inch)	Min SAP Area (Sqm)	Min HAP Area (Sqm) with 360° Protection	Min HAP Area (Sqm) without 360° Protection	Weight (In Kgs) without side plates When 25 min BFS is permissible	Weight (In Kgs) without side plates When 44 mm BFS is permissible
a)	Standard size Jacket	38-40	0.5500	0.0735 + 0.0359 = 0.1094 x 2 = 0.2188	0.0735 x 2 = 0.1470	7.1	6.2
b)	Large size Jacket	40-42	0.6000	0.0772 + 0.0377 = 0.1149 x 2 = 0.2298	0.0772 x 2 = 0.1544	7.5	6.6
c)	Extra large size Jacket	42-44	0.6500	0.0810 + 0.0396 = 0.1206 x 2 = 0.2412	0.0810 x 2 = 0.1620	7.8	6.9

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 for Agri...
 Amish...
 H.S. Neeraj...
 A. M. R.

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Note: - The dimensions of standard size HAP (Front, Back and Side Plates) is specified above. The length and width of the HAP (Front, Back and Side Plates) for large and extra-large size to be increased as per the proportion increase in Area of these sizes.

H. BR JACKET – CONSTRUCTION

- (i) BR Jackets (Without HAP) shall be in the form of jacket to provide protection against 9mm bullet (Threat level IIIA of NIJ). It should not restrict overall movement of the neck of wearer.
- (ii) It should have provision to accommodate two HAP plates in front and back and for 360 degree protection provision for accommodate two additional side plates, as per dimensions specified in tender documents. Shall be lightweight and comfortable providing optimum mobility.
- (iii) Adjustable at the shoulders, waist, and groin with appropriate fasteners (HOOK and LOOP Fastener's). An adjustable nylon belt of minimum 10 cm width should be provided with double locking of jacket with HOOK and LOOP Fastener.
- (iv) The vendor has to declare the type of materials, number of layers, and their aerial density in technical bid of tender and they have to maintain the same in bulk supply.
- (v) User must ask the supplier to provide "Raw Material Assurance Certificate" in support of their SAP and HAP designs.
- (vi) Supplier must provide Certificate from the original anti-ballistic material supplier, confirming that the required volume of material/grade is purchased for the commercial supply of BR Jacket and same is being used during bulk supply of BR Jacket. For that purpose, user should provide few samples out of bulk supplied of BR Jacket to the original anti-ballistic material supplier.
- (vii) SAP should be encased in some materials so as to make it water proof.
- (viii) HOOK and LOOP FASTENERS (Velcro Fasteners)
All the clothing flaps of the jackets should have high quality HOOK and LOOP Fastener, so that it can be worn and taken off easily/quickly. The quality and report of HOOK and LOOP Fastener including shears strength and peel strength should be as per Bureau of Indian Standards specification IS: 8156-2014. The IS: 8156-2014 may be available in the office of Bureau of Indian Standards. Vendors will submit test reports on HOOK and LOOP Fastener from any NABL accredited lab or DMSRD (MoD), Kanpur.

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(ix) **POCKET WITH FLAPS**

The jacket should be provided with two external pockets in outer carrier to house two magazines of 5.56mm LMG in each pocket. Two pockets should also be provided to accommodate one Grenade (HE 36) in each pocket. The size of each magazine is 19 cm X 7.6cm X 3.5cm and size of HE 36 Grenade is 110 mm X 65 mm.

(x) **BELT/KAMARBANDH**

An additional belt of nylon/polyester weaving with minimum width of 10 cm should be provided around the waist to properly secure the B.R. 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 HOOK and LOOP Fastener.

(xi) Two pouches (one each on front and rear of outer carrier) should be provided to accommodate two Hard Armour Plates as per sizes specified by the user. For 360 degree protection jacket, two additional pouches to be provided to accommodate the two side plates of HAP as per sizes specified by the user.

(xii) Ballistic panels (SAPs & HAPs) shall be removable from outer carrier.

(xiii) Outer carrier shall be machine washable.

(xiv) **TRAUMA PAD FOR TRAUMA ATTENUATION**

- (a) Trauma pad must be provided behind the SAPs, so that it remains to body surface to provide proper cushioning.
- (b) It must cover uniformly up to edge level of the SAPs.
- (c) Back face Signature (BFS) in Plasticine block should not exceed as specified by the user.
- (d) Drop test will be carried out as per Trial Directive.

Note: However, the design of carrier of HAP/SAP is left with the user. The user organizations may select any suitable design for the carrier/harness as per their functional requirements.

I. **MATERIALS**

- (i) The outer carrier shall be made of high tenacity, heavy duty, Abrasion Proof and 100% vest integrity fabric having in-built water resistant and fire retardant properties.
- (ii) The fabric shall be treated for protection against water, fire (fire retardant) and ultra violet rays' exposure.
- (iii) The fabric must be suitable to wear in the Indian conditions of heat, rain, and humidity. It must be light, breathable, soft and pliable.
- (iv) The inner side (body side) shall also be of a similar fabric and shall be treated for moisture and water repellency.
- (v) The cloth of the carrier must be pre-shrunk before stitching.

(vi) BR Jackets should be UV Proof.

Note:-The methods of testing criteria for measuring the properties of outer carrier shall be as per IS: 11871-1986, IS: 14887: 2014 (Annex C, After UV exposure of 192 hrs the strength retention shall be min 85 per cent) IS: 392-1989 and IS 391 – 1975.

- Duration of flame after removal of burner-maximum 5 second (Test Method IS 11871).
- Duration of flame afterglow-maximum 5 second (Test method IS-11871).
- Hydrostatic Head-Minimum 100 cms of water for 24 hrs (Test Method IS 391-1975).
- Water penetration should be zero (Test Method IS 392-1989).

Note : Vendor should supply 3 meters of each fabrics used both at the time of tender and from actual production for testing.

The test specified will be conducted at a Government Institute, having required technical expertise. The Institute will be selected by Technical Evaluation Committee in consultation with experts. All tests will be in accordance with SOP. Any changes in the SOP will be decided by Technical Evaluation Committee.

J. VEST FIT:

- (i) The overall length of the BR Jacket shall be such that there is no "ride up" while sitting.
- (ii) The overlapping degree of front and rear panels shall be such as to provide for maximum freedom of movement.

K. COLOUR: CAMOFLAGE. The bidders will submit samples of BR Jackets of any camouflage colour. However, before placement of bulk supply order, exact camouflage colour along with modifications required, if any, in outer carrier will be intimated by the users.

L. LABELLING: The outer carrier and the two Soft Armour Panels must be labeled as giving in below:-

- Name, logo or other identification of the Manufacturer : XYZ
- Name of the Product : aabb
- Date of Manufacturing : dd:mm:yyyy
- Date of Receipt : (to be filled by user)
- Size :

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Identification number
Reference
date

: ABCD-----
: Tender No. with

Note :

- *Strike face of Jacket should be clearly marked*
- *In case of non-conformity with any of the parameters of the tests mentioned above, the next sequence of test will not be conducted.*

M. SOFT ARMOUR PANEL (SAP)

- (i) SAP shall be able to withstand NIJ threat level III A in respect of the caliber & the weapon selected for trial and other parameters such as weight & velocity of the bullet in ammunition selected for trials.
- (ii) Shall protect both front and back torsos.
- (iii) Shall be made of suitable material.
- (iv) The weight of the material shall be so balanced as to make the SAP lightweight, breathable, soft and pliable.
- (v) The aerial density of the panels shall be such as to provide the rated ballistic and trauma protection.
- (vi) No tears, rips, worn spots, discolorations, loose or torn stitching and set wrinkles on the SAP shall be allowed.
- (vii) The panel shall be treated with approved and durable water repellent.
- (viii) The SAP shall be removable from outer carrier to allow for periodic cleaning.
- (ix) The SAP shall be placed in tightly sealed with some material so as to make it completely water repellent and waterproof.
 - a. Hydrostatic Head-Minimum 100cms of water (Test Method IS 391-1975).
 - b. Water penetration should be zero (Test Method IS 392-1989).
- (x) The material layers shall be stitched in a suitable pattern in case SAP is made of aramid. The design given with this specification is for illustrative purpose only.

Note: Vendor must declare number of layers and type of material (aerial density of material) used for fabricating Soft Armour Panel and Hard Armor Panel as per original manufacturer of the material. Raw Material Assurance Certificate (RMAC) must be given from original manufacturer in respect of material for SAP and HAP, valid for a period of six months from the closing date of tender. The vendor has to make bulk supply as per the above declaration.

A. S. S. 15/11/2015

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N. HARD ARMOUR PLATE (HAP)

- (i) Shall be made of High Performance Polyethylene/Aramid fiber/Composite or any other superior material.
- (ii) Shall provide protection against ammunition mentioned above at Para A from a distance of 10 meters in conjunction with Soft Armour Panel.
- (iii) Each HAP plate (Front and back) should not weigh more than as specified in Table No. 4.
- (iv) In case of 360° protection Each side plate of HAP should not weigh more than as specified in Table No. 4.
- (v) Each standard HAP plate (Front and back) shall be of minimum size 305mm x 254mm to cover the vital parts of the body.
- (vi) Curvature of the HAP shall be suitable to fit the body contour.
- (vii) HAP shall be shielded with some material so as to make it completely water repellent and waterproof.

O. OTHER STIPULATIONS

JACKET STYLE	:	POLICE
SERVICEABILITY:		05 YEARS (HAP, SAP & trauma pad)
GUARANTEE	:	The Outer Carrier along with trauma padding shall be guaranteed for a period of 2 years against all manufacturing defects.
HUMIDITY	:	95% at 40°C
STORAGE	:	Normal Room Temp.

Note: -All testing will be carried out as per Trial Directive.

P. IMMUNITY LEVEL:

- (i) Hard Armour Plates: The HAPs are to be tested in conjunction with SAPs.
 - Six bullets NATO ball fired from 7.62 mm SLR/bolt action rifle from a distance of 10 meters at normal to the surface on each plate (Front and Rear).
 - 03 bullets NATO ball fired from 7.62 mm SLR/bolt action rifle from a distance of 10 meters at normal to the surface on each side plate.
 - Six bullets (mild steel core) fired from 7.62 mm of AK rifle from a distance of 10 Mts. at normal to the surface on each plate (Front and rear).
 - 03 bullets (mild steel core) fired from 7.62 mm of AK rifle from a distance of 10 Mts. at normal to the surface on each side plate.

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- Six Bullets (hard steel core bullet) fired from 7.62 mm of AK rifles from a distance of 10 meters at normal to the surface on each plate (Front and rear).
- 03 Bullets (hard steel core bullet) fired from 7.62 mm of AK rifles from a distance of 10 meters at normal to the surface on each side plate.
- Six Bullets (hard steel core bullet) fired from 5.56 x 45mm Ball MK M (Equivalent to 5.56 mm NATO (M 193)) fired from 5.56 mm INSAS rifles from a distance of 10 meters at normal to the surface on each plate (Front and rear).
- 03 Bullets (hard steel core bullet) fired from 5.56 x 45mm Ball MK M (Equivalent to 5.56 mm NATO (M 193)) fired from 5.56 mm INSAS rifles from a distance of 10 meters at normal to the surface on each side plate.

(ii) Soft Armour Panels:

As described in table below, six shots (4 + 2 (1 each from 30° and 45° angle)) 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 ±15 m/s and the weight of the bullet 7.4 gm to 8.2 gm as specified in standard.

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

(Table No. 6)

Armour Type	Test Bullet	Bullet weight	Reference Velocity	Hits per Armor part at 0° angle of incidence	BFS* Depth Maximum (As specified by user)	Shots per Panel (front and rear)	Shots per Panel (side Plate)
III A	9mm FMJ RN	7.4 gm to 8.2gm	430 ± 15 m/s	4+ (2 at 30° and 45° angle)	25 mm Or 44 mm	6	-
III	7.62mm NATO FMJ	9.4gm to 9.6 gm	838m/s ± 15 m/s	6	25 mm Or 44 mm	6	3
	7.62mm mild steel core	7.45gm to 8.05 gm	715 m/s ± 15 m/s	6	25 mm Or 44 mm	6	3

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III ⁺	7.62 x 39mm (hard steel core bullet)	7.45 gm to 8.05 gm	635 ± 15m/s	6	25 mm Or 44 mm	6	3
	5.56 x 45mm Ball MK M (Equivalent to 5.56 mm NATO (M1 93))	3.5 gm to 4.0 gm	890 ± 15m/s	6	25 mm Or 44 mm	6	3

Note: -

- a) BFS – Back Face Signature on Plasticine.
- b) 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.
- c) All tests will be in accordance with the Trial directives. Any changes in the Trial directives will be decided by Technical Evaluation Committee.

Q. Testing Criteria

- a) Scientific inspections/ballistic trial of these BR jackets will be conducted as per Trial Directive “Ballistic Resistance of Body Armor”
- b) Groin Pad will be tested Ballistically with 9mm SMC/MP 5. Three evenly spaced fair hits at zero degree angle incidences shall be taken and BFS should not exceed the limit as specified by the user. BFS will be measured for first shot only.

R. Miscellaneous

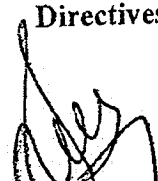
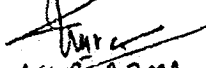
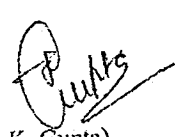
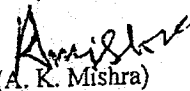
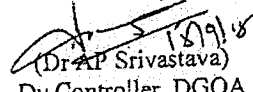
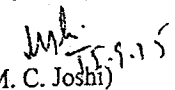
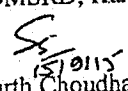
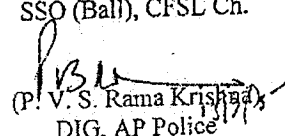
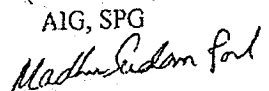
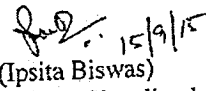
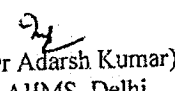
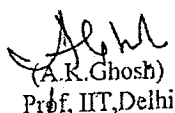
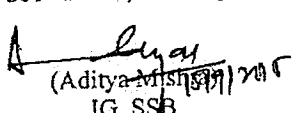
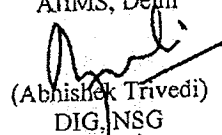
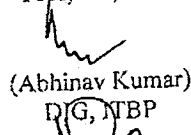
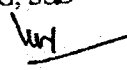
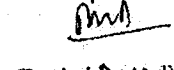
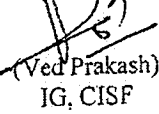
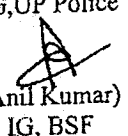
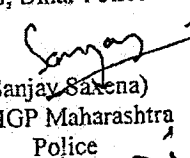
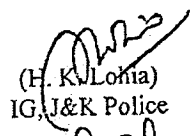
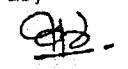
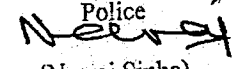

- a) The supplier/manufacturer shall provide complete 14 BR Jackets. Out of which, 12 complete BR Jackets of particular size and two (one each) complete BR Jackets rest of two sizes.
- b) While submitting the samples for tender, the supplier shall mention the exact area of SAP and HAP and give the template of the jackets as per the area, so that import of raw materials of the BR Jackets will be allowed accordingly.
- c) Each model/brand of BR Jackets should be submitted against a separate tender form.

S. Testing facilities

Ballistic trials as per the QRs will be held at CFSL and TBRL, Chandigarh or any other facility as decided by Technical Evaluation Committee.

Note:-

- The QRs are dynamic/live and may be amended only on the approval of competent authority.
- The QRs have been drawn jointly with the association of CAPFs, State Police Forces, DRDO (TBRL, DIPAS, DMSRDE Kanpur), CFSL Chandigarh, AIIMS Delhi, IIT Delhi, BIS and DGQA.
- The level of protection is limited to the ammunitions mentioned in QRs.
- All testing shall be carried out as per the protocols of Trial Directives.

 (S.K. Thakur) DC, LO, Assam Rifles	 SANJAY SHARMA PSO (wfm) BPR&D	 (J. K. Gupta) Sc'C, BIS, Delhi
 (A. K. Mishra) Sc'D' DMSRD, Kanpur	 (Dr. AP Srivastava) Dy Controller, DGQA	 (M. C. Joshi) AIG, SPG
 (Siddharth Choudhary) AIG, MP Police	 (P. V. S. Rama Krishna) DIG, AP Police	 (Dr M. S. Pal) Sc'E' DIPAS, Delhi
 (Ipsita Biswas) Sc'F' TBRL, Chandigarh	 (Dr Adarsh Kumar) AIIMS, Delhi	 (A.K. Ghosh) Prof, IIT, Delhi
 (Aditya Mishra) IG, SSB	 (Abhishek Trivedi) DIG, NSG	 (Abhinav Kumar) DIG, NBP
 (H. R. Sharma) IG, UP Police	 (Pankaj Dey) IG, Bihar Police	 (Ved Prakash) IG, CISF
 (Anil Kumar) IG, BSF	 (Sanjay Saxena) Spl IGP Maharashtra Police	 (H. K. Lohia) IG, J&K Police
 (Anand Prakash) IG (Mod), BPR&D (CHARMAN)	 (Neeraj Sinha) ADG, Jharkhand Police	 (R. K. Mishra) IG, CRPF

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Tender Specification- Anti Ballistic Goggles

- It should provide good visibility.
- It should be designed to fit comfortably to a full range of face types.
- Material used for lens should have good optical clarity and good fit of protective eyewear.
- Anatomically optimized design for seamless helmet integration and face fit.
- Must have a powerful impact protection
- Must have a broad field of vision
- Must have anti-fog capabilities
- Must be 100% UVA and UVB protection from Particles and dust filtration
- Must be comfortable with anatomical fit.
- Belt mounted loop style pouch to be provided with the goggles.
- A total of 3 lenses must be provided – clear + dark+ yellow for low light conditions.
- Must be a helmet compatible design.
- Weight of goggle with 1 lens should not be more than 127 grams.
- Weight of additional lens should not be more than 36 grams per lens.
- Total weight of the kit should not be more than 300 grams.
- Must have extra thick interchangeable lenses with 100% UVA/UVB protection that should resist 12- gauge shotgun firing from 10-13 meter without any penetration.
- Superior ballistic impact protection as per ANSI Z87.1+2003 and ANSI Z87.1 2015 & CE, EN166 standard Certified from U.S. Military spec- MIL-DTL-43511D, MIL PRF 32432 & STANAG 2920.
- The certifications from International or National Labs are acceptable. No cap on the freshness of the certificate. Authenticity of the certificate may be checked by the user if desired.

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Tender Specs – Picatinny Tri-Rail Forehand Guard for MP-5

- (a) Must be a one-piece design quick fit metal tri-rail hand-guard system for MP5.
- (b) Must adopt original hand-guard dimensions and locking system for the secure fit.
- (c) No gun-smithing must be required for installation.
- (d) **Technical Specifications.**
 - (i) Material: Aluminum
 - (ii) Weight: Not more than 250 gms
 - (iii) One Piece with 3 Rails – At Bottom and Both Sides
 - (iv) Rail Type: Picatinny/Weaver
 - (v) No. of Rails: Minimum 3
 - (vi) Length: 5.7 inch \pm 0.1 inch.
 - (vii) Width: 2.1 inch \pm 0.1 inch.
 - (viii) Height: 1.8 inch \pm 0.1 inch.

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GSQRs – Visual / IR Laser Aiming Device with Tac White Light (UBTL) –

S No.	Parameter	Requirement												
1	Material	6061 – T6 Aluminium Alloy with Fibre Reinforced Nylon												
2	Finishing	Anodized												
3	Laser Wavelength /Colour	More than 530nm / Green												
4	Diameter of Laser spot	Less than 17mm@ 10 m												
5	Laser Output Power	Below 5.5mw												
6	Working Temp	-19 +50 Degree Celcius												
7	IR Laser	The device should have zeroable IR laser sight in the device.												
8	Output LED Source	Minimum 2.8W or minimum 108Lm												
9	Dia of LED Spot	101-109cm @ 10 meters												
10	Operating Life	Minimum 40000 Hours												
11	Battery Type	CR 123A – 3.0V 2 pcs 1300 mah or CR 123A – 3.7V 2 pcs 700mah												
12	Size	Maximum L-95*H-45*W-55 (mm)												
13	Net Weight	Maximum 170 grams (without battery)												
15	Colour	Non Shiny Black												
16	Ambidextrous	Yes, the device should be ambidextrous.												
17	Modes	There should be minimum 4 operational modes.												
18	Pressure Pad	The device should be compatible to pressure pad or inbuilt switches for operation.												
19	Pica Rail Mount	Yes, it must be provided.												
20	Tools for fitment	No particular tools to be required other than easily available options during an operation & a hex key for zeroing.												
21	Runtime	<table border="1"> <thead> <tr> <th></th> <th>Laser</th> <th>LED</th> <th>Combo</th> </tr> </thead> <tbody> <tr> <td>Green Laser</td> <td>26 hrs</td> <td>2.1 hrs</td> <td>1.9 hrs</td> </tr> <tr> <td>IR Laser</td> <td>35 hrs</td> <td>2.1hrs</td> <td>2 hrs</td> </tr> </tbody> </table>		Laser	LED	Combo	Green Laser	26 hrs	2.1 hrs	1.9 hrs	IR Laser	35 hrs	2.1hrs	2 hrs
	Laser	LED	Combo											
Green Laser	26 hrs	2.1 hrs	1.9 hrs											
IR Laser	35 hrs	2.1hrs	2 hrs											

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1101

Tender Specifications – Modular Vertical Foregrip with Green Laser, White Tac Light and Map Reading LED for Rifles

1. Tactical Vertical Foregrip should offer Green Laser Sight, White Tac Light and Map Reading LED for Rifles.
2. Selector dial should offer any of the 3 lights or laser and head light together.
3. Pressure trigger switch should be there for easy on / off.
4. Flashlight Output: Minimum 450 lumens LED white light
5. Battery: Three (3) pcs CR123A 3V batteries.
6. Measures approx. not be more than 10" x 3" x 8".
7. Weight should not be more than 800 grams without batteries.
8. Must come with 2 thumb tightening screws for fitment on the Picatinny rail.
9. Must be black in colour.
10. Must be in-service with at least 1 armed force in India.

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Qualitative Requirements– Tactical Observation Camera–

- It must be strong, lightweight and should have an ergonomic pistol grip design.
- The camera's probe length must be approx 1 meter as standard length.
- The total weight of the device should not be more than 780 grams (+10%) without batteries.
- The articulating camera probe must have white LED illumination (6 lamps, illumination should be adjustable in multiple levels by pressing the trigger switch built in the pistol grip). Power button must be on top of the pistol grip. Camera's diameter should be between 3mm - 5.8mm.
- The probe's connector must have an extended metal piece for ease in connecting with the main unit in dark.
- The focus distance should be between 30mm – 80mm.
- It must have video recording & photography modes with checking & deletion facility.
- Photo format should be : JPG/VMP/JPEG
- Video format should be AVI format
- Input voltage should be 110-240V
- Output voltage should be 5V – 2A
- Working voltage should be minimum 5V
- The screen should be detachable and viewable remotely minimum 7 feet away.
- Screen should run on built-in 3.7V Li Battery 1200mAH
- The signal transmission should be minimum 2.4 G Wireless Video Transmission
- Screen size should be minimum 2 to maximum 4.5 Inch TFT LCD.
- Screen must have a start up with brand's name. Resolution of the screen must be 320x240 with at least 16.7M colours
- Must have minimum 3x zoom and image rotation.
- Memory card capacity should be minimum 32 GB SD/TF Card
- The tactical observation Camera must have CMOS Image Sensor.
- Effective Pixels – Must be minimum 320(H)x240(v)(NTSC) ; 720 (H) x 625 (V)(P)/ 720 (H) x 525(V)(N); 720(h)x 576(v)(P)/ 712 (H)x480(V)(N)
- Hand held control unit must be bright in colour with a glow in dark band in the pistolgrip.
- The equipment should be made in India with proof as NSIC certificate of the manufacturer.
- Handheld unit & monitormust have separate power activation.
- Handle unit must run on not more than 6 x AA batteries
- The device should come in a transportable case with foam support for shock absorption.

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Tender Specs – Spreader & Cutter Battery operated

- Ready for use weight not more than 14.5 kgs
- Spreading distance not less than 275 mm
- Spreading force not less than 420 kN
- Spreading distance to be not less than 267mm.
- Max cutting opening to be minimum 190mm.
- Cutting force not less than 200 kN
- Squeezing force not more than 47kN.
- Colour – Black or Desert Tan.
- Must have a handle to hold the equipment while use.
- Must have a built in low power minimum 3 white LED light for illuminating the fore end of the equipment.
- Must have a detachable battery pack.
- Must have a visual 4 LED indication of device's activation by click on/off switch.
- Battery must fully recharge within 2 hours.
- Weight must not be more than 13.8 Kgs
- Battery must have indication for showing the charge's level.
- Must have left/right rotating handle with clear indication of open and close that should activate the spreading and cutting functions.
- Sound levels should be not more than 80 db.
- Size should not be more than L- 699mm x W-299 mm x H-209 mm
- Round bar should not be more than 26mm.
- Working pressure to be not less than 711 bar.
- Battery should not weight more than 950 grams.
- Temp Range - -20 Deg to 55 Deg C

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Technical Specs - Spreader & Cutter Manually Operated

- Weight should not be more than 8.8 kgs
- Spreading distance not be less than 275 mm
- Spreading force not be less than 430 kN
- Cutting force not be less than 200 kN
- Max working pressure not less than 700 bar.
- Minimum spreading distance not less than 275mm.
- Should have a 360 Degree rotatable folding holding handle
- 360 Degree rotatable Collapsing hand pump/lever for easy placement in the rucksack.
- Must have swivel with minimum 10 locking positions.
- Round Bar to be not more than 25.
- Must have quiet operation, no motor noise or sound while cutting or spreading..
- Max Squeezing Force not more than 45 kN
- Weight to be not more than 8.8 Kgs
- Must have friction selection ring for spreading and cutting.
- Operational Temp - -15 Degree C to +50 Deg C
- Size – Not more than L-580mm x W-240mm x H- 153mm.

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TRIAL DIRECTIVES OF BOMB INHIBITOR

Ser No	<u>Qualitative Requirements</u>
1.	Construction of Bomb inhibitor could be either single piece or modular type of assembling.
2.	Should be portable by maximum two men and easy to install.
3.	Should have strong and comfortable handles for lifting.
4.	Should be able to reduce blast damage up to 80% minimum.
5.	Should be able to reduce fragmentation damage up to 80% minimum.
6.	Capable of eliminating fire risk up to 80% minimum.
7.	Able to contain blast effect of minimum 1.5 Kgs of explosive (RDX/TNT)
8.	Able to retain shrapnel's for investigation.
9.	Able to retain forensic evidence.
10.	Permit taking X-Ray of device even through the inhibitor.
11.	Permit-effective firing of disrupter through the inhibitor.
12.	Should allow snifter dogs to sniff.
13.	Firm should be able to provide 02 x items for trails.

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SPECIFICATION OF HOOK AND LINE SET

1. The hook and line set should comprise of the following items and their quantities as given below:-

Sr.No.	Parameters	Qty
1.	Real assembly 300 mm dia with handle and should hold the line provided with kit.	02 nos.
2.	Line 5.5 mm dia length 120 m.	02 nos.
3.	Pulling handle.	02 nos.
4.	Hooks:-	02 nos.
	(a) Single plain 12 mm	02 nos.
	(b) Single plain 25 mm	02 nos.
	(c) Single plain 50 mm	02 nos.
	(d) Double plain 25 mm	02 nos.
	(e) Double plain 50 mm	02 nos.
	(f) Single barbed 25 mm	02 nos.
	(g) Single barbed 50 mm.	02 nos.
	(h) Single barbed 12 mm.	02 nos.
	(i) Double barbed 25 mm	02 nos.
	(j) Double barbed 50 mm	02 nos.
	(k) Spring gate hook	01 nos.
	(l) Self locking hook.	01 nos.
5.	Rod Extension 3 m	01 nos.
6.	Belt sling	01 nos.
	(a) 7.5 cm	01 nos.
	(b) 10 cm	04 nos.
7.	Snatch block self opening	----
8.	Karabiners	02 nos.
	(a) 12 mm	02 nos.
	(b) 18 mm	02 nos.
	(c) 25 mm	02 nos.
9.	Pitons	06 nos.
	(a) 50 mm	06 nos.
	(b) 100 mm	10 nos.
10.	Self adhesive anchor	Single-02 nos.
11.	Suction pad single and double	Double- 01nos.
12.	Telescopic pole with self locking hook	01 nos.
13.	Grips	01 nos.
	(a) Spring – Max opening of 25 mm	01 nos.
	(b) vice	01 nos.

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14.	Door stopper(Rubber)	04 nos.
15.	Through wall anchor with ring	01 nos.
16.	Rope sling	
	(a) 3 mm diameter and 2 m long	02 nos. (min)
	(b) 5 mm diameter and 2 m long	02 nos. (min)
17.	Wedge with eye	02 nos.
18.	Screw with eye	10 nos.
19.	Wire sling- 1.5 mm-3 mm diameter and 2 m long	04 nos.
20.	Pocket tool kit	02 nos.
21.	Door way anchor min 700-1100 mm with eyes	02 nos.
22.	D Shackle at least 13 mm gate and 1000 kgs load	02 nos.
23.	Standard snatch block	02 nos.
24.	Ground Anchor	06 nos.
25.	Webbing sling- 50 mm width and (1m-2m) length	02 Nos.(min)
26.	Round sling	
	(a) 1 m length	02 nos.
	(b) 3 m length	02 nos.
	(c) 5 m length	02 nos.
27.	Snatch block heavy duty with swivel	04 nos.
28.	Splitter ball	02 nos.
29.	Snatch block one way lock	01 nos.
30.	Fish hook	02 nos.
31.	Hook 120 mm opening fixed eye	02 nos.
32.	Remote window breaker	01 nos.
33.	Seizer lock jaw 85 mm length 175 mm.	01 nos.
33.	Tripod lifting capacity minimum 250 kgs & minimum 2 mtr lifting range.	01 nos.

2. The items should come complete in a rugged carrying case fitted with rubberized foam.

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TECHNICAL SPECIFICATION FOR THERMAL CUTTER

Introduction :- Thermal cutter is a BD Eqpt used by Bomb technicians to gain access to inside of a soft skin IED by making triangular holes, without disturbing the IED.

Srl No.	Technical Specification
1.	The equipment should achieve its peak temperature of minimum 250 degree C in less than 06 minutes.
2.	The equipment should have a heating element head in the shape of equilateral triangle.
3.	Size of the triangle head: 5" + 1/2".
4.	The cutting edges of the triangular head should be the thin, sharp and rigid.
5.	It should be able to cut the plastic materials of thickness minimum 05 mm.
6.	The triangular head should be attached with the stand with the help of a rod of maximum length 50 cms, adjustable as per requirements.
7.	The rod should be attached with the stand with the help of a hinge which can be rotated in 360 degrees. The base of the stand can be placed on uneven ground and should hold the complete equipment stable.
8.	Total weight of the equipment (excluding accessories) should not exceed 6 Kgs.
9.	It should be able to operate on 220volts AC. The length of the cable for main supply should be minimum 20 meters with an additional 300 meters cable, with an attachment arrangement.
10.	All metal parts should be rust proof and rugged for repeated use, all electrical components should comply to ISI/BIS standard.
11.	The carrying case should be light weight, water resistant, scratch proof, rugged and wheeled for storage and transportation.

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Specification of explosive detection kit

Physical Requirement

- 1) Minimum maintenance.
- 2) Should be easily carried.
- 3) Should be operative in all weather conditions.
- 4) Should be easy to use.
- 5) It should contain various types of chemicals in suitable container/bottle with suitable material for collection of sample for various groups of explosives.
- 6) Should have colour code display card.
- 7) Should not pose any risk for technician and the environment.
- 8) Should have fast reaction and quick result facility.

Technical Requirements

- 9) Should be capable to detect all type of explosives of various groups, before and after explosion.
- 10) Should be able to detect inorganic nitrates.
- 11) Should be able to detect the nuclear residue/materials.
- 12) It should have operating temp of -10 to +50 degree Celsius.
- 13) It should have power source with rechargeable battery/long duration battery.

Spares

- 14) The manufactures should provide spares as follows :-
 - a) Electronic components - 03 years spares.
 - b) Non electronic components - 05 years spares.

Training

- 15) Manufactures should provide training on use of equipment for a specified period.

Repairs

- 16) Should provide repair backup directly or through a subsidiary.
- 17) Should provide AMC directly or through a subsidiary after expiry of warranty period.

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