

TENDER SPECIFICATION OF FLAK JACKET (NIJ LEVEL IIIA)

1. **Name of the Item.** Flak Jacket (NIJ Level IIIA) (Digital Combat Color).
2. **Purpose.** The main purpose of the Flak Jacket is to provide protection and safety of the wearer from various harms and injuries caused by munitions/ fragments from exploded munitions and different weapons (According to NIJ level IIIA).
3. **Quantity.** : 500 in no (Large: 100 in no, Medium: 300 in no and Small: 100 in no).
4. **Year of Manufacture.** 2024 or later.
5. **Brand/Model.** To be mentioned.
6. **Name of Manufacturer.** Name and full address is to be mentioned.
7. **Country of Origin.** Australia, Canada, South Korea, Japan, Singapore, Greece, Turkiye, Norway USA, UK, France, Germany, Spain, Sweden, Netherlands, Italy, Denmark, Brazil, Switzerland, Singapore and South Africa.
8. **Manufacturing Country.** Australia, Canada, South Korea, Japan, Singapore, Greece, Turkiye, Norway USA, UK, France, Germany, Spain, Sweden, Netherlands, Italy, Denmark, Brazil, Switzerland, Singapore and South Africa.
9. **Local Agent.** Name and Full address of the local agent to be mentioned.
10. **Qualification of Bidder.** Only the enlisted supplier of DGDP can submit quotation from the genuine manufacturer or their authorized dealer(s). Manufacturer's authorization Certificate is to be submitted with the offer. In case of dealer, manufacturer has to authorize the dealer and dealer has to authorize the supplier. In this regard both authorization certificates is to be submitted with the offer.
11. **Description.** The Flak Jacket must fulfill the requirement of National Institute of Justice (NIJ) Standard. The ballistic material is polyethylene (Dyneema) or Aramid (Twaron/ Kevlar), which offers protection of NIJ IIIA. All portions of the jacket without the Armour panel must qualify minimum NIJ protection level IIIA. The outer cover of the jacket should be Digital Combat cloth and should be removable for washing /cleaning.
12. **Characteristics.** Flak Jacket should meet the following requirements:
 - a. Blast protected.
 - b. Multi-hit capability.
 - c. Capable to protect front, back & shoulder side.
 - d. Removable soft armour panels (SAP) for washing & dry cleaning.
 - e. Should have water proof ballistic panels and covers.
 - f. Full freedom of movement.
 - g. Utility pocket.
 - h. Lightest possible version.
 - j. Male version.
 - k. Groin area protection capacity.
 - l. Detachable and foldable groin, neck & collars.



13. **Detail Specification of Soft Armour Panel.** Soft armour panels should be waterproof and also UV resistant shape, size and dimensions of various armour panels are appended below:

- a. **Material.** Soft armour panel to be made of polyethylene (Dyneema) or Aramid (Twaron/ Kevlar).
- b. **Number of layer.**
- (1) Kevlar : 26 layers or more.
 (2) Dyneema : 35 layers or more.
- c. **Protection Level.** Should provide NIJ protection level IIIA.
- d. **Collar.**
- (1) **Height:**
- (a) Large Size : Max 8-11 cm, Min 6-8 cm
 (b) Medium Size : Max 8-11 cm, Min 6-8 cm
 (c) Small Size : Max 8-11 cm, Min 6-8 cm
- (2) **Length:**
- (a) Large Size : 30-35 cm
 (b) Medium Size : 30-35 cm
 (c) Small Size : 30-35 cm
- (3) **Shape:** As per BN sample.
- e. **Shoulder.**
- (1) **Length:**
- (a) Large Size : 18-22 cm
 (b) Medium Size : 18-22 cm
 (c) Small Size : 18-22 cm
- (2) **Width:**
- (a) Large Size : 8-11 cm
 (b) Medium Size : 8-11 cm
 (c) Small Size : 8-11 cm
- (3) **Shape:** As per BN sample.
- f. **Groin Guard.**
- (1) Height (Large, Medium & Small) : 28-32 cm
 (2) Width (Large, Medium & Small) : Max 25-28cm, Min 20-25 cm
 (3) Shape : As per BN sample (Parabolic Shape 12.5 cm radius).
- g. **Front Panel.**
- (1) **Height:**
- (a) Large Size : Max 48-52 cm, Min 38-40 cm
 (b) Medium Size : Max 46-48 cm, Min 36-40 cm
 (c) Small Size : Max 42-46 cm, Min 33-36 cm



(2) **Width:**

- (a) Large Size : Max 59-62 cm, Min 57-60 cm
 (b) Medium Size : Max 55-58 cm, Min 53-56 cm
 (c) Small Size : Max 48-53 cm, Min 48-52 cm

(3) **Size of Chest:**

- (a) Large Size : 31-34 cm
 (b) Medium Size : 28-30 cm
 (c) Small Size : 28-30 cm

(4) **Height of side:**

- (a) Large Size : 23-25 cm
 (b) Medium Size : 20-23 cm
 (c) Small Size : 18-20 cm

(5) **Shape:** As per BN sample.

(6) **Location:** The soft armour panel should be 2.54 cm (1 inch) below from the stitching of the jacket neck.

h. **Back Panel.**(1) **Height:**

- (a) Large Size : Max 48-52 cm, Min 47-50 cm
 (b) Medium Size : Max 46-48 cm, Min 45-47 cm
 (c) Small Size : Max 42-46 cm, Min 44-46 cm

(2) **Width:**

- (a) Large Size : Max 47-51 cm, Min 46-49 cm
 (b) Medium Size : Max 47-51 cm, Min 46-49 cm
 (c) Small Size : Max 47-51 cm, Min 46-49 cm

(3) **Size of Chest (Back side):**

- (a) Large Size : 34-36 cm
 (b) Medium Size : 34-36 cm
 (c) Small Size : 34-36 cm

(4) **Height of side:**

- (a) Large Size : 23-25 cm
 (b) Medium Size : 20-23 cm
 (c) Small Size : 18-20 cm

(5) **Shape:** As per BN sample.

J. **Overall Shape and Color.** As per BN sample (Digital Combat Color).



14. **Technical specification of the Outer Cover of Jacket.** Outer cover of the jacket should contain all soft armour panels. Detail size, shape, dimensions and other information are appended below:

- a. **Fabric.** Outer cover of jacket is to be made of washable Digital Combat cloth.

Color of Digital Combat print:

Ser	Color	PANTONE Color Name	PANTONE Number
1.	Grey	Sharkskin	17-3914 TCX
2.	Deep Ocean	Stargazer	19-4316 TCX
3.	Olive	Urban Chic	19-5004 TCX
4.	Dark navy	Dark Sapphire	19-4020 TCX
5.	Printed as per approved BN Pattern		

- b. **Shoulder Pocket.** One end of shoulder pocket (18.5-22.5 cm X 8.5-11.5 cm) should be stitched on the exterior surface of the back outer cover of the jacket and the other end should have a Velcro (9-10 cm X 16-19 cm) and a loop on the edge.

- c. **Collar Pocket.** 02 (Two) in no collar pocket should be permanently fixed with the jacket (As per sample). There should be a provision for opening and closing by Velcro for insertion of color panels. There should also be a provision for overlapping the collar at front and by Velcro (4-6 cm X 4-6 cm).

- d. **Cover Groin Guard.** Cover groin guard should be made of same fabric as of armour cover of jacket and should house/ contain the soft armour panel of groin by 02 in no Velcro (9-11 cm X 3-5 cm) to be stitched on the exterior side of the cover groin guard which should be detachable.

- e. **Circumference of Neck.** Circumference of the neck of outer cover of the jacket should be 64-68 cm after stitching the collar and insertion of soft armour panel inside the outer fabric.

- f. **Front Outer Cover of Jacket.**

(1) **Dimension:**

(a) **Height:**

- (i) Large Size : 53-56 cm
(ii) Medium Size : 51-54 cm
(iii) Small Size : 49-52 cm

(b) **Width:**

- (i) Large Size : 58-62 cm
(ii) Medium Size : 55-59 cm
(iii) Small Size : 48-54 cm

- (c) **Chest (Large, Medium & Small size):** 33-36 cm

(d) **Height of Side:**

- (i) Large Size : 25-29 cm
(ii) Medium Size : 23-26 cm
(iii) Small Size : 22-25 cm



(e) **Dimension of Velcro:**

- (i) Large Size : 18-20 cm X 15-17 cm
- (ii) Medium Size : 18-20 cm X 12-15 cm
- (iii) Small Size : 18-20 cm X 11-13 cm

(f) **Dimension of Utility Pocket:**

- (i) Large Size : 18-20 cm X 13-15 cm
- (ii) Medium Size : 18-20 cm X 13-15 cm
- (iii) Small Size : 18-20 cm X 13-14 cm

(g) **Location of Utility Pocket from base (Large, Medium & Small size):** 4-5 cm.(h) **Location of extra pocket from base:**

- (i) Large Size : 6-8 cm
- (ii) Medium Size : 4-6 cm
- (iii) Small Size : 3-4 cm

(2) **Extra Pocket (Large, Medium & Small):** All sizes should have extra pocket. Width and Height of Extra pocket should be 26-28 cm and 33-35 cm respectively. Flap of extra pocket should be 26-28 cm X 7-8 cm and fixed by Velcro (24-26 cm X 5-6 cm).

(3) **Velcro Size (Large, Medium, Small).** 02 X Velcro (Size : Large- 18-20 cm X 13-15 cm, Medium-18-20 cm X 13-15 cm and Small 18-20 cm X 13-14 cm) should be stitched on both sides of the utility pockets. Size of flap of Utility Pocket 13-14 cm X 6-9 cm. Flaps are to be closed with the pockets by means of Velcro 12-13 cm X 3-5 cm.

(4) **Groin Securing Pocket:** Lower side of the front panel should have a pocket where the groin can kept when it is not use. One end of 02 X Elastic straps (21-26 cm X 4-6 cm) should be stitched inside the pocket for groin guard and the other end should have a Velcro (7-11 cm X 5-7 cm) stitched on it for fixing groin guard.

(5) **Overall Shape:** As per BN sample.

(6) **Colour:** Digital Combat (Same as BN Combat Uniform).

Color of Digital Combat print:

Ser	Color	PANTONE Color Name	PANTONE Number
1.	Grey	Sharkskin	17-3914 TCX
2.	Deep Ocean	Stargazer	19-4316 TCX
3.	Olive	Urban Chic	19-5004 TCX
4.	Dark navy	Dark Sapphire	19-4020 TCX
5.	Printed as per approved BN Pattern		

g. **Back Outer Cover of Jacket.**(1) **Dimension:**(a) **Height:**

- (i) Large Size : 53-56 cm
(ii) Medium Size : 51-54 cm
(iii) Small Size : 49-52 cm

(b) **Width of Side (Large, Medium & Small Size):** 51-54 cm(c) **Chest Back Side (Large, Medium & Small size):** 36-41 cm(d) **Height of Side:**

- (i) Large Size : 23-25 cm
(ii) Medium Size : 21-23 cm
(iii) Small Size : 19-21 cm

(2) **Overlapping Strap.** An overlapping strap (80-83 cm X 19-21 cm) made of double layer should be stitched under exterior side of the back outer cover of jacket 38-40 cm length of strap (middle portion) to be stitched on the exterior side of the back outer cover of jacket and 20-22 cm on both the sides to kept to open with strap stitched (19-21 cm X 18-20 cm). The location of strap from the base should be 4-5 cm.

(3) **Extra Pocket (Large, Medium & Small).** All sizes should have extra pocket. Width & Height of extra pocket should be 27-29 cm & 33-35 cm respectively. Flap of extra pocket should be 27-29 cm X 7-9 cm and fixed by Velcro (25-27 cm X 5-6 cm).

(4) Overlapping straps should be adjustable on both sides with the back cover front.

(5) Two nylon straps (28-30 cm X 4-6 cm each) should be fixed from 11-13 cm and 25-27 cm above the waist level.

(6) Location of the extra pocket should be 6-8 cm below from the neck.

(7) **Overall Shape.** : As per BN sample.

(8) **Colour.** Digital Combat (Same as BN Combat Uniform).

Colour of Digital Combat Print:

Ser	Color	PANTONE Color Name	PANTONE Number
1.	Grey	Sharkskin	17-3914 TCX
2.	Deep Ocean	Stargazer	19-4316 TCX
3.	Olive	Urban Chic	19-5004 TCX
4.	Dark navy	Dark Sapphire	19-4020 TCX
5.	Printed as per approved BN Pattern		

15. **Weight of Flak Jacket.**

- a. **Large** : Not more than 4.5 kg.
b. **Medium** : Not more than 4 kg.
c. **Small** : Not more than 3.5 kg.



16. **Instruction for Stitching.** All velcro should be double stitched. Inner stitch should be 1cm away from the outer stitch. Kevlar/equivalent thread is to be used for stitching soft armour panels. A certificate from original manufacturer of Flak Jacket is to be submitted with the offer stating that fabrication and stitching of outer cover, ballistic panel and all other part of the offered Jacket have been done in their own factory.

17. **Anti Trauma Material.** All soft armour panels (front, back, collar, shoulder and groin) should have good anti trauma material to minimize the trauma effect.

18. **Shelf Life.** Shelf life of the jacket should be 10 years. Shelf life certificate is to be provided with the offer.

19. **Ballistic Test.** The jacket should qualify the ballistic and bullet proof test. Each part of one complete sample will be tested for resistance to ballistic penetration and Back Face Signature (BFS). Complete penetration or any designated depth measurement of BFS in the backing material greater than 44 mm (1.73") by any fair hit shall constitute a failure. The sample will have to qualify ballistic test as mentioned below:

Threat Level	Materials	Caliber of Ammunition	Bullet Description	Bullet Weight (gm)	Muzzle Velocity (m/sec)	Distance (m)
NIJ - IIIA	Jacket with soft armour panels	9 x 19 mm Parabellum	FMJ RN	8.2	436	5

20. **Washing Test, Dye Fastness to Sunlight Test and Water Resistance Test (Outer cover cloth of Jacket).** Supplied sample (Outer cover cloth of Jacket) should qualify Washing Test, Dye Fastness to Sunlight Test and Water Resistance Test. Description of the tests are as follows:

a. **Washing Test** Sample will be kept in the reagent of 0.5% soap flakes for 1.5 hrs at 60°C. Subjected to washing test minimum grading 3 out of 4 in that test will be accepted.

b. **Dye Fastness to Sunlight Test** If the sample is qualified in Washing Test, it will be subjected to dry fastness test minimum grading 3 out of 4 in that test will be accepted.

c. **Water Resistance Test (Cone Test)** Supplied sample will be subjected to Cone Test minimum grading 3 out of 4 in that test will be accepted.

a. **Ballistic Panels.** Every ballistic panel should have a label. The label should be permanently attached to exterior surface of the panel. The label should contain the following information, printed in English Language with permanent ink:

- (1) Name, logo or other identification of the manufacture.
- (2) The rated level of protection.
- (3) Size.
- (4) Lot number.
- (5) Date of manufacture.
- (6) Strike face or wear face.
- (7) Serial number.
- (8) Care instructions.



- b. **Outer Cover of Jacket.** Outer cover of jacket with removable ballistic panels should have label stitched on the exterior side of back armour carrier facing body. The label should contain the following information printed in English Language with permanent ink:
- (1) Name, logo or other identification of the manufacture.
 - (2) A statement for the user to look at the ballistic panels to determine the level of ballistic protection (This warning to be written with letters at least twice the size of rest of the type on the label).
 - (3) Size
 - (4) Lot number.
 - (5) Date of manufacture.
 - (6) Care instructions.
 - (7) Any special condition for washing/use.
22. **Inspection certificate.** All components of the jacket should have printed inspection certificate of the manufacturer with the year and month of manufacture.
23. **Manufacturer's Certificate.** Certificate from the manufacturer is to be provided with the offer indicating the year of manufacture and confirming that the offered item will meet the purpose and technical specification mentioned in Para 2,12- 15.
24. **Packing Details.** All Flak Jacket are to be supplied in sealed condition. Each Flak Jacket is to be packed standard sea/ air worthy standard carry bag. All packages should be supplied by sea worthy container / pallet for air shipment. Each package is to be marked as follows:
- a. Name of Item
 - b. Contract no and date
 - c. Quantity
 - d. Year of manufacture
 - e. Supplier's name and address with contact numbers
25. **Sample.** 02 (Two) complete set of the offered Flak Jacket is to be supplied with the offer for evaluation of tender and Ballistic Test. Size of sample should be mentioned clearly. **Offer without sample will not be accepted.**
26. **Brochure/Catalogue.** 01 (One) copy of original brochure/catalogue in English is to be provided with the offer for evaluation of tender. Product Brochure of the manufacturer is to be provided along with the offer.
27. **Manual.** 02 (Two) set of Instructions for preservation and long storage manual (in English) is to be supplied with the Jacket.
28. **Warranty.**
- a. Warranty is to be given for 01 year from the date of acceptance by BN. If any defect/discrepancy of any item arises within the period of warranty, the specific period from the date of notification to the supplier up to the date of rectification of defect/resolve of discrepancy will have to be extended from the warranty period for that particular item(s).
 - b. If any defect/discrepancy arises within warranty period, then the item(s) are to be replaced free of cost including freight within 03 (three) months from the date of notification of the same to the supplier. For warranty replacement, the supplier will collect the defective item(s) from NSD Chattogram and re-supply the same to collecting place after the warranty repair.
 - c. Warranty certificate is to be submitted with the offer.



29. **Guarantee.** Guarantee is to be given that the Flak Jacket will be suitable to meet the purpose and technical specification mentioned in Para 2, 12-15 above and the performance of the Flak Jacket will remain effective in all respect for the period of shelf life. Guarantee Certificate is to be submitted with the offer.

30. **Quality Assurance.** Defence Quality Assurance certificate is to be provided by the appropriate Quality Assurance Organization of the manufacturing country.

31. **Final Acceptance.** Final acceptance of the Flak jacket will be given after physical inspection, comparison of supplied Flak jacket with approved sample and satisfactory Ballistic Test and Washing Test, Dye fastness to sunlight Test & Water Resistance Test of 02 in no Flak Jacket well be selected by random sampling. Ballistic Test and Washing Test, Dye fastness to sunlight Test & Water Resistance Test procedure will be as mentioned in Para 19 & 20 respectively. Test and trial will be completed by Naval Armament Inspection Organization (NAIO) and the supplier's representative will remain present during Test/Trial.

32. **Shipment and Delivery.**

- a. The supplier will arrange delivery of all the items (**without import duties**) to the following address:

THE COMMANDING OFFICER
NAVAL STORES DEPOT, CHATTOGRAM
NEW MOORING
CHATTOGRAM
BANGLADESH

- b. **Delivery Schedule:** Items will have to be delivered within **180 days** from the date of signing of the contract.

- c. **Port of Shipment:** Any Port of manufacturing country.

33. **User List.** List of user indicating year is to be submitted with the offer.

34. **Terms of Payment.** Total (100%) payment will be made in local currency after satisfactory test/trial and acceptance by Bangladesh Navy.

35. **Validity of Offer.** Up to 30 June 2025.

36. **Compliance Statement.** A compliance statement fulfilling all the required information is to be mentioned with the offer for evaluation of tender. Any deviation from the specification is also to be mentioned in the offer. Here mentioning of Yes/No or comply will not be enough; detail technical data/information of the offered item are to be provided. Incomplete compliance statement may attribute to cancellation of the offer.