

Items to be procured under MPF 2011-12.

List of items listed

1. *Anti Riot Full Body Protection Uniform which includes:-*
 - (a) *Chest Protector.*
 - (b) *Elbow Pad*
 - (c) *Shin Guard*
 - (d) *Upper Arm Guard*
 - (e) *Shoulder Pad*
 - (f) *Groin Guard*
 - (g) *Forearm and Elbow Guard*
 - (h) *Thigh Guard*
2. *Helmet with visor*
3. *Poly Carbonate Lathi*
4. *Poly Carbonate Shield*
5. *Helmet with camera*

Technical Specification of the above items are attached.

Qualitative Requirements for Polycarbonate Anti Riot Equipments

1. Equipment Name:- HELMET

Colour-As required by the user..

- Glass Reinforced plastic material/ **or any other Accredited Test Laboratory proven superior material.**
- Design based on Personal Armour System Ground Troops (PASGT)/**totally protective and comfortable to wear.**
- Selectable, adjustable and comfortable.
- Snap fit and quick release chin strap.
- Scratch proof, Shatterproof, transparent polycarbonate **Visor** fitted with ratched (openable) system.
- Provides excellent protection against projectiles, blunt hit encountered during riot situation.
- **Inner fabric should be detachable & washable.**
- Designed developed and ballistically tested by any **National Accredited Laboratory For calibration and testing.**
- Wt.- Less than 2.5 kg including all detachable Items.

a. PC Visor-

- a. 2.6mm to 4.5 mm thickness, **scratch proof /scratch resistant.**
- b. Movable, Adjustable, Detachable and Comfortable.
- c. Anti-fog visor: 20°-50° incline
- d. Light Transmission rate of visor not **less than 85%**
- e. Attached Metal Net (Detachable): Wt. less than 600 gm
- f. **Its life should be upto 50% visiblity and not less than 02 years.**

b- ShellMaterial : ABS(anti buta-di-ene poly-styrene)/Fibre reinforced plastic (FRP) **or any other NABL proven superior material.**Round shape shell with comfortable interior Cushion padding about 2 cm \pm 10% **with breathe- holes for air circulation.**Adjustable and Comfortable harness **should be detachable & washable.**Top Thickness: 5mm \pm 10%Side Thickness: 04mm \pm 10%Weight : 1.60Kg \pm 10%**c- Ear Guard**PC / ABS/ Fibre reinforced plastic **or any other NABL proven superior material with air circulation.**Side thickness: 3.5 mm \pm 10%**d- Chin Strap**

- Snug/Snap/Strip fit and quick release chin strap.
- Soft and comfortable on skin.

e- Miscellaneous

- 1. Anti-bacterial Cloth (Treated) or any other NABL proven superior material should be used for inner lining. A certificate to this effect will be provided from a govt. accredited laboratory.
- b. PE(Poly Ethylene) inner layer against cutting and stabbing
- c. Quick release buckle.
- d. Design based on personal Armour System Ground Troops. (PASGT)/ **totally protective and comfortable to wear.**
- e. Side holes to make hearing easier and back holes for better ventilation.
- f. Provides excellent protection against projectiles encountered during RIOT situation with comfortable **sweat absorbing, Mesh Fabric** head padding or any other NABL proven superior material.
- g. **Additional & Essential features:** Protection of neck- A semi- circular fire and water resistant pad to provide cover protection to sides of the neck and back protection of cervical from stones and projectile attacks.
- h. **Neck curtain** should be fire resistant fabric/artificial leather or EPF (Expanded Polythene Padding Foam)/Polyfoam that can avoid smell and fungal infection or any other NABL proven superior material.
- i. Capable of protecting personnel against brick batting, stone pelting, molotov cocktails, acid bottles, and cane attack etc.
- j. Ventilation should be proper.
- k. Designed to connect with ear/ head phone and gas mask.
- l. Tested by leading NABL certified Laboratory for its parameters, and material used in construction/fabrication.
- m. Shatterproof, transparent PC Visor, **Scratch resistant** fitted with ratchet (openable) system.
- n. **Rust proof** metal pivot for opening and closing of visor.

2. Equipment Name:- Polycarbonate Lathi

Features :

- *Material : PC (polycarbonate)*
- *Ultra Strong*
- **Scratch proof, Non-Corrosive, fire proof.**
- *Light wt.*
- *Transparent*
- *High Impact Resistance*
- *Long Shelf life*
- **Straight/firm /collapsible features may be preferred in light of new technology with ideal flexibility.**

Technical Features :-

- *Length : 1 mt ± 10 mm*
- *Diameter : 2.5cm ± 2mm*
- *Wall Thickness : 4mm ± 0.5mm*
- *Weight. :- 350gm ± 25 gm*

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Additional and essential features

Handgrip-

- About 5"
- Round shaped
- Unbreakable (As required).
- Soft, shock absorbent, but firm grip for proper handling with soft cushioning.

Wrist Band- In the form of flexi 6" cotton/nylon/ suitable fabric loop on the top of handgrip to enable proper security of the lathi/cane.

Protective shoe/stud:- Bottom 2" of Lathi plugged with ring shaped, firm, fire and water resistant fibre/rubber cap firmly/ permanently fixed.

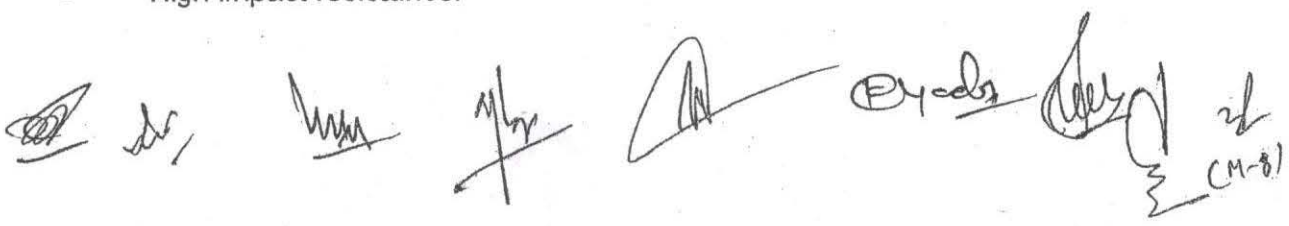
Manufacturer's/ Supplier's written Submission regarding non-corrosion, scratch proofing, fire and water resistance be provided.

3. Equipment Name:- Polycarbonate Shield

- *Raw material: Engineering grade Polycarbonate or any other technically proven superior material.*
- *Provides excellent protection against brick batting, stone pelting, molotov cocktails, chains, acids, iron, rod/cane attack.*
- *Light wt., **scratch proof, durable** and transparent.*
- *Improved consistency in thickness and enhanced strength.*
- *Thick ribs all along the edges for higher structural strength.*
- *Vision area of shield so shaped as to avoid scratches during handling.*
- *Cushioned/ comfortable arm rest for comfort and longevity.*
- *High impact resistance.*

TECHNICAL DATA

- **Shape:** *Rectangular or any other proven better shape.*
- **Length:** *910mm to 1000mm*
- **Weight :** *Less than 3.4 kg*
- **Breadth (Flat):** *580mm ± 20mm or any other proven better shape.*
- **Breadth Concave:** *620mm ± 10mm or any other proven better shape.*
- **Thickness:** *3.0mm ± 0.5mm*
- **Material :** *Transparent/scratch proof.*
- *PC(polycarbonate) virgin grade, and not recycled.*
- *Edges well secured and covered by durable band / elbows.*
- *Raw material : Engineering grade Polycarbonate*
- *Provide complete protection against brick batting, stone pelting, iron rod/cane Attack, **molotov cocktails, acids.***
- *Thick ribs all along the edges for higher structural strength*
- *Cushioned arm rest to provide comfort in long use i.e. to have solid strap, handle and pad for better grip,*
- *High impact resistance.*


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4. Equipment Name:- Full Body Protector

Material - Cloth Jackets of fire retardant drill cloth in required colour and required camouflage pattern.

Colour -As required-plain/ disruptive/ camouflage pattern.

Weight- 5.950kg $\pm 10\%$

Size:- Small/ Large/ Extra Large (The description is given here for large size)

Properties

- Physical protection against brick batting cane/knife/acid attacks, molotov cocktails and projectiles encountered in Riot situation and other policing functions.
- Special fire retardant, high impact resistance rubber inserts.
- Protective sheets for front and back pouches with trauma pads.
- **Sweat absorbing mesh fabric (detachable & washable) in-lined** elbow and shin guards ergonomically formed to protect limbs during riot/mob situation
- Impact attenuation (reduction) above 80%.
- Ergonomic design for maximum wearing comfort.
- Thoroughly tested by leading **NABL** laboratories engaged in research in physiology and bio-engineering with certificate to that effect.
- Design ensures restraint free movement long shelf life, light wt. with Excellent Protection capability.

1. Chest Protector- (40 cm $\pm 10\%$)

- Upto 4.5 mm $\pm 10\%$ thick poly foam.
- Inner lining made of mesh fabric(**Detachable & washable**) with sweat absorbing lining 2mm $\pm 10\%$ thick foam with specified (16-22) shore A hardness and engineered plastic **certified from a NABL lab**.
- Weight: - Less than 3.00 kg
- Material – **High quality unbreakable** engineered plastic for front and back pouches with trauma pads.
- High impact resistant rubber insert to **absorb trauma**.
- All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air.**
- Inter stichable so as to remain in place and not slip.**

2. Elbow Pad. (Length- 37 cm $\pm 10\%$)

- Made of soft engineered plastic
- Velcro closure.
- EVA (Ethylene and vinyl Acetylene based Polymer) Poly foam of minimum specified hardness.
Engineered plastic with matt surface of 2.5mm $\pm 10\%$ thickness.
- Mesh fabric poly foam of upto 4mm $\pm 10\%$ specified hardness.
- Should be able to withstand impact from one metre on hard surface.
- Inter stichable so as to remain in place and not slip.**
- All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air.**
- The fabric should be detachable & washable.**



3. Shin guard- (Length- 55 cm±10%)

- a. Made of soft engineered plastic or any other NABL proven superior material.
- b. Elastic stripes for easy wearing.
- c. Velcro closure
- d. **Sweat absorbing mesh fabric** Poly foam 10mm±10% hardness
- e. **Inter stichable so as to remain in place and not slip.**
- f. All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air.
- g. The fabric should be detachable & washable.

4. Upper Arm

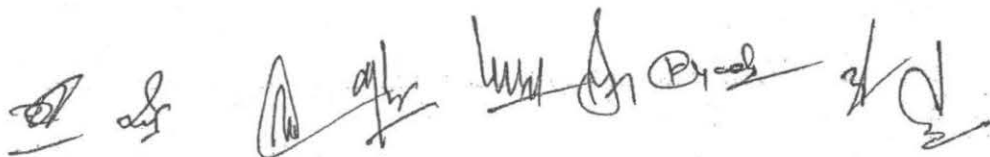
- a. High protection engineered soft plastic or any other NABL proven superior material with **Sweat absorbing mesh fabric (Detachable & washable)** inner protection with a unique flexible design for optimum movement, fit and comfort suitable to human body parts shape.
- b. Velcro fixed.
- c. **Inter stichable so as to remain in place and not slip.**
- g. All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air

5. Shoulder Pad (15 cm±10%)

- a. Velcro fixed.
- b. High protection engineered soft plastic or any other NABL proven superior material with a unique flexible design for optimum movement, fit and comfort.
- c. Poly foam (preferably 3mm thickness) with specified (35-40) Shore A hardness and black mesh fabric that covers the chest and back.
- d. High protection engineered soft plastic with shock absorbing EVA Polyfoam cushioning the shoulder.
- e. Inner lining made of mesh sweat absorbing fabric (**detachable & washable**).
- f. **Inter stichable so as to remain in place and not slip.**
- g. All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air.

6. Groin :-

- a. Section has an outer shock absorbing **Sweat absorbing mesh fabric (detachable & washable)** padding (plastic/ EVA/ poly foam) along with hard shell cap or any other NABL proven superior material.
- b. The protection attachment should cover the groin area from all ricocheted projectiles and allow a comfortable sitting.
- c. **Inter stichable so as to remain in place and not slip.**
- d. All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air



7. Forearm & Elbow Guard (37 cm±10%)

- a. High protection engineered soft plastic outer shell or any other NABL proven superior material should provide flexibility required for forearm and elbow.
- b. Shock absorbing poly foam with minimum specified (Maximum 5mm) thickness and black mesh(detachable & washable fabric) lining which offers comfort and breathability
- c. Adjustable straps fastening with durable elastic and Velcro
- d. High protection engineered soft plastic of minimum specified standard thickness (Preferably 2.5-3.5mm) so that it does not lose its flexibility with higher padding or any other NABL proven superior material.
- e. Inter stichable so as to remain in place and not slip.
- f. All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air.

8. Thigh Guard (44cm±10%)

- a. Thigh guard must be supported by kamarbandh to avoid slippage while running and during movement
- b. High protection engineered unbreakable plastic of 2.5 to 04 mm thickness on thigh section.
- c. EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material with minimum 4.5 mm thickness and mesh lining (detachable & washable fabric)for comfort and breathability.
- d. Adjustable straps fastening with durable elastic and Velcro.
- e. Length:- 146.5±10%
- f. Inter stichable so as to remain in place and not slip. A fire retardant drill cloth (detachable & washable fabric) jacket with fire retardant and polycarbonate inserts in front and back pouches. Two shin guards having high resistant unbreakable plastic inserts.
- g. All sandwiches paddings of soft plastic with EVA (Ethylene and vinyl Acetylene based Polymer) foam or any other technically better test proven material, should have number of small holes for free movement of air.

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Specification for Camera for Helmet

Video Resolution : 1920 X 1080 @ 30 FP (HD)
Video Format : AVI
Camera Mega Pixel : 5 MP
Angle of view : 170 Degree
Internal Battery : DC 3.7 V (650 MA)
Lithium Battery : Up to 16 GB Memory Type.