



**MARINHA DO BRASIL**

**COMANDO DO MATERIAL DE FUZILEIROS NAVAIS**

**ESPECIFICAÇÃO TÉCNICA DO COLETE BALÍSTICO ARMADURA CORPORAL**

**NÍVEL III-A (em inglês)**

**SUBJECT: BODY ARMOR / Ballistic vest - level III-A**

**Level of Protection III-A, according to NIJ Standard 0101.06 / 0101.07**

**1. GENERAL**

This specification delineate the technical requisites for fabricating a Body Armor Ballistic Vest intended for employment by ground troops and special units of the Brazilian Navy. The accompanying photos illustrate the prescribed model's overall configuration.



**Overall view (\* Images are for illustration purposes only)**

**2. THE BODY ARMOR COMPONENTS**

## **2.1 Composition:**

- **Base Vest Outershell**
- safety handle (stitched to the back of the Vest Outer shell) for pulling a wounded person.
- stripes in front and back for Load Carrying Ability – M.O.L.L.E system;
- two pockets (front and back) for inserting ballistic plates with dimensions up to 25,4 x30,3x2,2cm.
- Two sides pocketes for ballistics for inserting ballistic plates with dimensions up to 6”x6”.
- Adjustable straps on both sides of the shoulders.
- Front and back opening for better adjustments

**2.2 - Ballistic Panels – Soft Armor**, composed by separate back and front panels ballistics inserts, level III-A, NIJ 0101.06 / 0101.07.

**2.3 - Detachable Neck/Yoke Protector Carrier** and its proper ballistic inserts.

**2.4 - Detachable Groin/lower abdomen Protector Carrier** and its ballistic insert.

**2.5 – Side pockets for inserting side plates up to 6” x 6”.**

## **3. THE BODY ARMOR MATERIALS**

- **Base Vest Outershell** – made of Nylon coated P.U. type “**Light Cordura**”, Water Repellent, Fire Retardant (according to FMVSS 302 – U.S. Federal Motor Vehicle Safety Standards), Straps and “Velcro” pieces must be made of high quality material.
- **Base Vest Ballistic Panels - SOFT ARMOR**– Featuring characteristic of flexibility, this ballistic protection vest meets Level III-A standards (NIJ Standard – 0101.06 / 0101.07). It is coated with a black fabric that is 100% waterproof and resistant to dust and moisture. A stringent sealing process is employed to prevent any detachment that could compromise the integrity of the ballistic panel. The side of the panel facing away from the body is clearly labeled “**STRIKE FACE,**” indicating its purpose as the side intended to absorb impact from bullets.
- **Components of the neck/yoke and groin protectors** – same material and color of the Base Vest Outershell, assembled in the Base Vest with proper straps, “Velcro” Type connections and pressure buttons, all made of high quality material for military use.
- **Ballistic inserts of the neck-yoke and groin protectors** - have the same characteristics of the Ballistic Vest Panels, including level III-A ballistic protection (NIJ Standard – 0101.06 / 0101.07) with characteristic of flexibility.
  - **Ballistic Materials** – Aramid and/or UHMWPE
  - **Weight** – 4.8 kg/M<sup>2</sup> (max)
  - **Thickness** – 6 mm / .24 inches (max)
  - **Color** - Multicam

## **4 - SPECIAL FEATURES**

### **Integrated Load Carrying Capability:**

- **M.O.L.L.E** (Modular system) Compatibility: Utilizes modular webbing for seamless attachment of additional pouches, accessories, and equipment. Incorporates Malice clips for versatile configuration, enabling warriors to tailor components for specific missions. This system facilitates direct connection of hydration systems and assault packs to the back of the Ballistic Vest without the need for shoulder straps.
- **Wiring Integration:** Provides a designated route for managing wiring associated with individual radios and other communication systems.
- **Reinforced Drag Handle:** Strategically stitched to the back for emergency extractions, facilitating the safe and efficient movement of wounded personnel.

- **Enhanced Durability:** Features reinforced stitching to ensure increased durability and longevity, enhancing the overall robustness of the gear.
- **Quick release system (QRS)** - The QRS should be made from high-strength materials capable of withstanding the stresses of rapid deployment. The QRS should be lightweight to minimize additional burden on the user or the ballistic system itself. It should allow for rapid attachment and detachment of the ballistic system without requiring complex maneuvers or tools, for quick and intuitive operation, even in high-stress situations.

**5. BODY ARMOR PROTECTION AND DURABILITY**

**5.1 - NIJ 0101.06 / 0101.07 Certified level III-A**

"Ballistic performance must undergo testing and approval by a recognized laboratory in accordance with NIJ Standards (0101.06 / 0101.07 - Level IIIA) and be approved by a test laboratory listed on the NIJ approved labs website (<https://www.justnet.org/compilant/NIJ-approved-labs.html>). The laboratory must possess an NIJ approval letter. The Body Armor Ballistic Vest should effectively stop 0.357 SIG FMJ FN and 0.44 Magnum SWC rounds.

A certificate must be provided, confirming that the Body Armor Ballistic Vest has been tested and approved according to NIJ Standards.

**6. WARRANTY**

It is requested a minimum of seven (7) years for the Ballistics Panels in proper use and normal conditions and four (4) years warranty for the outer cover fabric and neck/yoke/groin and Lower abdomen protector carriers.

A quality assurance of industries must be given according Certificate ISO 9001-2015 and fully complies with its standards.

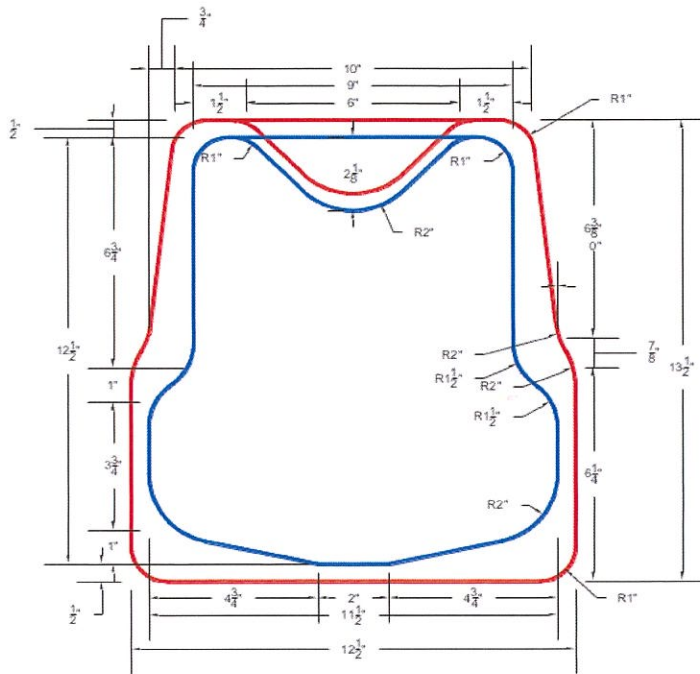
**6.1 SIZING CHART**

Size	Chest Circumference (Inches)	Chest Circumference (cm)
X-SMALL(XS)	30 - 33	76 - 84
SMALL (S)	33 - 37	84 - 94
MEDIUM (M)	37 - 41	94 - 104
LARGE (L)	41 - 45	104 - 114
X-LARGE (XL)	45 - 49	114 - 124
2X - LARGE (XXL)	49 - 53	124 - 134

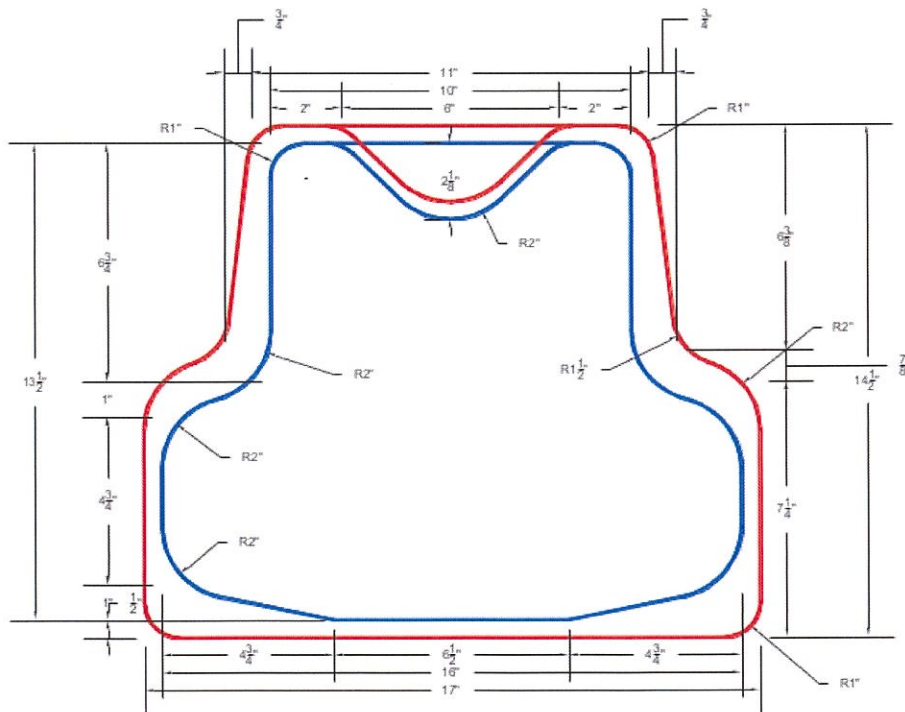
**7.1 – Soft Armor Dimensions**

The dimensions of the FRONT and BACK soft armor required for the ballistic panels must adhere to the NIJ test standards ranging from C1 to C5, as illustrated in the images below.

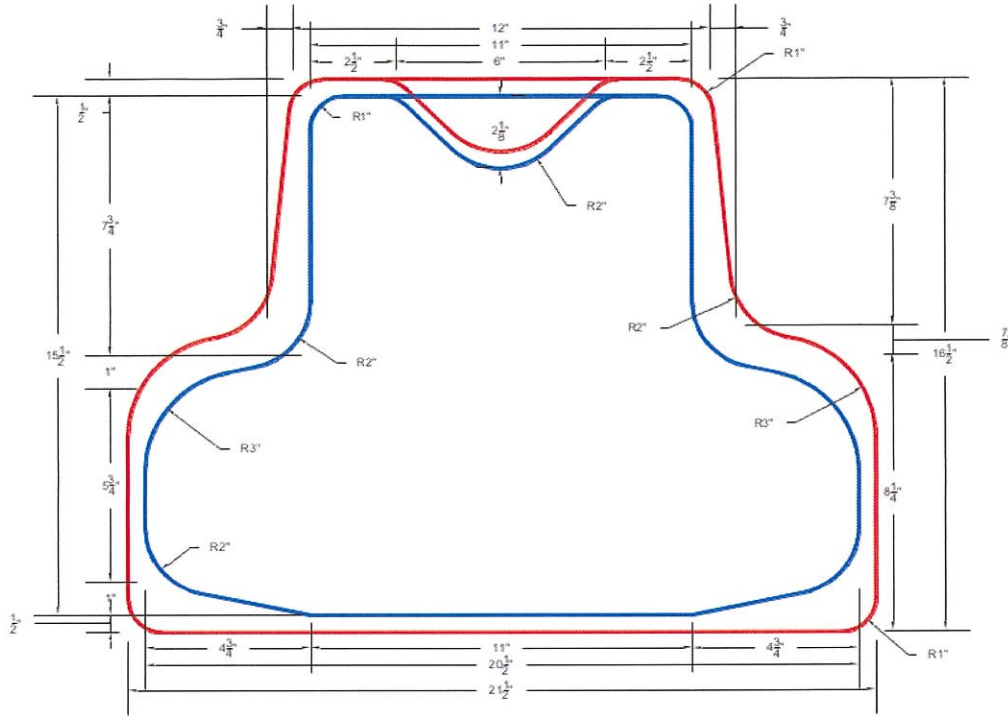
1) NIJ-C-1 ( X-SMALL )



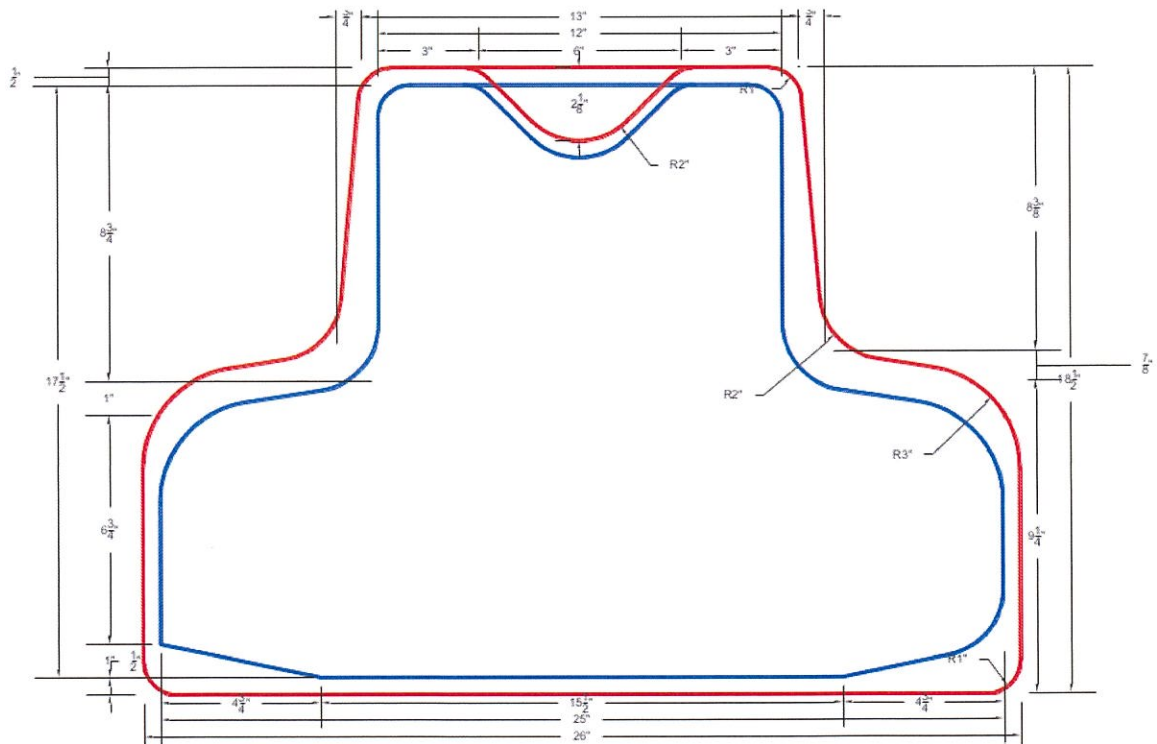
2) NIJ-C-2 (SMALL)



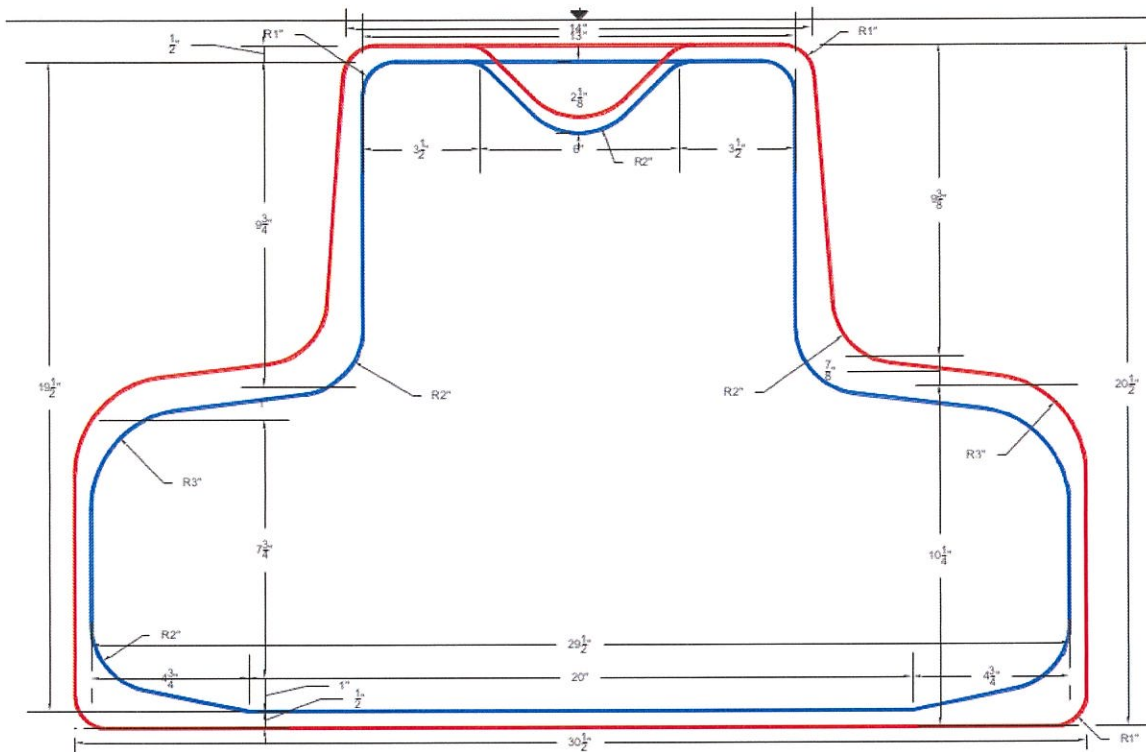
3) NIJ-C-3 (MEDIUM)



4) NIJ-C-4 (LARGE)



5) NIJ-C-5 (X-LARGE)



7. IDENTIFICATION TAGS - Label

A tag must be attached to the internal face of the Ballistic Vest outershell and to each ballistic panel to inform, at least: name of manufacturer, registered mark, part number, model, NIJ - level of protection, size, date of manufacture (month and year), location of manufacture, and special instructions for handle care, as shown below.



NIJ Standard-0101.06

The NIJ label, as depicted above, is essential as it serves as a certification for ballistic quality testing.

**8. SAMPLE**

If requested, a sample must be presented for appreciation about fully conformity with the specifications required.

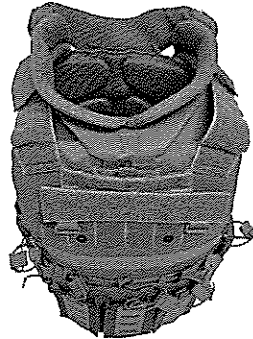
**9. MANUAL**

A technical manual will be requested in both languages Portuguese and English, which must be delivered together with the sample / first delivery, containing at least:

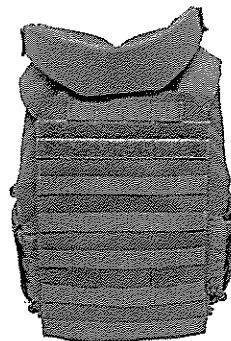
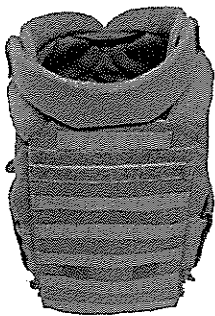
- General Information;
- Equipment Description;
- Major Components;
- Theory of Operation;
- Vest assembly;
- Storage and Maintenance Instructions; and
- NSN and Part Number of each part.

**10. PHOTOS**

**COLLAR FRONTAL CLOSE**



**COLLAR BACK CLOSE**



\* Images are for illustration purposes only

MARCELO RIBEIRO DE FIGUEIREDO  
Capitão de Mar e Guerra (RM1-FN)  
Gerente de Equipagens Operativas  
ASSINADO DIGITALMENTE



**MARINHA DO BRASIL  
COMANDO DO MATERIAL DE FUZILEIROS NAVAIS**

**ESPECIFICAÇÃO TÉCNICA DA PLACA BALÍSTICA DE FLUTUABILIDADE  
POSITIVA NÍVEL III (em inglês) SUBJECT: FLOATING ARMOR PLATE (Level of  
Protection III)**

**1. GENERAL**

Below are the refined specifications for the manufacturing of a Floating Armor Plate, designed to enhance the ballistic protection of individual Body Armor Vests utilized by Police personnel:

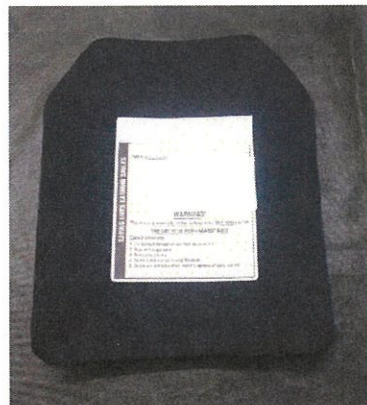
**Purpose:** These specifications outline the technical requirements necessary for the production of a Floating Armor Plate, intended to bolster the ballistic capabilities of standard Body Armor Vests used by law enforcement officers.

**Design:** The Floating Armor Plate is to be seamlessly integrated into designated front and back pockets of the Body Armor Vests, augmenting their ballistic resistance to meet or exceed level III standards.

**Floating Capability:** The Floating Armor Plate must possess inherent buoyancy, ensuring it remains afloat in water-based environments, thereby enhancing the wearer's survivability in aquatic scenarios.

**Visual Reference:** Refer to the accompanying images below for a visual representation of the recommended design parameters and general shape specifications.

FRONT and BACK (Top Cut Corner)



**2. THE FLOATING ARMOR PLATE COMPONENTS AND MATERIALS**

- **Floating armor plate**, made of ARAMID and/or UHMWPE (Ultra-High Molecular Weight Polyethylene), with characteristic of flexibility, contour-curved shape to provide maximum wearer comfort. The plate must provide a minimum Level III ballistic protection (NIJ Standart – 0101.06 / 0101.07), in conjunction with (ICW) level III-A vests.

- **Floating Armor Plate Cover**, made of waterproof Material, color black or green, to protect and seal the Armor Plate from water, dust and moisture.

### 3. THE FLOATING ARMOR PLATE DIMENSIONS, WEIGHT AND MATERIALS

#### 3.1- Length

300mm (+/- 3mm).

#### 3.2- Width

250mm (+/- 3mm).

#### 3.3- Thickness

20mm (max.).

#### 3.4- Form

contour-curved with curve radius about 400mm.

#### 3.5- Weight

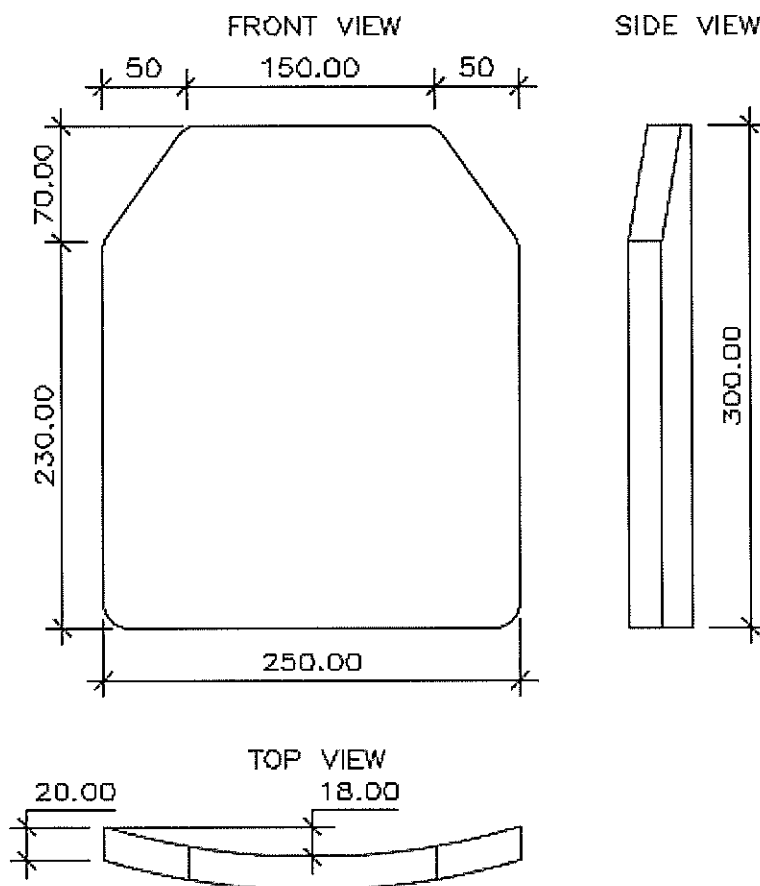
1,50Kg( max.)

#### 3.6 – Ballistic Material:

Aramid and/or UHMWPE (Ultra-High Molecular Weight Polyethylene)

#### 3.7 – Plate cover material

Black Polyurea



#### **4. PROTECTION LEVEL OF THE FLOATING ARMOR PLATE**

The ballistic performance of the Floating Armor Plate must undergo testing and approval by a recognized laboratory in accordance with NIJ Standards (0101.06 / 0101.07 - Level III), supported by an approval letter, and listed on <https://www.justnet.org/compliant/NIJ-approved-labs.html>. It should achieve a minimum V50 rating of 1000 m/sec protection (MIL-STD 662), in Conjunction with III-A soft armor. The Floating Armor Plate may be categorized as level III and must, in conjunction with (ICW) a level III-A vest, provide protection against the following threat levels:

- 7.62x51mm Lead Core (NATO Ball, M-80, SLR, L2A2);
- 7.62x39mm Lead Core (CJLC);
- 7.62x39mm Mild Steel Core (Kalashnikov, AK-47 MSC); and
- 5.56x45mm Lead Core (M193, L2A1).

A certificate must be presented, along with laboratory test reports, to confirm that the Armor Plate has been tested and approved as required. This certificate should explicitly reference the model of the Plate proposed for procurement.

#### **5. WARRANTY**

The longevity of a ballistic panel, and consequently its warranty, holds significant importance. A prolonged lifespan not only ensures durability but also enhances sustainability efforts.

It is required a minimum warranty of seven (7) years for the Floating Armor Plate to guarantee optimal ballistic performance.

#### **6. QUALITY ASSURANCE OF INDUSTRIES**

A quality assurance of industries must be given according Certificate ISO 9001-2015 and fully complies with its standards.

#### **7. IDENTIFICATION MARKS**

A tag must be attached to the internal face of the armor plate to inform, at least: name of manufacturer, registered mark, part number, model, NIJ - level of protection, size, date of manufacture with at least month and year, location of manufacture, and special instructions for handle care, as well as, the threat levels protection ICW a level III-A Vest:

- 7.62x51mm Lead Core (NATO Ball, M-80, SLR, L2A2);
- 7.62x39mm Lead Core (CJLC);
- 7.62x39mm Mild Steel Core (Kalashnikov, AK-47 MSC); and
- 5.56x45mm Lead Core (M193, L2A1).shown below.

#### **8. NIJ label**

The NIJ label, as depicted Below, is essential as it serves as a certification for ballistic quality testing.



NIJ Standard-0101.06

**9. SAMPLE**

If requested a sample of the Armor Plate must be presented for appreciation about fully conformity with those specifications.

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**MARINHA DO BRASIL**

**COMANDO DO MATERIAL DE FUZILEIROS NAVAIS**

**ESPECIFICAÇÃO TÉCNICA DO COLETE BALÍSTICO DE FLUTUABILIDADE  
POSITIVA NÍVEL III-A (em inglês)**

**SUBJECT: LIFE SAVING BULLET PROOF VEST  
(Level of Protection III-A, according to NIJ Standards 0101.06 / 0101.07)**

**1. GENERAL**

These specifications define the technical requirements for the manufacturing of a Life Saving Bullet Proof Vest to provide the ballistic qualities of a Tactical Vest plus the safety and buoyancy capabilities of a general Lifesaving Vest, to be used by the **Brazilian Navy personnel**.

The Life Saving Bullet Proof Vest must be designed to allow a fully equipped wearer to float comfortably in challenging situations.

The photos below show the general shape of the model specified.



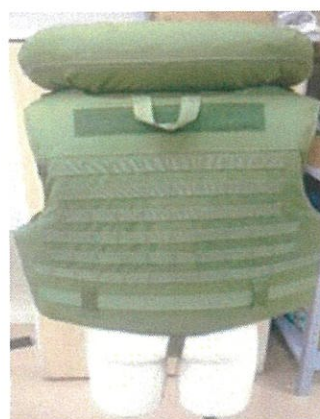
**FRONT**



**BACK**



**FRONT**



**BACK**

## 2. THE LIFE SAVING BULLET PROOF VEST COMPONENTS

### 2.1 - Composition:

- **Detachable Base Vest Outer Shell**, closed at two sides and at both shoulders with adjustable straps “Velcro” Type enforced by Nylon straps and two internal pockets (front and back) for inserting ballistic plates with dimensions up till 25,4x30,3x2,2cm.
- **Vest must have provision for drainage of water below of ballistic and floatation pocket, it also have an** additional extra outer belt made with heavy duty webbing and buckles to ensure a better fit and wrap-around belt to prevent the vest from riding up while in water.
- Another webbing and **Buckles (double) passing through the legs with 1.50 meters** of length fixed below the drainage net, to prevent the vest from riding up while in the water and to allow the military if you are unconscious, do not remain with your face in the water.



**FRONT**



**BACK**

- **Base Vest Ballistic Panels**, front and back, made of ballistic and floating material to provide level III-A ballistic protection (NIJ Standard – 0101.06 / 0101.07) to the upper part of the torso, with flexibility characteristics. These panels are protected by a waterproof cover made of 100% waterproof material, and a rigorous sealing process must be used to protect the ballistic panels against the effects of water, dust and humidity. They must have the proper shape to fit in the vest cover. The side of the panel facing away from the body should be labeled “STRIKE FACE” because that is the side that is intended to be hit by the projectile.



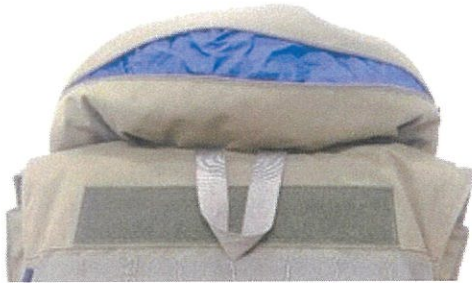
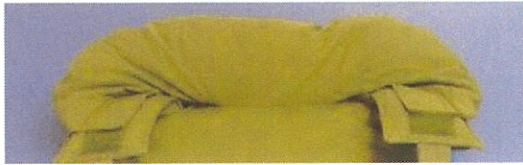
**FRONT**



**BACK**

- **Collar (Neck) Protector** is assembled sewn to the vest with buoyancy material inside. The collar should have concealed seam to reduce irritation due to friction on the sharp edges and

Floating Material inserts shall be removable from collar and covered with impermeable Nylon fabric.



- **Floating Material inserts**, front and back, made from closed polyethylene cells, so that even if they are perforated, do not lose their buoyancy after 24 hours of immersion, protected by an impermeable Nylon cover.

The floating material must have the same shape (outline) of the Base Vest Ballistic Panels, maximum thickness of 3.5 cm on the front and 2.0 cm on the back. They must have the appropriate shape to fit in the outer shell.





The lifejacket **MUST** turn unconscious wearers face's out of the water and float someone with their head well out of the water.

- The lifejacket should have the ability to float:
- Medium size - one person up to 90 kg;
- Large size - one person up to 100 kg; and
- Extra-large size - one person up to 120 kg.

2.2 - All individual parts are assembled and attached to the arrangement of the Life Saving Bullet Proof Vest with adjustable straps with buckles and “Velcro” pieces of high quality material. In order to fully protect the torso area there should be no opens in the sides of the vest.

2.3 - All the ballistic protection inserts and the floating material inserts are separated parts and individually protected by an impermeable Nylon cover.

2.4 - The vest should be flexible and should allow complete freedom of movement without compromising the ability to acquire and neutralize threats from any firing position.

2.5– The weight of the complete Vest will not exceed 5,200 grams.

### **3. THE LIFE SAVING BULLET PROOF VEST MATERIALS**

**3.1 - Base Vest Outer shell** – made of **Nylon coated P.U. type “Water Cordura”**, Water Repellent, Flame Retarding Finish (according to FMVSS 302 – U.S. Federal Motor Vehicle Safety Standards), **color Olive Green** (pattern of the U.S. Armed Forces – MIL-C-43734D). Straps and “Velcro” pieces made of high quality material.

**3.2 - BULLET PROOF VEST Panels (Soft armor)** – front and back, made of ballistic ARAMID and/or UHMWPE(Ultra-High Molecular Weight Polyethylene) with characteristic as follow:

- **flexibility** : High
- **Ballistic protection**: level III-A (NIJ Standard – 0101.06 / 0101.07).
- **Thickness**: 6mm ( Soft armor )
- **Cover**: impermeable Nylon fabric (color black).

**3.3 - Collar (Neck) Protector** – same material and color of the LIFE SAVING BULLET PROOF VEST. Collar is assembled sewn to the vest with buoyancy material inside and all made of high quality material for military use.

**3.4 - Floating Material inserts** – Special Closed Cell Structure Sponge with buoyancy capability according to SABS 146 Class I. The type of floatation material insert must be specified.

**3.5** - All materials must have a **water absorption** coefficient lesser than 3%.

**3.6 - BULLET PROOF VEST Panels (Soft armor)** and Floating Material inserts shall be removable from Base Vest Outer Shell and covered with impermeable Nylon fabric (color black).

### **4. PROTECTION LEVEL OF THE LIFE SAVING BULLET PROOF VEST**

Ballistic performance should be tested and approved test laboratory(which must have NIJ approval letter and must be listed in: <https://www.justnet.org/compilant/NIJ-approved-labs.html> (0101.06 / 0101.07 - Level IIIA). The Life Saving Bullet Proof Vest must stop 0.357 SIG FMJ FN and 0.44 Magnum SJHP.

A certificate paper must be presented to ensure that the Life Saving Bullet Proof Vest was

tested and approved according nij standards required in this document.

**5. SPECIAL FEATURES**

**5.1 INTEGRATED LOAD CARRYING ABILITY:**

- **M.O.L.L.E (Modular system)** for pouch and equipment attachment with malice clip, enabling the warrior to configure components to best meets specific missions. This system allows for direct connection of a hydration system and assault pack to the back of the LIFE SAVING BULLET PROOF VEST without having to use shoulder straps.

**6. WARRANTY**

A minimum warranty of four (4) years is required for the LIFE SAVING BULLET PROOF VEST outer shell, brace holder (neck/throat) and seven (7) years for Ballistic Panels (soft armor) and Floating Material Inserts in proper use and under normal conditions. . The protective covers of the ballistic panels must also have a guarantee of 7 (seven) years regarding sealing, waterproofing and resistance of the material in proper use and normal conditions.

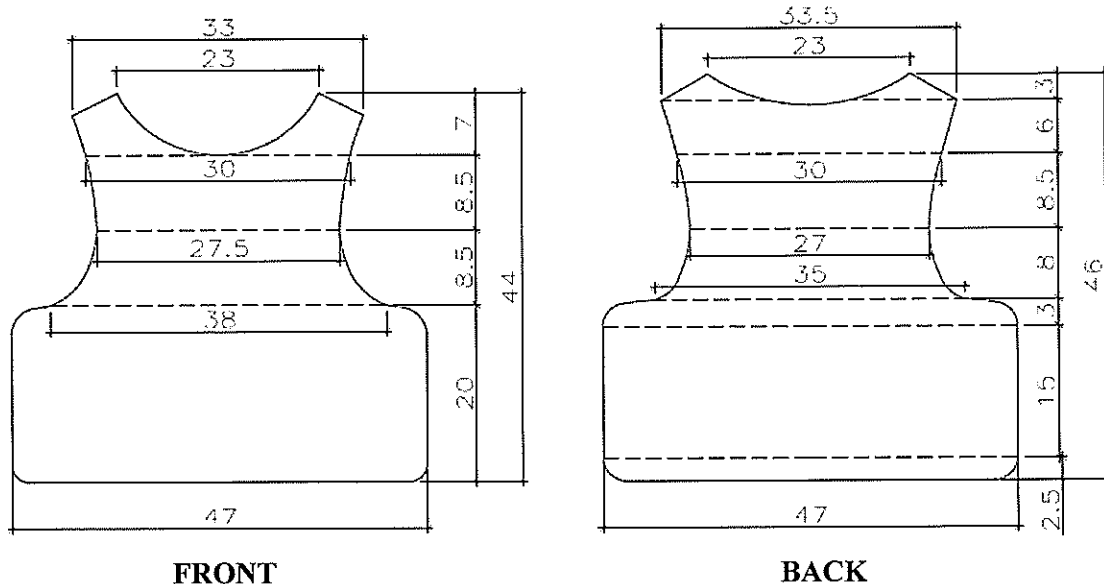
The quality assurance of industries must be given in accordance with the ISO 9001-2015 Certificate and be in full compliance with its standards.

**7. SIZING CHART AND PROPORTION TO OBTAIN**

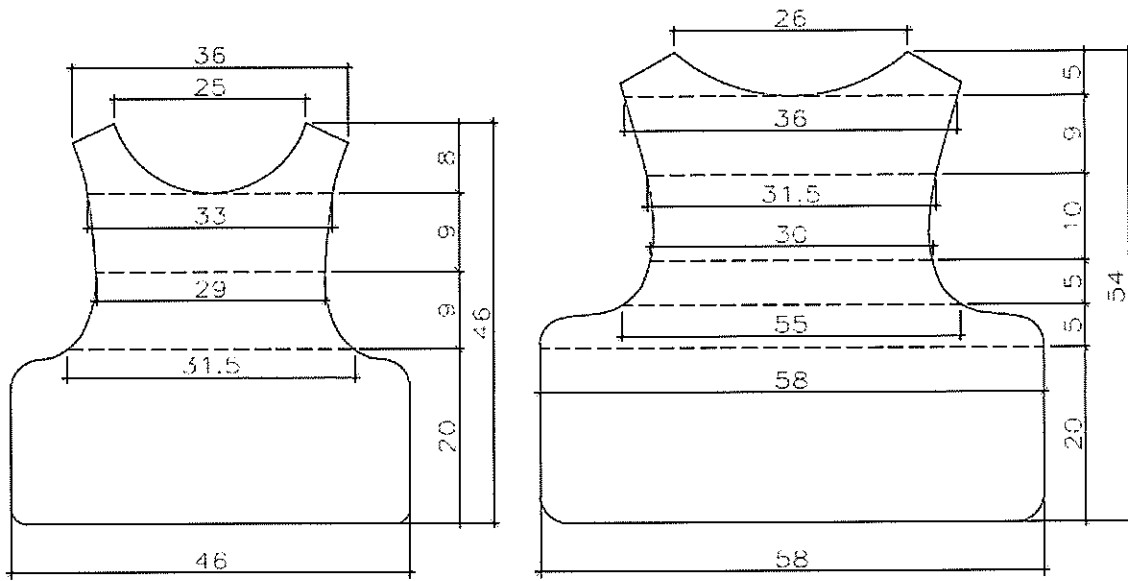
Size	Chest Circumference (Inches)	Chest Circumference (cm)	Proportion to obtain
MEDIUM (M)	37 – 41	93 - 104	10%
LARGE (L)	42 – 45	105 - 114	60%
X-LARGE (XL)	46 – 49	115 - 124	30%

The dimensions of the **FRONT and BACK** ballistic panels are presented below (**Tolerance: +/- 1 cm**).

**MEDIUM**



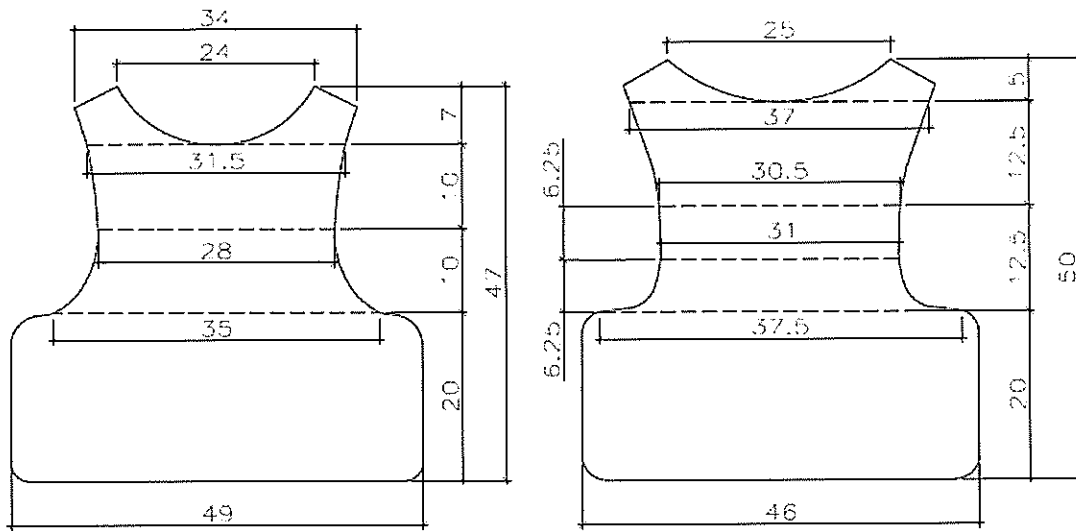
# LARGE



FRONT

BACK

# EXTRA LARGE

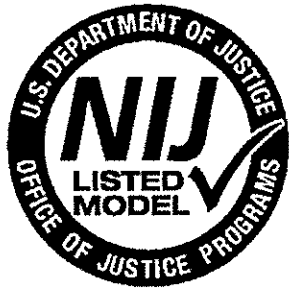


FRONT

BACK

## 8. IDENTIFICATION TAGS

A tag must be attached to the internal face of the Life Saving Bullet Proof Vest outer shell, to the Base Vest Ballistic Panels Covers and to each of the Floating Material Insert Covers to inform, at least: name of manufacturer, registered mark, part number, model, NIJ - level of protection, size, date of manufacture (month and year), location of manufacture, and special instructions for handle care, as shown below.



NIJ Standard-0101.06

The NIJ label, as depicted above, is essential as it serves as a certification for ballistic quality testing."

## 9. SAMPLE

If requested a sample of the Life Saving Bullet Proof Vest must be presented for appreciation about fully conformity with the specifications.

## 10. MANUAL

A technical manual will be requested in both languages Portuguese and English, which must be delivered together with the sample / first delivery.

- General Information;
- Equipment Description;
- Major Components;
- Theory of Operation;
- Vest assembly;
- Storage and Maintenance Instructions; and
- NSN and Part Number of each part.

MARCELO RIBEIRO DE FIGUEIREDO

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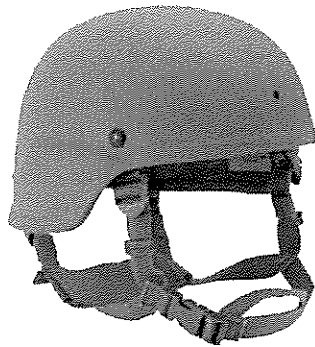
**MARINHA DO BRASIL**

**COMANDO DO MATERIAL DE FUZILEIROS NAVAIS**

**ESPECIFICAÇÃO TÉCNICA DO CAPACETE BALÍSTICO DE TROPA NÍVEL III-A SEM ACESSÓRIOS  
(em inglês)**

**SUBJETC: BALLISTIC HELMET FOR GROUND TROOPS (MULTI-LAYER HIGH PERFORMANCE HELMET) - Level of Protection IIIA, according to NIJ Standards**

**Helmet Styles**



**ACH Standard**



**ACH Mid-Cut**



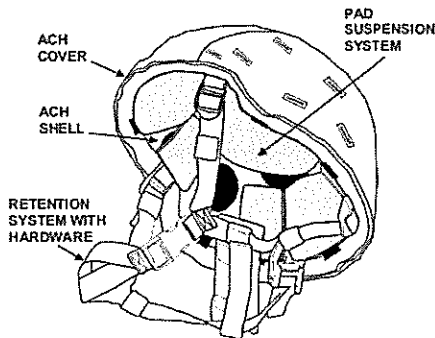
**ACH High-Cut**

**1. GENERAL**

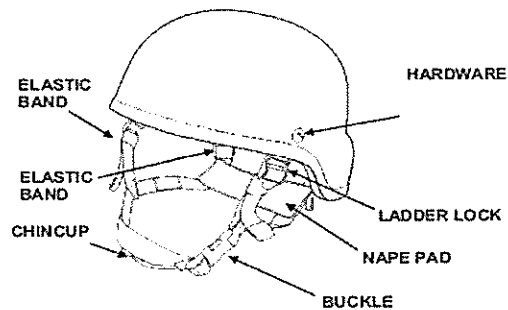
1.1 - These specifications define the technical requirements for the manufacturing of a helmet to protect the user's head against impact and ballistic hazards, for use by ground troops units of the Brazilian Navy.

1.2 - The helmet shell is made of a multi-layer construction. The layers are a combination of high-tenacity ballistic aramid fiber.

1.3 - The helmet includes a ACH shell, pad suspension system, retention system with hardware, all designed to reduce the effect of impact, to enable proper ventilation to the user's head and can be adjustable and replaceable.



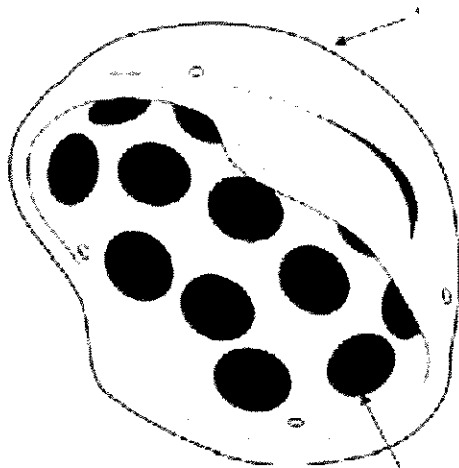
**Major Components**



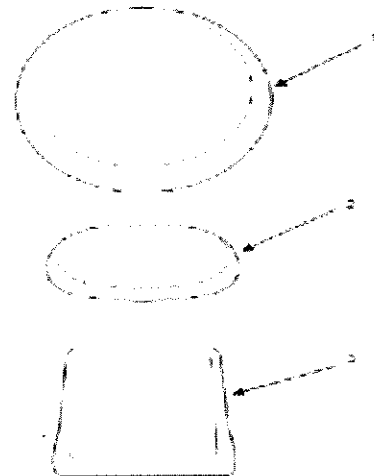
**Retention System**

1.4 – The pad suspension system is fully adjustable, provides space for deformation caused by projectiles and to allow increased ventilation. Alternate pad configurations are allowed to obtain a better fit or more comfort. The system pad must provide the following:

- Replacement pads fit all FAST, Sentry and ACH style helmets;
- Easily secures with VELCRO® brand fasteners into the helmet shell;
- Lightweight EPP pads are:
  - layered with LDV closed-cell comfort foam, which seals out air, dust and moisture;
  - wrapped in breathable, moisture-wicking outer fabric, ensuring low moisture- absorbency in a dual-density comfort material that is simple to clean;
  - unaffected by temperature, altitude, or moisture;
  - pre-molded to the shape of a head; and
  - repositionable to suit individual comfort; a full coverage layer ensures protection, regardless of pad configuration.

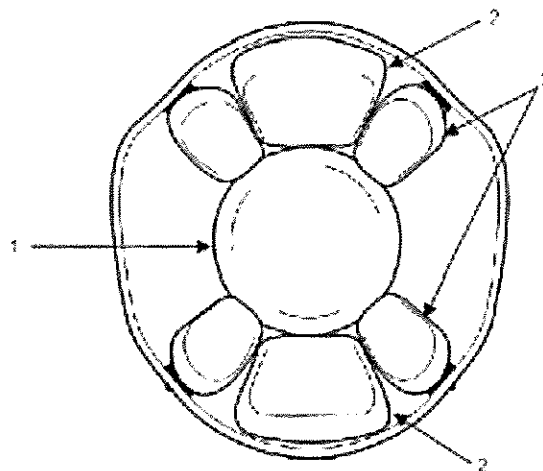


**LEGEND**  
 1 Helmet Shell  
 2 Hook Disks



**LEGEND**  
 1 Circular Crown Pad (1 per helmet)  
 2 Circular Head Pad (4 per helmet)  
 3 Trapezoidal Pad (2 per helmet)

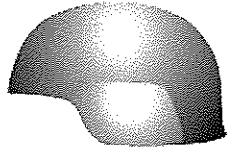
Front of Helmet



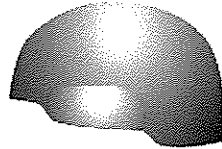
**LEGEND**  
 1 Circular crown pad (1)  
 2 Trapezoidal pads (2)  
 3 Ovaloblong pads (4)

1.5 – The helmet has three models: LOW CUT, MID CUT, HIGH CUT. The helmet designed with low center of gravity and configuration which extends protection to the neck and ears areas (according to model).

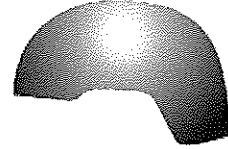
*Regular cut*



*Mid cut*



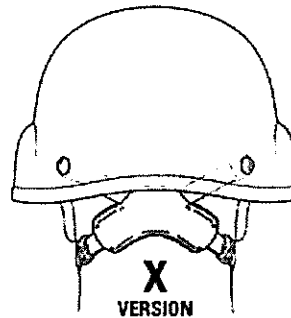
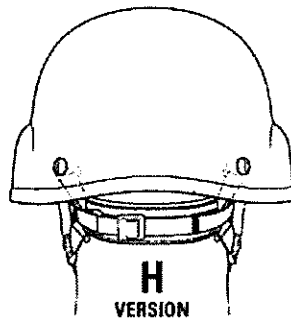
*High cut*



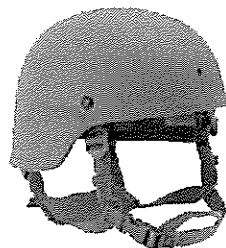
1.6 - The size and harness of the helmet should allow flexibility in the head size to facilitate the adjustment for all users.

1.7 - Helmet should have system compatible with current night vision goggles (NVGs) and communication packets.

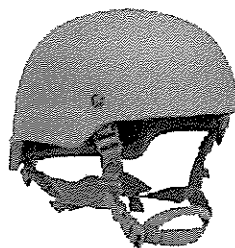
1.8 - Chinstrap retention system with a four-point design in order to provide improved stability (the retention system shall be colored the same color as the exterior of the shell - **NATO Green**). There are two models of Armor Nape Pad: H-version of Nape Pad and X-version of Nape Pad, as shown below. The model to be supplied is the H-version of Nape Pad.



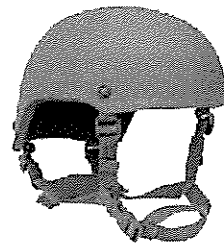
1.9 - The photos below present the standard ballistic helmet for the Brazilian Navy.



**ACH Standard**



**ACH Mid-Cut**



**ACH High-Cut**

**2 - THE HELMET AND ITS COMPONENTS**

2.1 - The shape of the helmet is U.S. ACH, in accordance with MIL-H-44099A (latest revision).

2.2 - The **weight** of the complete helmet will not exceed 1,500 grams (ACH shell, pad suspension system, retention system with hardware).

2.3 - The **color** is **NATO Green** non reflective (helmet must be painted with this color, without any type of cover). The following covers are available for the ACH: a universal camouflage, reversible woodland/desert cover and a white (Arctic) cover, which **WILL BE PROVIDED ONLY UPON REQUEST**.

**Materials**

Item	Material
Helmet shell	Composite Aramid and/or UHMWPE
Edge profile	Neoprene rubber
Pad suspension system	Item 1.4
Webbing chinstrap	Polyester/Nylon tape + leather chincup
Side buckle	PP & TPR
Bolts	Stainless steel

**3 - CONSTRUCTION OF THE SHELL**

3.1- The shell is manufactured by carefully arranged shaped cuts of the materials according to the shell's shape.

3.2- The shell is made of hybrid materials and Ballistic aramid fibers in a composite matrix.

3.3- The helmet has only four holes for fixing the Chinstrap retention system.

**4 - PROCESSING THE SHELL**

4.1- The shells edge will be cut as an integral part of the molding process.

4.2- The edge profile, made of neoprene rubber (the edging shall be colored the same color as the exterior of the shell - NATO Green), will be adhered in a form that it will enable coupling in the middle of the rear side.

**5 - PROTECTION AND DURABILITY OF THE HELMET**

**Certification**

Ballistic performance should be tested and approved by a recognized Laboratory, in accordance with NIJ Standards 0108.01, 0106.01 and 0101.06 / 0101.07 Level III-A. The helmet must stop .357 SIG FMJ FN,125 grain , and 0.44 Magnum SJHP, 240 grain. Ballistic performance should be tested and approved test laboratory(which must have nij approval letter and must be listed in: <https://www.justnet.org/compilant/NIJ-approved-labs.html>).

A Certificate paper must be presented to ensure that the helmet was tested and approved according NIJ Standards.

**5.1 - Ballistic performance:**

The ballistic helmet is designed to stop the following bullets in accordance to the referred NIJ Standards:

NIJ LEVEL	Bullet	Bullet weight (grains)	Max. Velocity ft/sec (m/sec)	No. of strikes
III-A	.357 SIG FMJ FN	125	1470 (448 )	4
III-A	.44 Mag. SJHP	240	1430 (436 )	4

**5.2 - Fragmentation performance:**

The ballistic helmet is designed to offer, at least, protection in accordance with NIJ / STANAG-2920 / MIL-STD 662 (latest revision) as follows:

Fragment Simulated Projectile weight (grains)	V 50 ft/sec (m/sec)
17	2.200 (670)

**5.3 - Low velocity shock absorption:**

The ballistic helmet is designed to offer low velocity impact protection in accordance with EN 397 (latest revision), from the European Committee for Standardization:

Striker shape	Striker mass (kg)	Drop height (mm)	Residual force (kg)
50mm Hemisphere	5.0	1000	Less than 5.0

**6 - WARRANTY**

It is requested a ten (10) years warranty for the helmet’s ballistic performance and the shell. The harness and the non-ballistic components should be warranted for at least two (2) years.

**7 - QUALITY ASSURANCE OF INDUSTRIES**

Certificate ISO 9001:2015 and fully complies with its standards.

**8 - HEAD/HELMET SIZING CHART AND PROPORTION TO OBTAIN**

Size	Head circumference (inches)	(cm)	Proportion to obtain
MEDIUM (M)	22.05 to 22.83	56 a 58	40%
LARGE (L)	22.83 to 24.02	58 a 61	40%
X-LARGE (XL)	24,02 to 25.98	61 ,a 66	20%

**9 - IDENTIFICATION**

A tag must be attached to the internal face of the helmet to inform, at least: name of manufacturer, Local of manufacturer, part number, model, level of protection, serial number, size and date of fabrication (month and year).



NIJ Standard-0101.06

**10 - SAMPLE**

If requested a sample of the helmet must be presented for appreciation about fully conformity with those specifications.

## 11 - MANUAL

A technical manual will be requested in both languages Portuguese and English, which must be delivered together with the sample / first delivery, providing at least the following informations:

- General information;
- Equipment description;
- Major components;
- Theory of Operation;
- Storage and Maintenance Instructions; and
- NSN and Part Number of each part.

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Gerente de Meios de Equipagens Operativas  
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