



MLA Defender Hybrid Public Order Helmet Product Specification

Product: Defender Hybrid Public Order Helmet

Product Code: HT-D-HYB-COLOUR-SIZE

Colours Available: White, Yellow, Green, Blue, Red and Black

Standards: HOSDB 21/04

Sizes Available: 00-6

1. **General Product Description**

- 1.1 The Defender Hybrid Helmet is designed for use by Police, Prisons and other Public Security Personnel when engaged in controlling the actions of persons involved in actual or potential public order disturbances.
- 1.2 The Home Office Scientific Development Branch's Protective Headwear Standard for UK Police 2004 21/04 requires that helmets should meet specific performance levels for:
 - Coverage (both Helmet and Visor)
 - Peripheral Vision
 - High and Low Velocity Impact
 - Penetration
 - Impacts to the Visor
 - Burning Solvent Test
 - Flammability
 - Ingress of Liquids
 - Acoustics
 - Helmet Retention
 - Weight
 - Visor deformation under impact
 - Pellet Impacts to the Visor (6mm ball)
 - Visor misting
 - Visor resistance to solvents

The Defender Hybrid meets, or exceeds, all of these criteria and has been tested, accredited and certified to 21/04 by the HOSDB



- 1.3 The Helmet is not designed to offer protection from ballistic attack.
- 1.4 The Helmet consists of an outer shell with hearing apertures and fittings, an inner liner with comfort padding, a hinged clear visor and adjustable chinstrap with cup.
- 1.5 The visor may be swung upwards over the outer shell and clear of the face. However, whenever possible it should be worn with the visor in place in front of the face with the chinstrap fastened and correctly adjusted (A rubber seal fitted between the visor bar and the outer shell to prevent liquid ingress to the face is only effective with the visor in the down position)
- 1.6 The Helmet is presently available in sizes 51-64cm (MLA sizes 00-6); weight approximately 1.6kg
- 1.7 Manufacture is carried out in a BS EN 9001:2000 approved facility.

2. **Technical Specifications**

2.1 **Outer Shell**

- 2.1.1 The Defender Hybrid uses the shell of the original Defender as certified by PSDB in 2009. The GRP (Glass Reinforced Plastic) outer shell consists of a surface of Class 1 Fire Retardant Gelcoat to BS2782. Beneath this is a laminate of some 28 components made from 300gsm Chopped Strand Mat to ISO 3374:1990 and Glass Fibre 280gsm biaxial woven roving material. All are impregnated and bonded with Flame Retardant pre-accelerated Polyester Resin to BS476 Part 7.
- 2.1.2 Two sizes of outer shell are used to cover the range of head sizes. The large shell is used for sizes 3 to 6 and the small shell for sizes 00 to 2.
- 2.1.3 An additional piece of GRP roving mat is added on top of the existing layup, prior to cure, in the position specified without any additional resin added. In addition, see enclosed GRP lay up plans later in this file.



2.2 Inner Lining

- 2.2.1 The inner lining of the Defender Hybrid is identical to the one used in the original Defender. Fitted within each of the two outer shells is a correspondingly sized inner liner moulded from Polyurethane Foam to BS5775; BS4370 and AMS9048/2. The large liner is used for sizes 3 to 6 and the small is used for sizes 00 to 2.
- 2.2.2 The helmets are subsequently sized by shock absorbing memory foam bands to mould the internal lining to the user's head.
- 2.2.3 The helmet liner includes a flame retardant polyester breathable spacer fabric which conforms to standard BS EN ISO 14116:2015, this eliminates pressure on the forehead and reduces perspiration. The spacer fabric is treated with an anti-viral coating to protect against bacteria conforming to standard ISO 18184:2019 (2).

2.3 Visor

- 2.3.1 The visor is manufactured from 3mm Polycarbonate to DIN53445; DIN53452; DIN53453; ISO180; DIN 53454; DIN 53455; DIN53457; DIN 53479 and DIN ISO 2039.1. Cut by CNC machine to give smooth bevelled edges.
- 2.3.2 The visor is anti-mist/ anti-viral lacquer coated and tested to be within SDC limits for thickness, adhesion, anti-fog and haze. Tests have been conducted on the anti-viral.
- 2.3.3 The visor is secured to a single aluminium visor bar assembly with 4/5 cap stem rivets as per below specification. The rivets are spaced equally across the blade 76mm apart. The blade incorporates a sturdy rubber moulded surround to form a seal between the top edge of the visor and the outer shell of the helmet. The visor/visor bar assembly is then secured to the outer shell at two pivot points using a lock-nut combination. The visor rubber is extended in length and the visor bar amended to fit flush against the extended rubber. The rubber is secured by VHB tape and through the visor bar fixings.



2.3.4 The aluminium Visor Stop is located in front of the audio filter and is fixed through the chin strap hank nut fixing point. It ensures when any force is applied to the front of the visor the stopper is positioned to protect the users face.

2.4 Chin Strap

2.4.1 A webbing chinstrap assembly (with chin cup) is fitted to the inside of the outer shell at two points using an internally linked hank nut assembly. (See Annex 22) The two halves of the chinstrap assembly are joined and adjusted for fit by means of a side lock quick release buckle.

2.4.2 The anti-chafe facings to the strap assembly are made from Fire Retardant fabric-backed Vinyl.

2.5 Optional Neck Guard

2.5.1 The Helmet is fitted with a one-piece neck guard constructed from a sandwich of 5mm thick Plastazote foam and 13mm thick RX/200 medium density foam; all covered with Fire Retardant fabric-backed Vinyl. This is attached with 50MM FR Hook & Loop. Or fixed by four rivets.

2.6 Hearing Apertures

2.6.1 The helmet features an aluminium vent over each ear. Each vent contains two layers of gauze, which allow the passage of sound whilst preventing the ingress of liquids.

2.7 Yoke

2.7.1. The area of the inside rear half of the helmet between the polyurethane inner liner and the neck guard is fitted with a yoke which acts as a comfort pad to the nape of the neck and the side of the face. The yoke is cut out around the ear mesh to ensure good sound transfer and maximum wearer comfort. The yoke is constructed from 10mm thick poly foam which is sandwiched on each side by a layer of proban- treated cotton modal combined with 6mm foam. Strips of hook self-adhesive Velcro stud to the back of the yoke. It is attached to corresponding loop fitted to the inside of the shell. In order to secure the model to the poly foam and Velcro strips 7 rivets are used as per the attached photograph.

Product Image



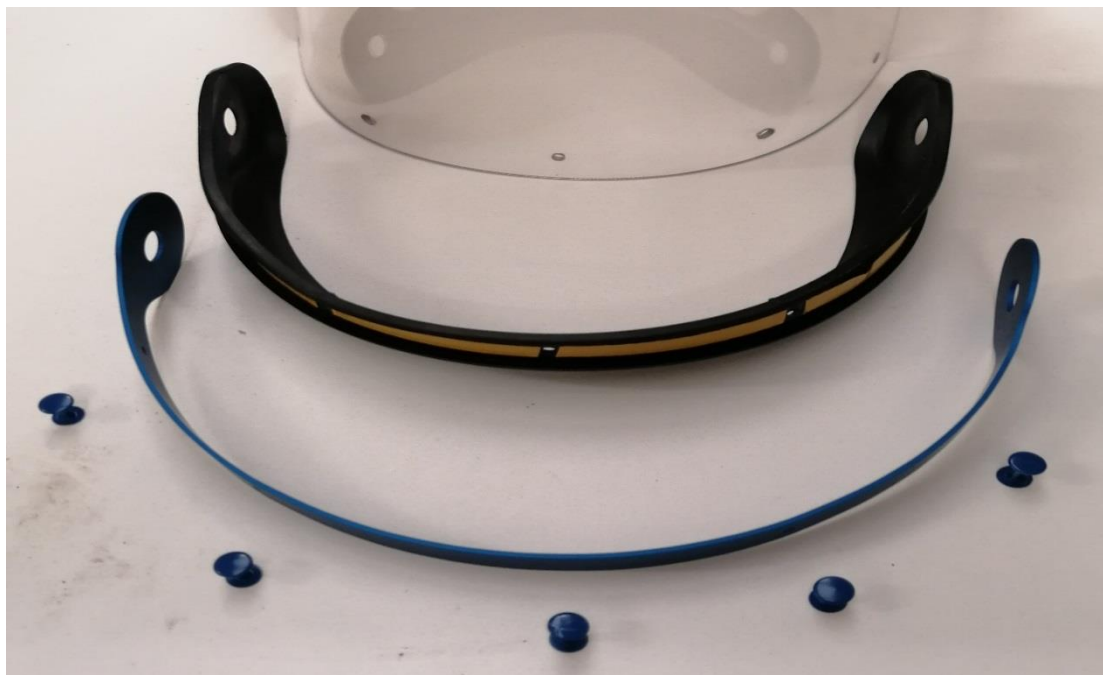
Colours Available



Technical Specifications

Further Product Images

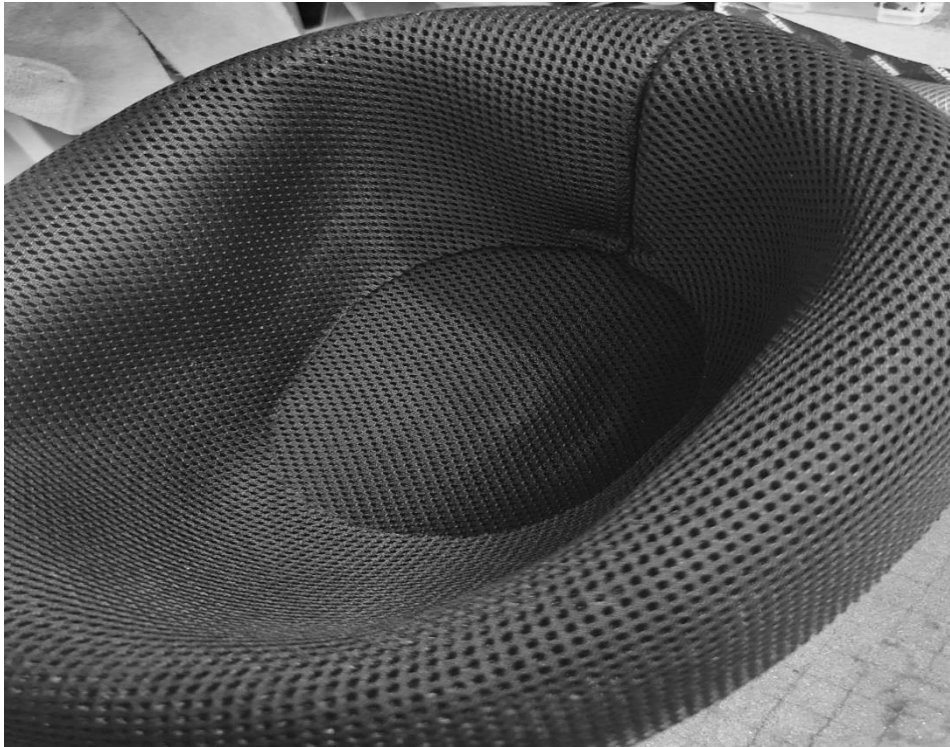
2 – 3 DEFENDER HYBRID PO HELMET VISOR PIVOT ASSEMBLY.



3 - 3 DEFENDER HYBRID PO HELMET
VISOR BAR ASSEMBLY BLOWN VIEW.



Polyester Spacer antibacterial Fixed lining FR



Hook & Loop neck guard assembly





Public Order Helmet Sizing Chart



Use a flexible tape to measure the circumference of the head at the largest point (usually around 25mm (1”) above the ears. Round up if between sizes.

<u>Helmet Size</u>	<u>CM</u>
Size 00	51cm
Size 0	52cm
Size 1	53 – 55cm
Size 2	56 – 57cm
Size 3	58 – 59cm
Size 4	60 – 61cm
Size 5	62 – 63cm
Size 6	64cm
<u>HYBRID GUARDIAN HELMET</u>	
Size 7	65-66cm
Size 8	67-68cm



Packaging

- Each helmet will have a layer of recycled bubble wrap around it and then be placed inside a carton.
- Adhesive label affixed to the front with product code and size printed
- Packed in multiples of 4 inner cartons per outer carton.

Lifespan:

In normal use, assuming no damage, the helmet should be replaced after 7 years.

Storage:

When not in use, the helmet should be stored in a dry (not damp), airy place on an open shelf away from direct heat and sunlight. To maintain the optimum visor seal, the Helmet should always be stored with the Visor in the down position.

For more permanent storage, and before issue to the intended user, the helmet should be kept in its original packaging in dry (not damp) airy conditions on a shelf away from direct heat and sunlight.

Care Instructions:

To clean the outer shell of the helmet, use a mild liquid detergent in water, and dry with a soft cloth. DO NOT rub. DO NOT use abrasive powders or creams, which can scratch the surface of the shell. DO NOT USE SOLVENTS.

The visor may be cleaned using a soft microfibre cloth. DO NOT USE SOLVENTS.

The inner padding, chin cup and strap can be sponged gently with a damp (not wet) cloth and a mild detergent or disinfectant (NOT BLEACH). Allow to dry at ambient temperature before re-using the Helmet.

DO NOT USE SOLVENTS

Helmet Accessories:

- Pinlock
- Tear off strip
- Torch Kit
- Vinyl Reflective Insignia
- Helmet Bag