

**DSE**   
International



**Defender**

**Bomb Suit**

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# 1. GENERAL DESCRIPTION

The **Defender Bomb Suit** is a complete EOD ensemble comprising trousers; jacket with sleeves and collar, three part (neck, chest and groin) blast plates; hand mitts; over boots; helmet with visor, comfort liner, search light, ventilation/demister and integral communications; air blower, cooling suit, hardwire or wireless communication system, back protector and carry bags.

The suit is constructed from Nomex® Delta T, ripstop, certified flame retardant material which is available in a selection of colours. Other materials are available on request.

The zonal armour system provides optimum protection with maximum flexibility and comfort. The highest protection level is afforded to life critical areas of the body with V50 ranging up to 1,900 m/sec. These levels of protection can be adjusted to suit individual client needs.

Key features of the **Defender Bomb Suit** are:-

- Zoned armour system.
- Integral groin/lower abdomen protector provides enhanced protection.
- Three part blast plates for increased protection to neck, chest & groin.
- High performance helmet with visor, integral ventilation and communications.
- Two part knee joints for maximum flexibility and manoeuvrability.



## 2. COMPONENTS



Adjustable trousers  
with braces and over  
boot inserts



Trousers rear with  
integral groin  
protector and zip  
closures



Jacket with integral  
collar, hand mitts and  
quick release system



With three part blast  
plates fitted (neck,  
chest and groin)



Quick release system  
allows rapid jacket  
removal



Helmet with comms,  
visor, light &  
demister



### 3. FRAGMENTATION PERFORMANCE

Description	V50 (STANAG 2920 17gr FSP)
Jacket Front	600 m/s
Jacket Rear	450 m/s
Collar	450 m/s
Sleeves	450 m/s
Hand Mitts	450 m/s
Neck/Collar Blast Plate	1,900 m/s
Groin Blast Plate	1,900 m/s
Trousers with Thigh Inserts	680 m/s
Trousers with Shin Inserts	650 m/s
Knee	800 m/s
Integrated Groin Protector	600 m/s
Rear of Trousers	450 m/s
Overboots	450 m/s
Helmet	700 m/s
Visor	750 m/s

The Defender Bomb Suit V50 protection levels have been tested in accordance with STANAG 2920 (17gr FSP) protocols. All testing has been carried out by independently authorised and accredited test centres.

## 4. HELMET

The Defender Bomb Helmet is a closed face bomb helmet with excellent fragmentation and blast protection. The lightweight helmet comprises shell with liner, two point harness, removable visor, low noise head mounted cooling fan with adjustable speed, head torch and provision for fitting of wired or wireless communication system. The helmet includes an integrated, rechargeable battery system to power fan & accessories.

Helmet is constructed from 100% para-aramid fibres formed into a rigid matrix structure employing thermoform technology.

Helmet has been independently tested against fragments according to the NATO STANAG 2920 test protocol and against blast injury.

### Weight

Helmet Complete - 4.43 kgs (9.8 lbs)

Helmet without visor - 2.94 kgs (6.5 lbs)

Visor and fittings - 1.48 kgs (3.3 lbs)

### Fragmentation Performance

Helmet Shell – V50 700 m/sec

Visor – V50 750 m/sec

### Features

- Two Point webbing Harness anchored with ballistic, stainless steel anodised bolts
- Paint is two part textured epoxy undercoat with a tough polyurethane top-coat
- Visor protection cover



## 4. HELMET

### Customer Focused New Features embracing use of technology

- Integrated helmet mounted demisting fan with self contained, rechargeable power pack. Fan provides air movement greater than 170ltr/min. All air flow is directed to wearers forehead and visor, to reduce perspiration and build up of humidity in warmer climates.
- Fan speed adjustable from 10-100% to allow reduced air flow when less necessary. Battery pack provides over 5 hours continuous operation at full speed between recharges.
- RD40 Military Standard Grade particulate and vapour filter fitted. Filter is replaceable without the use of tools.
- High Intensity LED torchlight beam fitted above visor, with adjustable beam height and self contained batteries.
- Removable, washable head liners fitted for wearers wearer comfort and hygiene.
- Helmets come complete with a helmet padding accessory system for custom fitting of helmets for each wearer.
- Helmet fitted headphones and microphone for communication with supervisor using USI noise cancelling VOX or PTT communication systems. (Communication systems may be wireless or wired).
- No wires or hoses necessary between helmet and bomb suit.

### Choice of Helmet Finishes

- Range of international military, security and law enforcement colour finishes available. IRR paint finishes also available upon request.



## 5. COOLING SUIT

The Cooling Suit is designed to offer a safe and cool environment for people who must maintain a high level of efficiency and concentration under extreme heat. The system is ideally suited for personnel involved in EOD/IEDD operations.

The Cooling Suit uses ice cold water to remove body heat produced during strenuous work, especially in hot environments. It requires no hazardous pressurised canister or toxic cooling agents, the Cooling Suit also offers protection against heat and flash fire. Testing of the Cooling Suit on the effects of over pressure, fragmentation, ballistic, body impact and heat have shown it to be suitable for wearing under bomb suits, chemical suits and many other applications where body heat removal is desirable.

### Construction

It is a one piece fire resistant garment with cooling tubes and external connectors, and is worn as close to the body as possible to obtain the maximum benefit. It has a head hood with connectors, which connect to corresponding connectors on the neck of the garment. There is an external pump and ice/water bottle container which is housed in a self contained carry bag attached to the left hand side of the suit. The cooling suit is made from machine washable fire retardant Nomex.

### Performance

Heat removal Rate: 270 watts (full suit).  
Endurance min.: 45 minutes at 35°C (95°F).

### Weight

Weight of Cooling Suit: 1.3Kg.  
Weight of Battery: 0.9Kg.  
Weight of Pump, Control Unit & Bottle: 1.5Kg  
Suit, battery, pump, control unit,  
2 bottles & storage bag: 4.6Kg.

### Cooling Suit Pump

Flow rate: Fully adjustable up to a maximum of 500 ml/min. Self contained NiCad rechargeable battery power supply. Running time at normal flow rate: 2 hours and 30 minutes.

The cooling pump is powered by 12 volt 2.2 Amph rechargeable batteries.





## 6. COMMUNICATION SYSTEM

The Defender Bomb Suit communication system consists of two integrated components: helmet communications and a hardwire communication system. The PTT hardwire communications is fully compatible with the Defender Bomb Suit Helmet.

### **Helmet Communication System**

This consist of a helmet mounted headset assembly with 2 ultra low profile earpieces, a low profile microphone and short cable with Nexus plug at the end of it.

### **Hardwire Communication System PTT**

The Defender Bomb Suit communications system provides full duplex communications between EOD Commander and EOD Operator over 100m of field cable, and is designed for simplicity in use and ease of deployment.

The Integrated Helmet Communications Headset consists of twin ultra low profile earpieces and a noise cancelling microphone, which connects to the common user unit via a rugged 80mm Press To Talk (PTT) unit with clothing clip. The helmet connector is a quick dis-connect Nexus plug and socket, whilst the 80mm PTT connection to the user unit is via military spec amphenol plug.

The EOD Commander's headset is a military style robust single sided headset with flexible boom microphone and a mesh head strap, an in-line PTT with clothing clip.

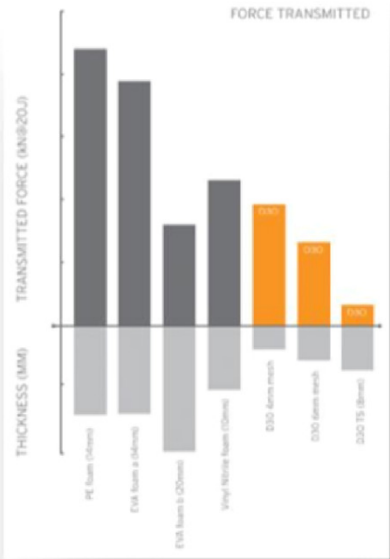
The user unit is common to both EOD Commander and EOD Operator, powered by standard AA batteries for maximum flexibility, the unit is turned ON whenever a headset or 80mm PTT unit is connected. Each unit has user volume control, LED power ON indication and mil spec amphenol socket for headgear connection. The easy connect line termination posts are suitable for screw-down connection of cable, or banana plug use.



# 7. BACK PROTECTOR



**CE certified EN1621-2 Level 2**  
**Thickness 18 mm**  
**Breathable through Air Wave technology**  
**Waterproof**  
**Non-toxic**  
**Weight 505g**



# 8. WEIGHTS

Description	Weight (kgs)
Trousers	7.7
Blast Plates (set incl. collar/neck, chest & groin with carrier)	6.0
Jacket with Collar and Hand Mitts	10.5
Overboots	1.0
Back Protector	0.8
Helmet with Visor, Headset Communication, Search Light and Comfort Liner	4.3
TOTAL WEIGHT	30.3



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