



TECHNICAL FOAMS  
AND INSULATIONS  
FOR MILITARY APPLICATIONS

**ZFoam** | DEFENSE

# ZFoam

Innovative foams  
High-tech insulators  
Customization

Technical foams and high-tech insulations are engineered materials designed to offer a wide range of characteristics, such as flexibility, durability, shock absorption, insulation, and lightweight properties. These attributes make them ideal for various defense applications.

CONVERSION PROCESSES AVAILABLE:

- ✓ **CNC cutting systems (i.e. water jet 3 and 5 axis)**
- ✓ **Routing**
- ✓ **Fabric to foam lamination (PES, PA, kevlar, aramide)**
- ✓ **Thermoforming**
- ✓ **Printing, engraving and branding**
- ✓ **Adhesive coating**

Advantages of our high-performance military foam grades:

- ✓ **Lightweight and versatile:** technical foams are exceptionally lightweight, enabling the development of portable and easily transportable defense equipment and materials.
- ✓ **Impact absorption and vibration dampening:** shock and impact absorption, safeguarding sensitive equipment and military personnel from damage during high-intensity operations.
- ✓ **Thermal insulation:** provide excellent thermal insulation, protecting equipment from extreme temperatures and preventing condensation inside sensitive electronic devices.
- ✓ **Water resistance:** some grades are water-resistant or even waterproof, ensuring equipment remains functional in wet or submerged conditions. Also resistant to chemicals, fuels and oils.
- ✓ **Wide temperature window:** from -50 to + 180°C (foams) and up to 1200°C (special insulations).
- ✓ **Extended durability** even in extreme climate conditions.
- ✓ **ESD protection:** conductive, static dissipative and antistatic grades.



Some of our products comply with **NATO, DEF STAN and MIL specifications**, including explosive compatibility.

## CASES AND FLIGHT CASES



Specialized cases designed to safely store, transport, and protect weapons and equipment. These cases typically include custom-cut foam inserts that securely hold the items in place, preventing damage during transit and ensuring a safe storage. Cases are built with durable materials (hard plastic, aluminum or composites), mounted with easy open latches and air pressure release valves.

- ✓ Waterproof, airtight and resistant to dust, corrosion, fuel, chemicals and impacts (IP 67 available)
- ✓ The foam inside the case is often available in different colors, making it easy to identify missing or misplaced items.
- ✓ Marking or labelling for specific items are available.
- ✓ Protecting weapons, guns and rifles, night vision equipment and drones.
- ✓ Spare parts sets for aircrafts and land vehicles.

## TOOL AND SPARE PARTS CONTROL



Tool control made of foam is a system used in various industries to organize and secure tools, equipment, and spare parts. The foam inserts are precisely cut to match the shape and size of each item, creating a snug and secure storage space. Each tool has its designated space, making it easy to locate and access items quickly. Labelling by laser or ink printing (QR, bar codes and descriptions) is available.

- ✓ Foreign object damage (FOD) in aerospace and aviation industries by ensuring that no tools or loose objects are left behind in sensitive areas.
- ✓ Visual management by two colors combinations foams.
- ✓ Productivity and efficiency improvement: operators can quickly identify the tools.
- ✓ Purity and durability: our high-performance foams expanded by nitrogen have no chemical residues, are durable and resistant to oils, fuels and lubricants.

## ELECTRONICS & COMPUTER PROTECTION



The need for reliable, efficient, and versatile electronic packaging solutions is greater than ever. Electronic components, devices, and systems are becoming smaller, more sophisticated, and sensitive to environmental factors, ESD and EMI. Some specialized foams offer a range of properties that are essential in protecting electronic components and ensuring their optimal performance.

- ✓ Mechanical protection: shocks, impacts and vibrations absorption during transportation and operation.
- ✓ ESD protection: conductive, static dissipative and antistatic grades with no dependence of the environment, humidity and temperature.
- ✓ EMI/RFI Shielding: special grades prevent these external influences from affecting sensitive electronic systems.
- ✓ Sealing and gasketing: protection of electronic components from environmental factors, such as moisture, dust, and chemicals.

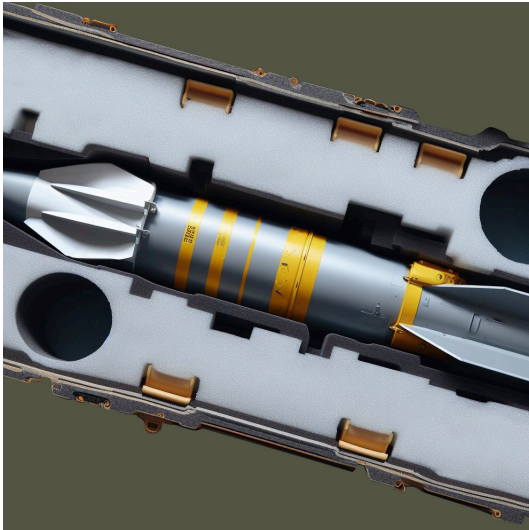
## BODY ARMOUR / PERSONAL PROTECTION



Foam inserts in body armor and personnel protection play a crucial role in improving the comfort and effectiveness in military and law enforcement equipment, by reducing the risk of injuries caused by impacts and falls.

- ✓ Impact absorption: dissipation of the energy generated from impacts.
- ✓ Comfort: padding improves comfort for extended periods of use.
- ✓ Ventilation: materials designed with ventilation properties to improve air circulation, reducing heat buildup.
- ✓ Applications: knee, elbow and shoulder pads, trauma liners for helmets, soft lining of bulletproof vests.

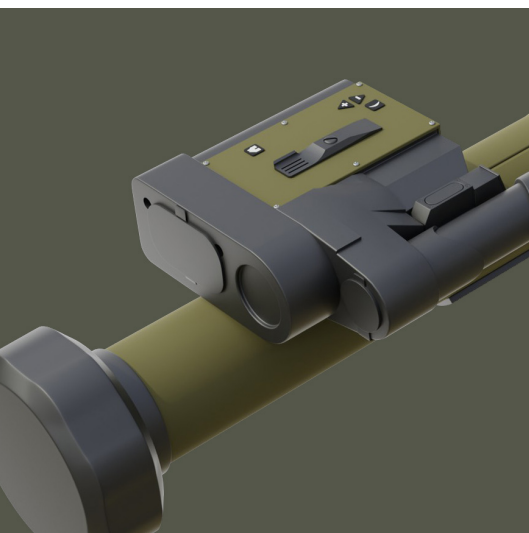
## MISSILE CRADLES



Missile cradles securely hold the missile in place during transportation and storage. They are designed to absorb and disperse impact forces, protecting the missile from damage.

- ✓ Insulation: foams help to isolate the missile from external vibrations, shocks, and temperature variations, ensuring the missile remains in optimal condition.
- ✓ Cost-Effective: high performance and durability at accurate costs, can reduce maintenance and replacement costs.

## SHOULDER LAUNCHED MISSILES



Portable missiles are considered an important weapon for infantry troops. Front and rear tube protection made of special foams are customized to improve the packaging of the tubes and the gas outlet.

- ✓ Customization with no investment in injection molds.
- ✓ Complicated geometries available
- ✓ Fire retardant grades.

# AMMUNITION AND EXPLOSIVES PACKAGING

STANDARD	MOD GRADE
DefStam 81-116/3 Type GP	Grade A Grade B Grade C
DefStam 81-116/3 Type QX	Grade A Grade B Grade C
DefStam 81-124/23 Type QX	
DefStam 93-101	
DefStam 81-125/3	
DefStam 93-117	
DefStam 81-119	
UsMil-c-26861	

Technical foams offer a unique combination of properties that enhance the security and reliability of munition fabrication, storage and transport. Special grades available for explosive contact that comply with defense standards.

- ✓ Protection: ammunition and explosives are securely contained, preventing accidental ignition or damage.
- ✓ Thermal insulation: protection of the explosives from temperature variations that can affect their stability.
- ✓ ESD protection: conductive or anti-static foams minimize the risk of discharge-induced ignition.
- ✓ Customization: precise conversion to fit the specific dimensions and shapes of different munitions.

# COMBAT VEHICLES

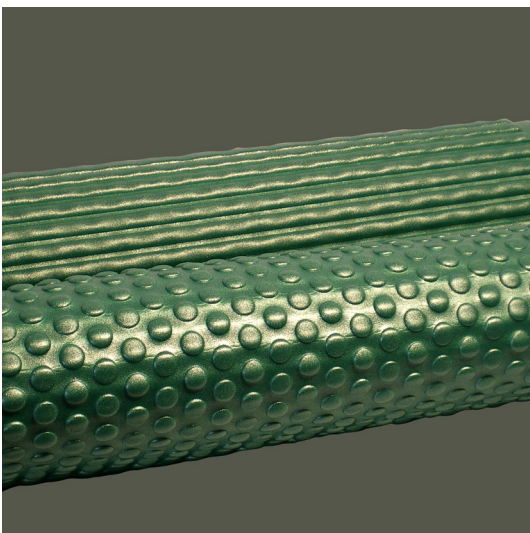


Lining of critical areas of combat vehicles to enhance the safety and comfort, contributing to crew protection, noise reduction, and shock absorption.

In high-risk environments where fuel tanks are used, such as military vehicles and aircrafts explosion suppressant foams mitigate the risk of explosions in the event of an impact or accident.

- ✓ Crew protection: soft lining helps protect the vehicle's crew from injuries during sudden impacts, collisions, or explosions.
- ✓ Blast mitigation: enhancement of the blast mitigation by absorbing and dispersing the shockwaves and energy generated by explosions.
- ✓ Thermal insulation: reduction of the infrared signature of the vehicle.
- ✓ Applications: seating areas, thermal insulation of engine compartments and exhaust, impact absorption elements.

# SLEEPING MATS



Military sleeping mats are pieces of equipment used by military personnel during field operations, training exercises, and deployments.

These mats are designed to provide soldiers with a comfortable and insulated surface to sleep on, even in challenging outdoor conditions.

- ✓ Insulation and thermal comfort: insulation against the cold ground, can prevent heat loss and protect against hypothermia.
- ✓ Portability and compactness: lightweight and easy to carry (rolled or folded)
- ✓ Durability: withstand rugged outdoor conditions, including exposure to rough terrain, moisture, and abrasion.
- ✓ Camouflage and low visibility: camouflage patterns available.



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