



**DEFENCELL™**  
FORCE PROTECTION SYSTEMS

## Introducing Defencell™, a Dual-Purpose Barrier Solution for Force Protection and Flood Control

WHITE PAPER

## One barrier. Limitless solutions.

The National Guard is revered as the nation's first-responder to natural disasters and Homeland Security operations. To support these efforts, your unit likely maintains an inventory of special-purpose barrier systems, including traditional wire mesh gabions and sandbags. These systems are often deployed in situations that are beyond their intended scope of environmental or military uses.

As a result, your unit's barriers may not meet the performance standards of specialized systems. Wire mesh gabions have been used for flood control, but they are logistically difficult to deliver due to the added weight of steel mesh. Sandbags are highly portable but require labor intensive stacking that limits their usefulness in some emergency situations.

What if you could combine the benefits of traditional gabions with the portability of sandbags?

### Introducing Defencell™ Force Protection Systems



**Defencell Force Protection Systems**, known as **TYPAR® Geocell** in the civilian market, are rapidly deployable barriers designed to significantly improve the National Guard's flexibility when responding to both federal war efforts and domestic emergencies. Developed by engineers for engineers, Defencell systems are the end-result of a decade's long investment in research, development and testing to create a multi-purpose solution for both ballistics

defense and flood protection.

These light-weight, 100% fabric barriers help remedy the logistical limitations associated with traditional gabions and sandbag systems. As the first-responder to natural disasters and Homeland Security operations, the National Guard can benefit from Defencell systems' small logistical footprint, light-weight properties, and minimal storage space requirements.

The Defencell system exceeds the barrier performance standards established by the US Army Corps of Engineers (USACE), the Defense Logistics Agency, and the U.S. Department of State's K12 (DoS-K12/M50) and European (PAS68) crash test certifications. The Defencell system has tested and passed bullet and blast trials against small arms, cannons, mortars, artillery, vehicle bombs (VBIEDs), and other fragmenting weapons.

Manufactured in the United States by Fiberweb, Inc., the Defencell system was developed to support the military during force protection and disaster relief operations. The Defencell system was created in an effort to fill the void left by manufacturers of

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**“The US Army Corps of Engineers has confirmed the Defencell systems’ effectiveness in emergency flood applications.”**

other modular wall systems by addressing the need for ease of transport and rapid deployment.

### **Defencell Force Protection System Benefits:**

- Engineered specifically for the US military
- 60% lighter than traditional gabions
- All-fabric lining poses minimal risk of secondary fragmentation
- More structurally stable alternative to sandbags
- Modular building-block design
- Application uses range from man portable defense to perimeter fortifications
- Appropriate for air-dropping
- Meets CH-47 sling load weight requirements
- First man-portable ballistics wall system

### **Proven Performance under Military and Civil Applications**

Defencell systems have undergone extensive ballistics testing, including small arms fire, indirect fire, large explosive breaching charges, and a variety of foreign arms, including Soviet 14.6 mm rounds, TNT Net Explosive Quantity (NEQ) up to 15 kg, and shaped charge weapons up to 2 kg NEQ. Units can be combined and stacked to match specific threats, including vehicular threats weighing up to 15,000 lbs.

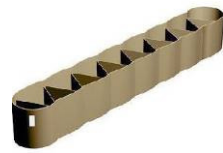
The US Army Corps of Engineers (USACE – Flood Wall Testing) and independent consultants have confirmed the Defencell systems’ exemplary performance during both emergency flood and environmental storm water protection applications. The Defencell system has been tested for storm water sediment control to ensure compliance with the EPA’s new effluent guidelines and US Corps of Engineers’ standards for Flood Water Containment. The Defencell system recently proved its real-world stability when it withstood a torrential 1,000 year flood event in Nashville, TN.

### **Innovation through Design**

The Defencell systems’ multi-cellular honeycomb design offers natural containment redundancy that eliminates the need for metal or plastic hardware. This 100% fabric solution allows the Defencell system to fit up to five times the amount of wall lengths per container over traditional gabions and minimizes the inherent risk of secondary fragmentation associated with wire mesh baskets.

The Defencell system is available in four sizes for versatility in stacking and custom wall configurations. Multiple units can be combined to create vehicle control points, fuel storage areas, chicanes, tent dividers, defensive fighting positions, perimeter fortifications, and much more. For a comprehensive list of applications, visit [www.DefencellUSA.com](http://www.DefencellUSA.com).

**“This 100% fabric solution allows the Defencell system to fit up to five times the amount of wall units per container over traditional gabions.”**



DT1 (24'')



DC2 (42'')



DC3 (65'')



DC4 (87'')

*Defencell units feature a honeycomb fabric design that allows the units to provide effective, low maintenance protection - even after years of use in harsh battlefield conditions*

## Turning Logistical Demands into Logistical Solutions



Defencell systems are engineered to reduce the logistical strain current systems place on our military forces. The Defencell system allows light-weight delivery capabilities to reduce the number of necessary flights and convoys, minimizing the risk of repeated exposure in combat environments. The Defencell system is available in a FOB in a Box kit which holds enough wall material to protect a 250' x 250' x 8' Base with a single 20' CONEX, and is light enough to meet the Chinook's 25,000 pounds.

limit for sling-load operations. The Defencell systems' absence of metal hardware allows a full 463L pallet to be air-dropped at-altitude with minimal risk of damage.

The Defencell system significantly reduces convoy requirements for land-based delivery. A single pallet of Defencell barriers weigh less than 800 pounds and can easily be transported in small trucks with sufficient units to build a 5 foot high wall more than 200 feet long.

The Defencell system is the world's first man-portable barrier wall system, allowing Soldiers and Marines to deliver Force Protection to remote locations that were previously difficult or impossible to reach by traditional ground transportation.

**“The Defencell system is available in a FOB in a Box kit which holds enough wall material to protect a 250' x 250' x 8' Base with a single 20' CONEX.”**

## Cost Savings

The Defencell system offers logistical benefits that not only reduces operational risks but also helps to reduce transportation and storage costs. A full 20' CONEX weighs roughly 20,000 pounds, yet provides the equivalent coverage area of 100,000 pounds of traditional gabions. The Defencell system takes up minimal storage space and can be safely stored for long periods of time without the risk of mildew and deterioration associated with burlap sandbags.

Contact a Defencell representative to request a custom implementation cost-analysis. A cost-comparison case study, which highlights the delivery of a single CONEX from Dover

Air Force Base, Delaware to Afghanistan, is available on [www.DefencellUSA.com](http://www.DefencellUSA.com) under the “Military Logistics” section.

## **The Logistically Advantageous Solution to Defense and Environmental Applications**

The Defencell system successfully combines the benefits of traditional gabions and sandbags to create an innovative barrier that can be used for a multitude of applications. The Defencell team understands the National Guard’s role in coordinating multiple efforts during wartime and domestic emergencies and is confident that Defencell systems can provide a dual-purpose solution that will increase your unit’s efficiency and flexibility.

For more information, go to our website [www.DefencellUSA.com](http://www.DefencellUSA.com) or contact Frank Hollowell - at (615) 847-7152 or email [FHollowell@Fiberweb.com](mailto:FHollowell@Fiberweb.com).