MODULAR BALLISTIC PROTECTION SYSTEM (MBPS) | STEFD

BACKGROUND:

The **Modular Ballistic Protection System (MBPS)** is a quickly erectable, redeployable, and lightweight ballistic protection system. MBPS provides ballistic protection for personnel and equipment in expeditionary basecamps where mobility and rapid deployment requirements prevent the immediate use of heavyweight systems like sandbags and concrete barriers. MBPS deploys very quickly with a crew of four. Currently Warfighters may be unprotected in the shelters where they work, sleep, eat, and live; MBPS is s a first step in addressing that deficiency. Multiple MBPS systems designs have been developed: MBPS TEMPER (Tent), MBPS Rigid Wall (RW) (rigid walled containers), MBPS Kitchen (field kitchens) as well as MBPS Stand Alone for use with any shelter or equipment needing protection. All MBPS designs provide the specified ballistic protection capability and can survive blast overpressure associated with these threats.

Natick Soldier Research, Development & Engineering Center (NSRDEC) is working in partnership with the Advanced Engineered Wood Composites (AEWC) Center at the University of Maine to develop MBPS technology.

BALLISTIC PANELS:

- Cost: $20 per square foot
- Weight: 3.0-4.0 lbs per square foot
- Ballistic Capability: as specified

ARMOR SYSTEM:

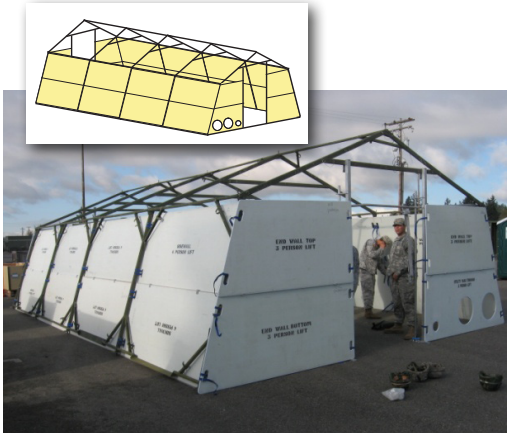
- Deployment: Capable of being installed in under one hour with four personnel – no special tools or anchoring
- Overpressure: Capable of withstanding specified blast overpressures
- Does not affect shelter integrity or mission capability

MBPS TODAY:

- MBPS developed for multiple platforms
  - MBPS TEMPER – integrates into standard TEMPER tents
  - MBPS RW - integrates onto rigid walled containers (ISO/CONEX)
  - MBPS Kitchen – integrates into containerized field kitchens
- MBPS Stand-Alone (MBPS SA)
  - Independent of platform
  - Protects shelters or other valuable targets
  - Can be used as a forward fighting position

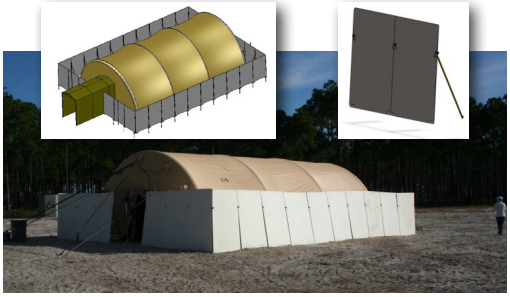
TECHNOLOGY TRANSITION:

Primary transition partner is PM- Force Sustainment Systems

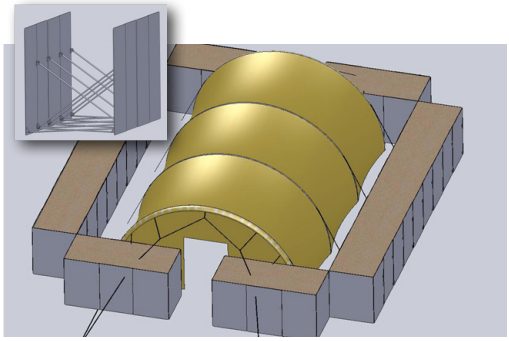


MBPS TEMPER

MBPS RIGID WALL (RW)



MBPS STAND-ALONE



MBPS 2G

UNCLASSIFIED

- MBPS is part of Force Provider – Capability Production Document
- Milestone A achieved 1QFY10
- Rapid Equipping Force (REF) Safety Confirmation and Capabilities and Limitation Record for MBPS TEMPER and MBPS RW

TESTING COMPLETED:

- Ballistic: laboratory and field testing
- Blast Overpressure: live fire
- Environmental: snow, wind, heat, cold
- Transportation
- Safety/ Human Factors
- Soldier Evaluations
- In Theater Evaluations

MODELING EFFORTS:

- NSRDEC Integrated Casualty Estimation Methodology (ICEM) model predicts significant reduction of casualties with MBPS
- Blast overpressure modeling of MBPS and expeditionary shelters

NEW EFFORTS:

- MBPS 2G:
  - Anchorless system – independent of ground conditions
  - Increased ballistic resistance
  - Earthen fill options for more permanent deployments
- Overhead Threat Protection
- Flexible ballistic panels
- High Performance Panels

POINT OF CONTACT:

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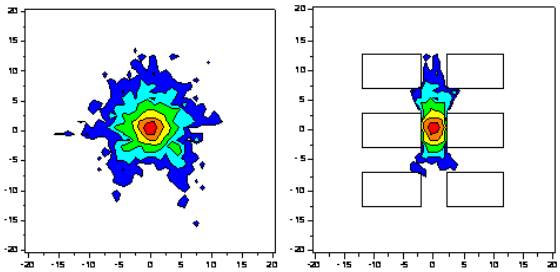
ARENA TESTING

BLAST OVERPRESSURE TESTING

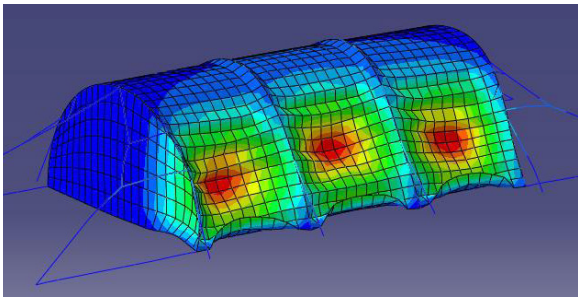
WIND LOAD TESTING



ICEM MODELING:
Left - Baseline threat, no MBPS panels
Right - With MBPS

MAN PORTABLE PANELS

BALLISTIC TESTING



BLAST OVERPRESSURE MODELING