



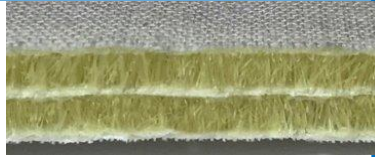
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FEAM: Dramatically Better Protection Against Harmful Vibration and Impact Energy

Technology / Capability Overview:

Unlike current seat cushion foams, Corsair's FEAM significantly attenuates harmful WBV vibration, improving pilot and crew force readiness.

- Lightweight antivibration seating for boats, helicopters, turboprops, trucks, tractors, etc.
- Anticoncussion helmet liners
- Flexible, breathable, personal protective equipment (PPE)
- Protective insoles and midsoles for footwear.
- Comfortable pain-free exercise and yoga mats
- Breathable medical padding for prosthetics and orthopedic braces



Relevance to Combatant Command or other Need:

Category* : Force Protection & Medical

- Reduces harmful low frequency < 200Hz vibrations that fatigue, injures users' lower back
- Can be customized for specific vehicle vibration signatures
- Unlike current foams, FEAM:
 - Absorbs vibration/impact energy in 3D
 - Can breathe and provide airflow to user
 - Equal or better impact protection
 - Can be made with FR nylon and Nomex
 - Operates better over wider temperature range.
 - Can handle heavier occupants (300 lbs plus)
 - Lighter weight

Past Performance of Technology and Company:

- 3rd party antivibration testing, a 3/8" FEAM prototype decreased vibration transmissibility by 55.2% vs. 1" polyurethane seating foam. Foam – 4.36 (g/g) @ 35 Hz, FEAM – 1.95 (g/g) @ 72 Hz.
- NFL HHT grant testing, Xenith Shadow football helmet w/FEAM-liner v. control: Reduced rotational acceleration in 14 of 18 impact tests up to 33%. Reduced linear acceleration (G) in 16 out of 18 impact tests up to 31%.
- With All Star Sporting Goods, made a FEAM cap for Major League Baseball umpires halved the impact energy from a 60-mph fastball.
- AES R&D used FEAM in its flag football helmet design. Their helmet has tested at a five-star rating based on Virginia Tech testing protocols.

Maturity / Scalability / Cost / Schedule

TRL : 4

- 3rd party labs tested FEAM's vibration and impact performance
- SCALING CONSIDERATIONS:

- Largest US flocking co currently makes FEAM (Berry compliant)
- Off-The-Shelf materials such as nylon, polyester, FR fibers, etc.
- Unit cost anticipated to be around current cushion levels

TIME TO MARKET WITH CURRENT FINANCIAL PLANS:

- Corsair currently produces FEAM for PPE customers in pilot line.
- Time to Market for high vol. currently estimated at 12-18 months.

TIME TO MARKET WITH FINANCIAL ASSISTANCE:

- Accelerated Time to Market to <6 months with financial help. Need \$350K-\$500K for equipment, testing & working capital.

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* Relative to Combatant Command Common Capability Needs Chart at: <https://defenseinnovationmarketplace.dtic.mil/wp-content/uploads/2020/02/CCMD-Common-Capability-Needs-Feb-2020.pdf>