

# VEHICLE OCCUPANT PROTECTION FROM BLASTS

## IMPACTS AND VIBRATION

Sea Systems Group, Inc.

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### Protective Panels for Seating and Flooring

For those who fight, work or play on air, land or sea vehicles, constant or single impacts, shocks, blasts or vibrations can cause fatigue, reduced proficiency, pain, injuries and even death. The MitiGator™ Technology is an engineered cushioning system designed to protect people and equipment from these assaults and to allow them to continue to perform their jobs or enjoy their leisure time. The MitiGator™ uses patented air control technology working with over 4,000 surfaces per square foot to dissipate energy before it is transmitted to the body and thus help alleviate the problems.

MitiGator™ material dissipates blast, impact and vibration energy while offering these additional benefits:

- **Durable material that survives millions of impacts**
- **Chemical and saltwater resistance**
- **Low maintenance**
- **Low weight**
- **Easy retrofit in seats and on floor boards**
- **Multiple sizes for every application**

### Key Benefits

Improved survival rates in blasts and impacts

Reduced injuries, chronic joint and muscle pain and fatigue

Better cognitive abilities and improved situational awareness

Increased proficiency, readiness and mission times



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## MitiGator™ Technology Mine & IED Blast Protection

The MitiGator™ system is used in more blast protection seating and flooring systems than any other technology. MitiGator™ technology limits blast force transfer by absorbing the energy normally absorbed by your body. This means fewer and less severe injuries as a result of the double assaults of a blast event. The MitiGator™ system has been validated by intensive, vigorous testing by the US Army, multiple defense contractors (US and European) as well as MGA Research Corp. This extremely durable material returns to its original configuration after sustaining the blast event, making it ideal for the second impact when the vehicle hits the ground. Incorporating MitiGator™ into the solution to improve the safety of vehicles in the event of an explosion and limiting the peak force can increase the chances that the vehicle occupants can walk away from an explosion. As a blast protection system, the MitiGator™ is in use now in over 80,000 military vehicles. Contact us to discuss how adding MitiGator to your safety program can enhance what is already being done. When a person needs to be protected from impacts, there is a MitiGator™ for that.

In simulated blast testing at MGA Research (an independent lab), the MitiGator™ Technology was evaluated in seat cushions as well as floor mats. The 285g impact was reduced by 83% when acceleration was measured at the pelvis.

The one inch MitiGator™ deck mats reduced lower tibia loads by more than 30% when compared to the bare metal floor.

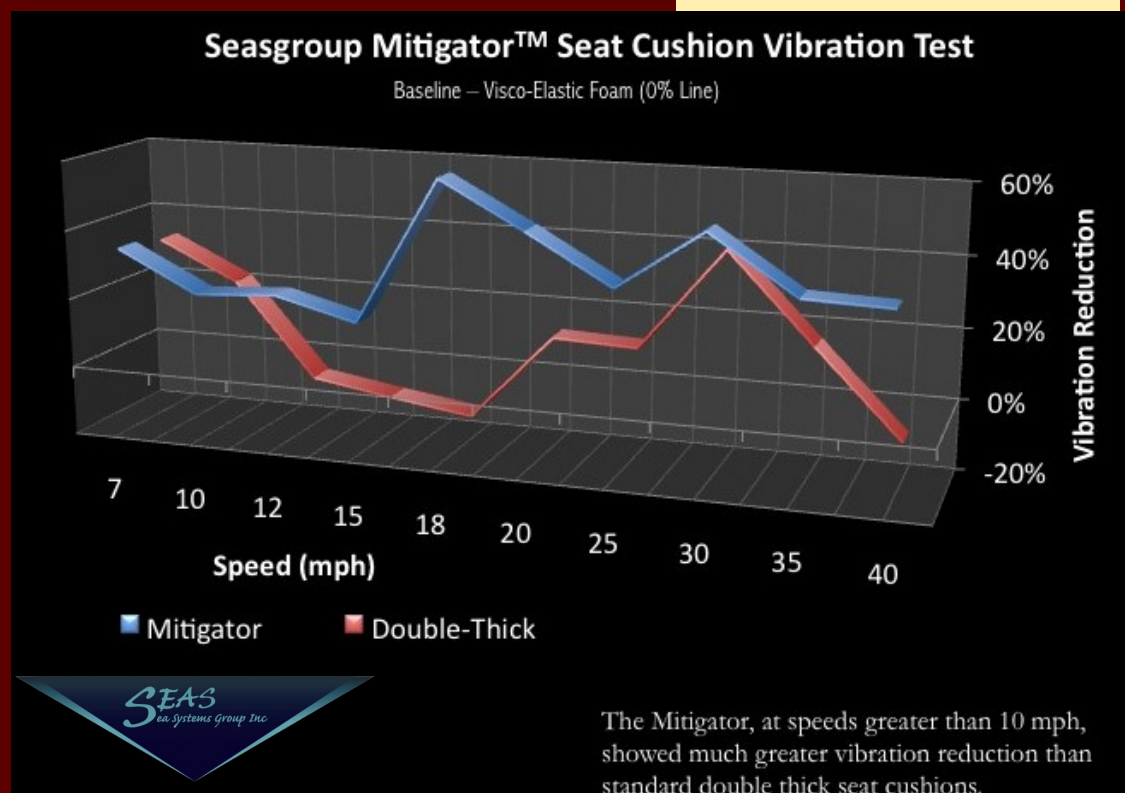




This graph shows vibration reduction by the **MitiGator™** when compared to one and two inch thick Space Foam (ComforFoam) cushions. These tests were performed in a tracked military vehicle traveling at speeds from 7 to 40 mph. These are independent tests performed by BBN Technologies.

## MitiGator™ Technology & Vibration Reduction

MitiGator technology is proven to reduce Whole Body Vibration by 60% and more. Whole-Body Vibration (WBV) may occur in workers who regularly operate military vehicles, trucks, heavy equipment, forklift trucks, rotary and fixed wing aircraft, boats, etc. Both health and safety problems may arise from WBV. The body becomes tuned to and amplifies some WBV frequencies. The safety concern is that under these circumstances operators can experience a loss of vehicle control due to vibrations forcing their hands away from the steering wheel and other controls. Additionally, pain may cause fatigue and loss of concentration. These factors can contribute to workplace accidents, which can mean personnel injuries, even deaths. Aside from costs for treatment and rehabilitation, injuries mean lost time and productivity on the job. Accidents also result in time and material costs when equipment has to be repaired or replaced and operations are delayed or cancelled.





The MitiGator™ Technology is an engineered cushioning system designed to protect people from hi-speed, hi-impact assaults and to allow them to continue to perform their jobs or enjoy their leisure time. The MitiGator™ uses patented air control technology working with 4,044 to over 12,000 surfaces per square foot to dissipate energy before it is transmitted to the body and thus help alleviate the problems. This allows the MitiGator™ to keep working even if it is breached.

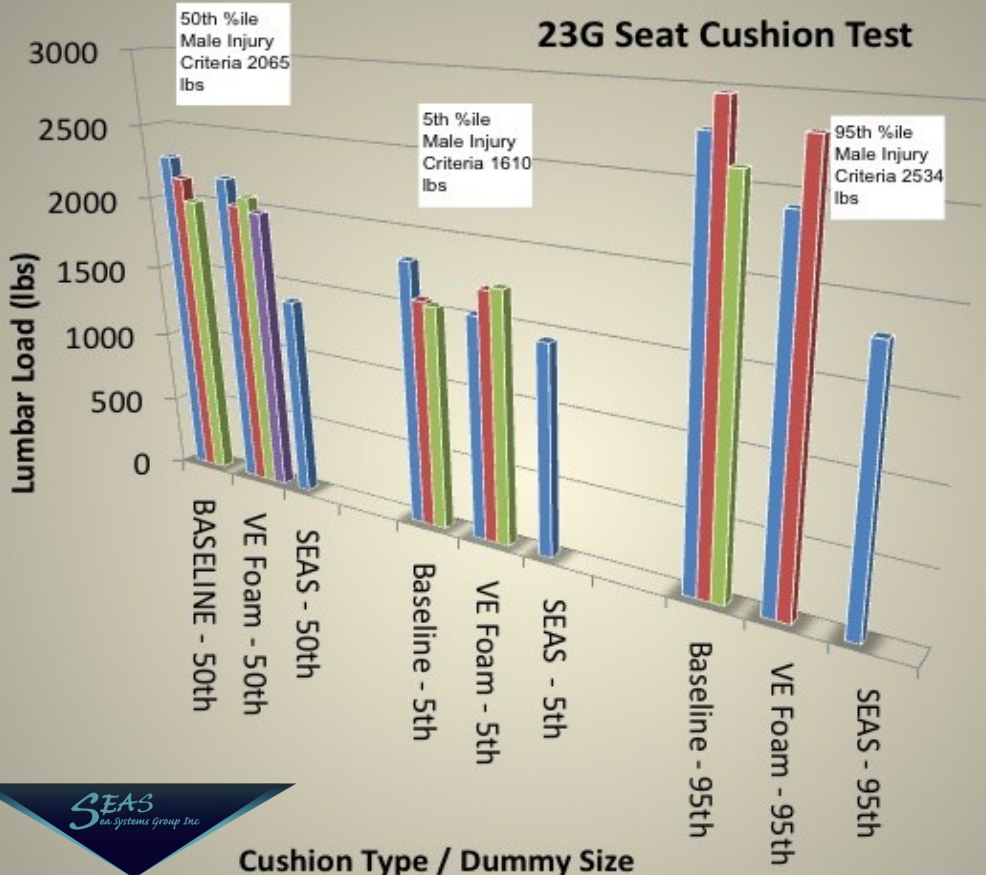


## MitiGator™ Technology - Shock & Impact Protection

MitiGator™ technology is exceptional at protecting people from injuries due to impacts and shocks. MitiGator™ technology reduces shock and impact transfer by absorbing the energy normally absorbed by your body. This means fewer long term injuries and reduction in the fatigue and pain suffered from shock and impact, allowing you to spend more time on the mission without feeling it later. MitiGator™ has been validated by intensive, vigorous in-house testing and by the Navy and Air force. The seat cushions were put through thousands of experimental drop tests and survived 1.75 million impacts with no deterioration in its performance. This extremely durable material returns to its original configuration after sustaining hard contact, making it ideal for recurring impacts.

The MitiGator™ system is used in tens of thousands of vehicles including combat vehicles, armored vehicles, boats, race cars, tractors, heavy equipment, rotary and fixed wing air vehicles, sporting goods and more. Any place a person needs to be protected from impacts there is a MitiGator™ for that.

23G Seat Cushion Test



Cushion Type / Dummy Size



ISO 9001:2008 Certified

FAR 25.853(b)

FMVSS 302

MILSTD 1120:302

ISO 10326-1 Vibration Test



Made in the USA

## MitiGator™ for any application

MitiGator™ technology is available from Sea Systems Group in a multitude of options. Depending on the energy levels anticipated and the environment for use, MitiGator product is available in 1", ½" and 3/8" thicknesses and in five different materials (Urethane, Uniprene, Monprene, Silicone and VE foam).

We provide MitiGator™ tiles to OEM seat and vehicle manufacturers to build their own MitiGator™ seats and flooring systems. We provide complete seating systems in many formats for almost any land, air or sea vehicle. We can fabricate seat cushions for any application and environment. We have complete flooring systems in many configurations for floor boards, boat decks, and other surfaces. We even offer portable floor panels and seat cushions that you can take with you as you move from vehicle to vehicle.



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