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Adept Armor Unveils Ivoryguard™, an Ultra-Lightweight Foam Redefining Ballistic and Impact Protection

Now integrated into the Storm Foundation Plate, Ivoryguard™ enhances durability and energy absorption while making the ultra-light NIJ-III/RF1-rated armor even lighter.



Denison, TX. (March 2025) – [Adept Armor](http://www.adeptarmor.com), pioneers in next-gen protective solutions, today launched [Ivoryguard™](http://www.adeptarmor.com/ivoryguard): a breakthrough foam technology that defies conventional engineering limits. At just 0.068 gm/cc, it's lighter than silica aerogel – often called “the world’s lightest solid” – yet tougher than traditional heavy-duty foams used in armor, helmet padding, and other high-impact applications.

In head-to-head tests, Ivoryguard outperformed leading materials by 20-360 percent in weight-adjusted energy absorption. Even that alone positions Ivoryguard as a major innovation in high-performance superfoams – as the lightest heavy-duty foam – but raw performance is only half the story:

- **Engineered for extremes:** Far less temperature-sensitive than the competition, Ivoryguard maintains performance in environments from -40°C to scorching desert heat, and is currently

being investigated for use in stratospheric drones operating at -50°C in ultra-high-UVR conditions.

- **Built to last:** Closed-cell foam structure repels moisture and chemicals while staying odor-free.
- **Outstanding engineering properties:** 180 percent elongation, 2.5 MPa tensile strength, and tear resistance exceeding 45 N/cm – a combination of properties which makes for a material that’s ultra-plastic yet damage resistant.

Adept’s flagship RF1 [Storm Foundation Plate](#) now integrates Ivoryguard, shaving another 0.1 lb. off an already featherlight design (down to 2.3 lb.) while maintaining combat-proven 0.9” thickness and NIJ III/RF1 ballistic rating. The result? Military-grade protection that feels effortless to wear, with further reduced backface deformation upon impact.

While born for ballistic challenges, Ivoryguard is sparking a materials revolution:

- **Aerospace:** Ultra-light insulation and structural support for high-altitude drones.
- **Automotive:** Durable crash absorption that doesn’t compromise mileage.
- **Sports:** Helmets and torso protection pads that are lighter, more durable, and easier to care for.



It will become the material of choice for all those who demand protection that offers the best performance at the lowest weight, combined with extreme endurance and top-tier comfort characteristics.

“Ivoryguard closes the ‘impossible gap’ between weight, protection, and resilience,” said Jake Ganor, CEO at Adept Armor. “This isn’t just better foam; it’s a new design language for safety-critical industries.”

Adept is now offering Ivoryguard samples to qualified partners. Defense teams, engineers, and manufacturers ready to leapfrog competitors are invited to reach out. Learn more about Ivoryguard in its new video: <https://youtu.be/pDxMwUedSSY>.

For more information on Adept Armor or how to request an Ivoryguard sample, visit [their website](#).

About Adept Armor:

Adept Armor is a materials engineering and industrial design firm that focuses on the development of technologically advanced body armor solutions for the world's elite fighting forces. Pioneering the

development of novel high-end materials in armor systems, Adept is spearheading technological development in the armor sector. www.ade.pt/ivoryguard/

Adept Armor is happy to work with other companies in the industry who are looking to integrate advanced lightweight materials into armor systems and is also ready to assist research laboratories investigating ballistic phenomena. For more information, [contact Adept Armor directly](#).