

DEFENSE

ARMOR

Advanced aluminium technology
for high survivability and mobility

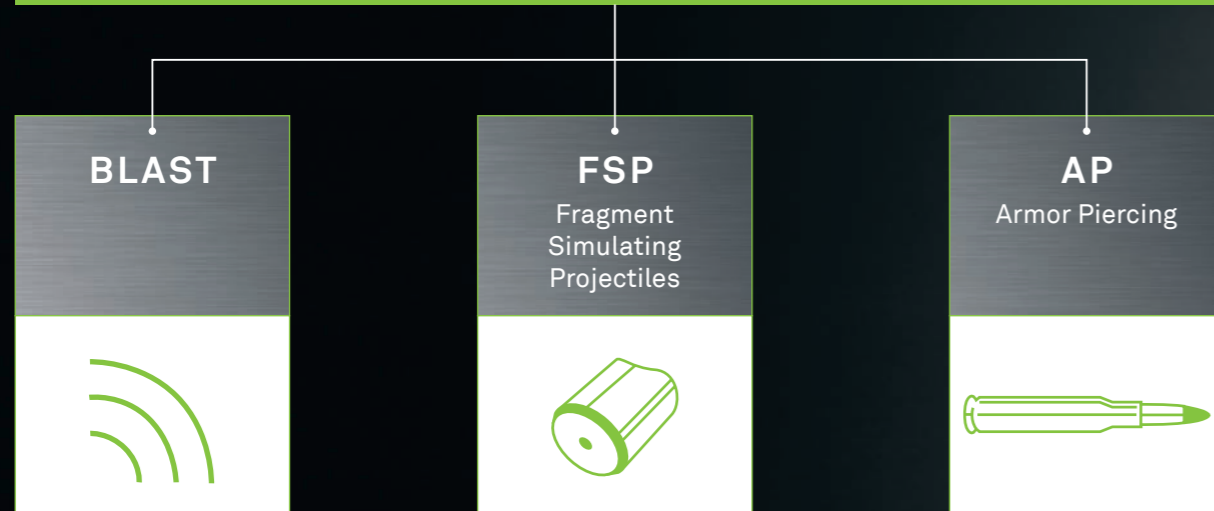


KEIKOR[®] is the most complete and technology-advanced Armor Suite

Constellium's global Armor offering includes a set of targeted innovative solutions building on aluminium's exceptional properties. These products are used for vehicle and turret hulls, appliqué armor kits for ballistic protection, underbelly armor kits for blast confinement and bridging or pioneering vehicles.

Constellium's defense offerings leverage its global presence, with hubs in Europe and the US and dedicated manufacturing lines allowing for reliable sourcing and optimized fabrication flows. This customer-driven approach is part of Constellium's drive to meet the defense industry's requirements.

A PRODUCT LINE ABLE TO ADDRESS SPECIFIC OR COMBINED THREATS



	KEIKOR [™]		Conventional Solutions
APPLIQUÉ	KEIKOR [™] AP	7449 7056 2195*	6061
HULLS	KEIKOR [™] INTEGRAL	2139* 7056	5083 7020 7017
UNDERBELLY	KEIKOR [™] BLAST	2139* blast temper 7056 blast temper	5083 6061 7020

*MIL-DTL



THE HIGHEST PROTECTION FOR APPLIQUÉ

Designed to obtain the ultimate protection against AP (Armor Piercing) threats, it is the most performing solution to design Appliqué or other vehicle subsystems principally exposed to AP threats



FOR HULLS, THE INTEGRAL PROTECTION AGAINST MULTI-THREATS

This solution has been designed to provide a unique combination of performance on all threat types (Blast, Fragment Simulating Projectiles, Armor Piercing). It is ideally suited for hull design and is totally weldable to ensure an efficient manufacturing process



BEST-IN-CLASS BLAST PERFORMANCE FOR UNDERBELLY

The best protection solution that enables to keep a maximum of vehicle mobility while ensuring survivability for the crew. Specifically developed for underbellies of armored vehicles

KEIKOR[®] delivers a unique combination of protection and survivability

“KEIKOR enhances the performance of our hybrid metallic composite armor solutions with unmatched multi-hit capability and enables effective integration on vehicle platform”.

HARDWIRE LLC

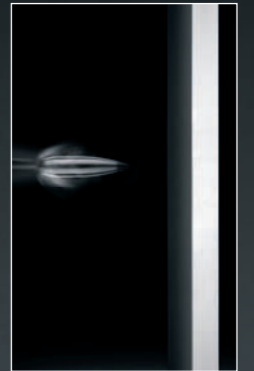
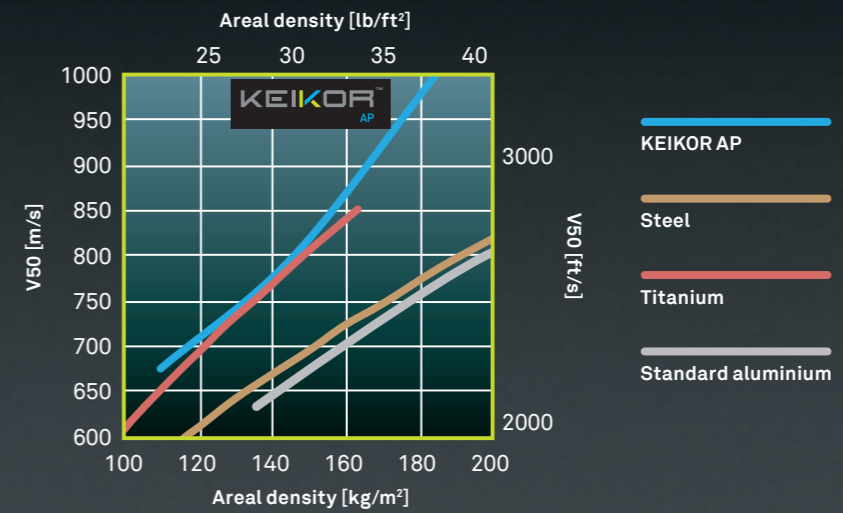
HIGH LEVEL OF SURVIVABILITY and ENHANCED VEHICLE MOBILITY

Ballistic & Blast Performance

Low Specific Weight

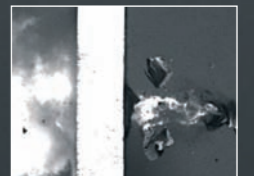
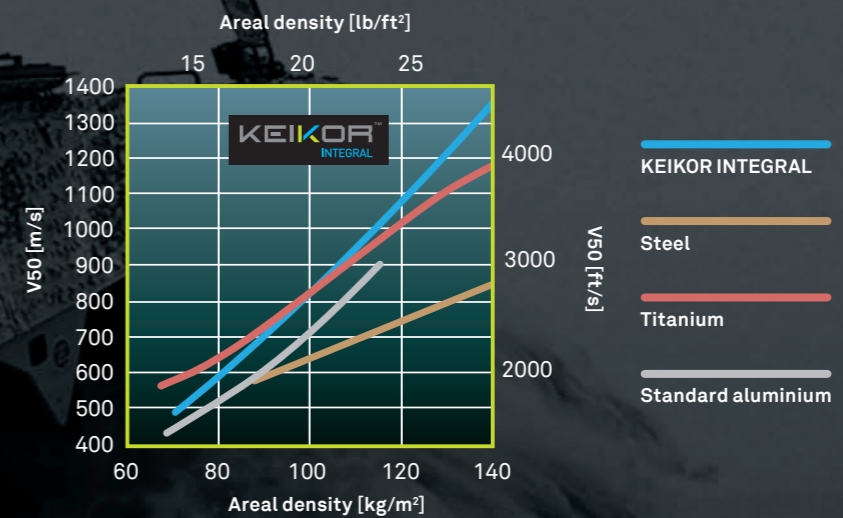
PERFORMANCE AGAINST AP THREATS

Armor Piercing threats 0.5 cal



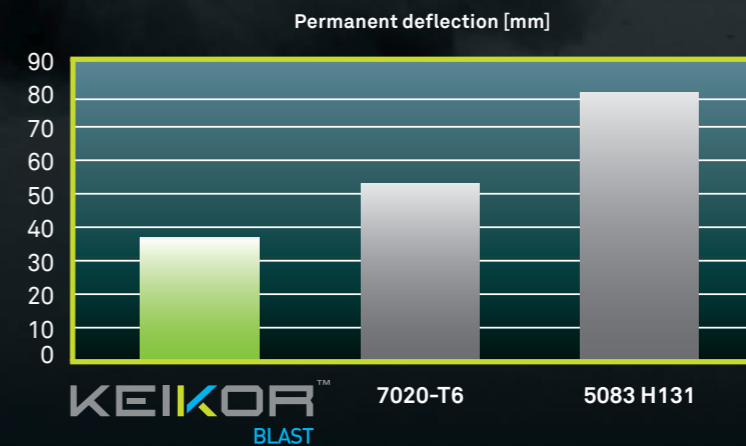
PERFORMANCE AGAINST FSP THREATS

Fragment Simulating Projectiles 20mm



BLAST

Permanent deflection measured after 2kg Semtex placed at 180mm



We also make sure our products can be used efficiently in manufacturing

Through our Customer Application Engineer organization, supported by our global R&D center, we make sure to accompany our customer in the industrialization of our solutions.

WELDING

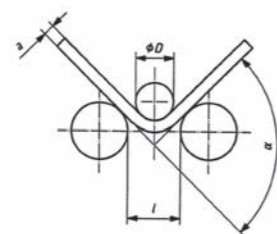
We have acquired a broad knowledge on welding parameters for each of our alloys, whether on MIG, TIG, FSW techniques



OUR 2139 ALLOY, DERIVED IN TWO VERSIONS KEIKOR INTEGRAL AND KEIKOR BLAST, IS UNIQUELY POSITIONED: EXTREME BALLISTIC PERFORMANCE COUPLED WITH AN EXCELLENT WELDABILITY

BENDING

We can provide recommended bending parameters depending on alloy and thickness



A global and reliable source

Our plate manufacturing facilities in Ravenswood, West Virginia, Issoire in central France and Sierre in Western Switzerland are all equipped to handle even the most sophisticated armor plate requirements. These European and US locations enable us to deliver an unrivalled range of aluminium plate solutions from either side of the globe.



PARTNERING WITH CUSTOMERS

Our philosophy of partnering with customers, together with a strong commitment to R&D, enables us to develop optimal and innovative materials solutions tailored to our clients' needs. Our dedicated Customer Application Engineering Group is leading the way in bespoke customer requirements, from ballistic trials to holistic end-to-end projects.



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