



Ballistic Composite Jacket composites are classified into 3 application categories: Cast, Laminating and Spray. Laminated composite panels are a build-up of proprietary inner members such as hard steels, ceramics, Kevlar fabric and ultra-dense engineered thermoplastics captured within a matrix of Ballistics super-polymer. Panels weights are under 1.5 lb/ft² (7.5 kg/m²). These laminates pass NIJ Level 4 US Military testing performance standards. Please contact us directly for these extreme military grade laminate composites. Ballistic composites dedicated to this subject are military classified and may not be released on this web site. However, cast BallisticComposites Jacket materials may be presented here as they are available with limited government restrictions.

The cast Ballistic Composite Jacket CBS1 & CBS2, may be cast optically clear to a thickness of 1.25" (31mm) to handle the above fire-power performance specification as shown typically in Fig. 1. CBS2 is another ballistics grade super-polymer providing fire retardancy and additional high heat capacity. These cast BallisticCompositeJacket'S formulations are capable of absorbing intense fire-power from multiple rounds of 44 magnum and 45 caliber bullets. This 45 caliber bullet was stopped at a depth of .375" fired at close range. Recently an M16 grade was accomplished to protect Oil Pipes.

BallisticCompositeJacket are a high strength energy absorbing material designed to receive extensive impact forces. Spray BallisticCompositeJacket is used to strengthen a variety of military grade substrates. As shown in Fig. 2, SBS is sprayed on a high strength very hard steel (Brinell 60-65) panel at a thickness of 3.6 mm. Shown from the back side, the left hand side shows the dark green super-polymer coating strengthening the hard steel keeping it from shattering and cracking. These materials exhibit extremely high material tear resistance and superior toughness.

There are 2 primary super-polymer formulations used in military protection applications: BlastJacket, which is used for explosive blast containment and BallisticCompositesJacket, which is used for ballistic shielding. These materials may be applied to many types of structural substrates which include high strength steel, 6061 Aluminum, high-strength composites, wood laminates, reinforced masonry and concrete. These unique materials provide extreme protection for safe-houses, personnel vehicles, government buildings, armed outposts and special aircraft. For specific applications, contact our technical support group for specific application.

Preparation of substrate surface prior to the application of MaxPolymers is extremely important as durability is only as good as the weakest link in the coating system. Concrete must be fully cured and should be prepared with a sandblasting, diamond grinding or machine sanding depending on the severity of the concrete surface condition. Similar proper preparation must be performed for metals. Primers also require this proper preparation. Always power clean using mild detergent prior to sanding, etc. Call TechSupport Group for assistance with selecting SSS application system. Also read the Application Page on this website. If patching concrete, use our mineral filled fast-set Acrylic Modified Epoxy applied by trowel. For expansion joints, use Joist Seal applied by hand cartridge dispensing gun. It is always best to perform a test within a small section of the application area prior to full scale engagement.

This technical data information is accurate to the best of our knowledge. Spray Equipment and Coatings Inc makes no warranty, expressed or implied within the materials on this website, its use or with its any application. Spray Equipment and Coatings Inc shall not be liable for material or application related injuries, material non-conformance, application failures or any consequential damage by the use of this product.



BallisticComposite: Castable
PHYSICAL PROPERTIES

Optical Clarity	Visual	Clear
Flex Modulus	ASTM D790	390k psi
Tensile Strength	ASTM D412	5500 psi
Elongation	ASTM D412	50%
Hardness -Shore D	ASASTM D785	85

Abrasion - TaberCS17	ASTM D4060	50 mg/1k cycles
Tear Strength	ASTM D624	>400 lbs/linear in.
Gel Time	Time	15 min
Mix Ratio	PBV	1:1

BallisticComposite: Fast-Set Spray PHYSICAL PROPERTIES

Tear Strength	ASTM D624	550 lbs/ linear in.
Impact	ASTM D2794	>300 in. lbs
Tensile Strength	ASTM D412	3610 psi
Elongation	ASTM D412	>500 %
Hardness Shore D	ASTM D2240	45-50
Abrasion -TaberCS17	ASTM D4060	25 mg/1k cycles
Gel Time	Time	30 s
Mix Ratio	PBV	1:1

TECHNICAL APPLICATION DATA

Physical application of spray BallisticCompositeJacket requires a 2-component liquid pumping for spraying or simply hand batch mixing for the process of casting. Surfaces must be prepped for cleanliness and/or use an adhesion primer to acquire superior adhesion to contributing energy absorbing substrate. CBS MaxPolymers is available in 15 and 55 gal Sets. It is a 100% solids aliphatic formulation which does not contain VOCs. Application temperature ranges from 20°F to 150°F. If hand mixing, stir for 1 minute with a hand drill jiffy mixer. Working time for casting at 75°F is 10 min. Gel time of casting is 10 minutes. Full cure casting occurs within 24 hours. Spray cure time is 2 minutes. Functional operation temperature ranges from 0°F to 250°F. Surface appearance is glossy, semi-smooth and optically clear. CBS may be color-tinted if desired. Refer to MSDS for material and safety standard procedures.

Adhesion Results of Typical Substrates per ASTM D-4541 Elcometer

Concrete- Primed	>300 psi	Concrete cohesive failure; excellent bonding
Steel- Primed	>1000 psi	Excellent bonding
wood- Primed	>250 psi	Wood cohesive failure; excellent bonding