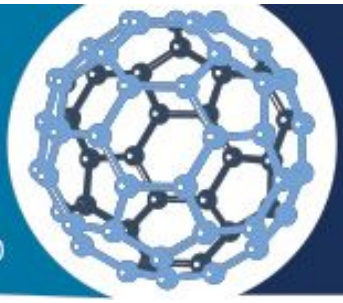
Superskinsystems, Inc.
322 Industrial Park Dr.
Lawrenceville, GA 30046
Phone: 404-216-4711
404- 229-8343
CHEMTREC: 800-424-9300



SUPERSKINSYSTEMS

Technical Data Sheet

BlastSkin

BlastSkin™ polyurea is a high strength energy absorbing super-polymer designed to deliver extensive elastomeric resiliency when subjected to explosive energy forces. There are three military grade formulations which possesses extremely high material tear strengths, exceptional abrasion and superior toughness. When subjected to an exothermic explosion, the super-polymer's molecular geometry is pushed to a very high energy state enabling it to absorb the kinetic energy of the blast's shock wave. It will provide containment of its underlying fractured substrate preventing the debris of shrapnel fragments. Military testing has demonstrated blast pressure rates in the order of 250 psi/ms performance at 0.25″ thickness. BlastSkin™ super-polymers are available in 3 formulations depending on particular physical property requirements. All grades- BS1, BS2 and BS3 are used in military protection applications and are normally seen in conjunction with a particular grade of BallisticSkin™. See BlastSkin Test Blast Movie

BallisticSkin™ is constructed as a NEAT super-polymer or as a composite fabrication. Material thicknesses of the super-polymers are dictated by the required level of protective performance along with application specific required substrates. Typical material substrates include very high strength steel, 6061 Aluminum, UHMW engineering polymers, fabric composites, ceramics, masonry and concrete. Please contact our technical support group for specific substrate application procedures, spray machines, safety gear and clean-up kits. Refer to MSDS for material and safety standard procedures.

Technical Application Data

BlastSkin™ is a two component 100% solids formulation which does not contain VOCs. Skin thickness has no limitation. BlastSkin™ must be applied using a 2-component high-pressure liquid pumping spray machine. Proper safety wear is mandatory. Surface application temperature ranges from 0°F to 150°F. Spray cure time 10s. Surfaces must be prepped for cleanliness and/or may require the use of an adhesion promoter primer to acquire superior adhesion. Functional operation temperature ranges from -40°F to 250°F. Final top-coat appearance is glossy smooth. Coverage at 16 mils is 100 sq. ft./ mixed gal or 9 sq.ft. at 1/4″ thickness.

Physical Properties

BlastSkin™ BS1/BS2 Physical Properties		
Tear Strength	ASTM D624	>400 lbs/ linear in. (2500 Mpa)
Impact	ASTM D2794	>300 in. lbs (33.89 N-m)
Tensile Strength	ASTM D412	3610 psi (25 Mpa)
Elongation	ASTM D412	>350 %
Hardness Shore D	ASTM D2240	45-50
Abrasion -TaberCS17	ASTM D4060	25 mg/1k cycles
Gel Time	Time	10 sec.
Mix Ratio	PBV	1:1

Adhesion Results

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 failure; excellent bonding

Substrate Surface Preparation

Preparation of substrate surface prior to the application 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.

injuries, material non-conformance, application failures or any consequential damage by the use of this product.