

RAVEN

+1 (800) 635-3456

ENERGY
CONTAINMENT
SOLUTIONS



Oil and Gas Industry



“We have solutions for your oil and gas containment needs and will work hard to find a product fit for your specific challenge”.

— Raven Energy Team

GAS & OIL PRODUCT FOCUS

For over 60 years, Raven has manufactured high-quality proven products for the oil and gas industry by manufacturing large one-piece stepped drop-in containment liners and covers. Our materials range in thickness from 6 mil to 80 mil and are available in smooth, textured, unsupported, reinforced, and dense-scrim reinforced materials for maximum durability.

Raven consistently delivers reliable containment solutions, quick response times, strong factory welded seams, and a broad range of chemically resistant proven materials. We provide the resources needed to help solve the tough application challenges oilfield customers face regularly. The Raven HydraFlex™ Pro series is a direct example of a value-engineered solution to specifically address the critical elements in above-ground tank lining. HydraFlex™ Pro geomembranes are designed to provide the industry with the highest flexibility and strength available in an unsupported polyethylene for superior performance without stepping up to higher cost polymers.

Raven specializes in products that are designed to perform in the rugged environment of the energy sector. We can help solve your next challenge, from durable Frac/Pit Liners and Textured Rig-site Liners, to the unique needs of Above-Ground Tank lining and Secondary Containment applications.



Common Applications

- Reserve Pit Liners
- Frac Water Reservoirs
- Evaporation Ponds
- Secondary Containment Liners
- Above Ground Tank Liners
- Non-Skid Deck Liners
- Textured Rig-Site Pads

RAVEN OILFIELD PRODUCTS

Raven containment products includes membranes designed to protect the environment in the challenging applications of the oil and gas industry, from highly flexible and conforming liners to durable long-term textured liners designed to withstand heavy traffic; we have a product to meet your toughest demands.



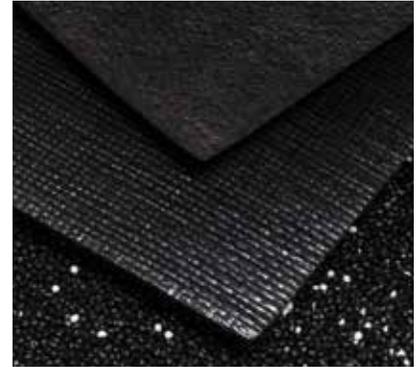
HYDRAFLEX™ PRO HP-SERIES
VERY FLEXIBLE LLDPE

HP-Series are premium-grade liners designed to resist pinholes and flex-cracking and are used in applications requiring enhanced flexibility as demonstrated by low modulus characteristics. The critical elements listed above are necessary for reliable and consistent performance in above ground tank lining systems, as well as in earthen pit and pond linings. Dual gray/black layers provide for ease of damage detection.



HYDRAFLEX™ H & HT-SERIES
ECONOMY GRADE LLDPE

H & HT-Series are stabilized with carbon black and antioxidants designed as economical solutions with outer layers of virgin-grade linear- low-density for ease of sealing, and an inner core of virgin and select reprocessed resins. H-Series smooth membranes are recommended for general near to mid-term applications. Textured HT-Series delivers increased friction and flexibility.



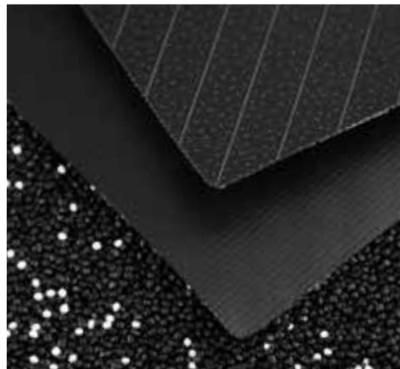
GEOMAT™ SERIES
COMPOSITE GEOMEMBRANES

GeoMat™ Series are engineered composite geomembranes consisting of reinforced polyethylene with protective non-woven geotextile fabric. GeoMat™ membranes have exceptionally high impact and tensile strengths, and are abrasion and slip resistance on the fabric surface. The outer edges are designed for ease of heat sealing and water tight seams.



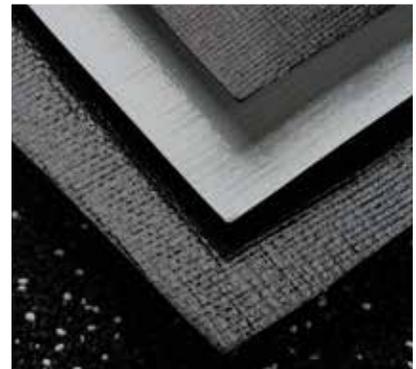
GEO♦SKRIM™ SERIES
REINFORCED | LLDPE

Geo♦Skrim™ Series are string-reinforced liners consisting of puncture resistant LLDPE and heavy-duty tear resistant scrim reinforcement. Geo♦Skrim™ is a medium weight liner for mid-term oilfield applications. Geo♦Skrim™ Pro is heavier for more demanding applications, with up to 2-years of service. Our proven Dura♦Skrim® R-Series is also available in a wide-range of standard sizes, thicknesss, strengths, and longevity (6 to 24 Mil thickness).



DURA♦SKRIM® J & N-SERIES
REINFORCED | TEXTURED LLDPE

J & N-Series are rugged scrim reinforced liners manufactured from chemically resistant linear low-density polyethylene or polypropylene with superior cold stress-crack performance. In addition to excellent dimensional stability, they provide unmatched tear and tensile strengths for long-term exposed applications. Available in smooth or textured on 1-side or 2-side with our exclusive GeoGrip™ texture.



PROTECTOR™ W-SERIES
WOVEN-COATED HDPE

W-Series consist of woven-coated fabrics manufactured with oriented high-density polyethylene ribbons and outer layers of a resilient U.V. stabilized LLDPE coating. W-Series reinforced polyethylene materials have an incredibly high strength-to-weight ratio, resulting in superior tear resistance and ease of installation. Woven-coated fabrics provide excellent tear strength and durability.

CONTAINMENT APPLICATIONS

Raven Industries has provided solutions for the following containment applications for well over 60 years, and leads the industry today with unmatched performance and quality. Insist on genuine Raven products for reliable long-term, proven containment performance.



ABOVE-GROUND TANK LINERS

Above ground tank containment systems are becoming the choice of many regulators to contain drilling fluids, by reducing the need and foot print for in-ground pits. Geomembrane tank liners must be flexible and extremely resistant to pinholes and flex cracking during and after the installation. This is one of the most demanding applications in the drilling process and the reason Raven's invested countless hours designing liners that are proven to survive unforgiving installation stress and weather extremes in the oil and gas fields. Raven HydraFlex™ Pro (30 & 40 mil) is the answer to reliable tank liners; fabricated with state-of-the-art equipment to ensure the highest performance.

RESERVE PIT LINERS

Reserve, mud and circulation pit liners provide effective protection of ground water and surrounding soil from drill cuttings and fluids commonly used during the gas and oil drilling and production process. Chemical resistance, high impact and tear resistance are all key in to a successful containment system. Raven has a wide-range of products specifically designed to meet or exceed industry and regulatory requirements. Raven reinforced and non-reinforced geomembranes are commonly custom fabricated into large drop-in panels to reduce installation time and money. At the same time protecting the environment from possible contamination or seepage into groundwater or surrounding areas.



FRAC WATER RESERVOIRS

Water is the largest single component used in hydraulic fracturing and is critical to the success of shale oil and gas extraction. It is vital that these large centralized containment reservoirs are lined with highly stabilized geomembranes that perform in the harsh weather conditions of our gas and oil basins. Fresh water containment for hydraulic fracturing can consume over a million gallons per well. In order to capture and maintain water in regions where water is scarce, large holding ponds are constructed to store water for fracking operations. Raven containment geomembranes are engineered and fabricated for this crucial application.

CONTAINMENT APPLICATIONS CONT'D

Raven is a long-term provider for the oil and gas industry and our experienced Energy sales team is available to help with any additional project needs that may arise, just give us a call at 1-800-635-3456 and we will help find an effective solution for your requirements.

EVAPORATION POND LINERS

Evaporation ponds are used to separate solids from liquids to simplify the transportation and disposal processes for oil and gas exploration waste. These ponds typically require a highly chemical resistant long-term geomembrane liner depending upon the application and geographical location. Raven can design and fabricate custom sized long-term containment solutions in both reinforced and unsupported liner options to meet specific performance requirements for an overall system approach. Large prefabricated panels up to 8,000 lbs will significantly decrease liner installation time by optimizing coverage and minimizing on-site seaming.



RIG-SITE PAD LINERS

The rig site pad and borehole is the heart of activity during the drilling process and can contribute to ground water contamination if the surface is not properly prepared and contained. Rig pad liners are installed in the immediate working area of the well-site to provide surface protection as well as work safety. It is vital that drilling cuttings, fuels and chemicals along with hydraulic fracturing fluid are safely contained with a pad liner. Raven manufactures highly puncture resistant reinforced pad liners that stand-up to the daily demands of the drilling process along with aggressive textured slip-resistant liners to assure worker safety.



SECONDARY CONTAINMENT

Secondary containment systems provide a critical line of defence and environment protection in cases of failures and spills from primary containment systems; including bulk storage tanks, piping, produced water containers or oil field equipment. Common secondary containment systems include various structural components including berms, steel or concrete walls, dikes and many others that require chemically resistant geomembrane liners. In the event of primary system failures the secondary system functions to contain the leakage for clean-up response procedures. Raven will work hard to select a containment liner to meet the requirements based on your application parameters and location.

Raven specializes in producing reliable large custom-stepped, prefabricated drop-in panels up to 8,000 lbs to optimize site coverage and significantly decrease install time and labor in the field.



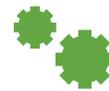
FABRICATED GEOMEMBRANES

Quality built prefabricated panels save considerable time and money on site by significantly decreasing the number of install days. In many cases, the panel can even be dropped in as a one-piece containment solution. Raven custom fabricated panels are accordion folded and rolled tightly on cores for optimized handling and shipping, panels are then easily deployed using the proper job-site equipment. All panels are fabricated in a quality-controlled environment to meet the strict criteria of our certified management system through our internal accredited laboratory.

Raven produces prefabricated custom-stepped panels up to 8,000 lbs (up to four acres depending on thickness) to be further joined in the field if necessary based on the project size.



Raven custom panels are accordion folded and rolled tightly on cores for optimized handling and shipping, panels are then easily deployed using proper job-site equipment.



Send in your project dimension details and we will design a custom fabricated stepped panel to fully optimize your size and eliminate excess liner waste on-site.



Remember to utilize the Raven Online Calculators to quickly figure the liner size for your pit or ponds by visiting www.RavenEFD.com.



Access the Raven site across all platforms! Whether you're in the field using a tablet or on an office desktop, the Raven website is fully responsive without missing a beat.

WHAT MAKES RAVEN UNIQUE:

Our endless manufacturing abilities and solid commitment to operational excellence is what sets us apart from the competition; we offer some of the most diversified capabilities in the industry as well as high standards for one-on-one customer service. You can draw on our 60 plus years of experience, gained from producing millions of pounds of polyethylene each year. Raven's extensive engineering and R&D efforts are focused on developing customized solutions to meet precise requirements. All Raven products are designed and manufactured through our six-stage technical development process (using critical listening, comprehensive research and analysis, and top design and manufacturing standards) up front to develop value-added, competitive end-product solutions for our customers.

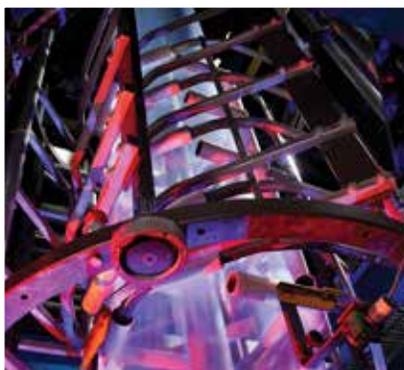
Raven is an experienced manufacturer providing up to 9-layer blown sheeting capabilities, lamination/coating of reinforced materials, and large factory-welded panels up to 8,000 lbs. We are a nation-wide provider with strategically located manufacturing and distribution facilities located in Sioux Falls, Brandon, and Madison, SD, and Pleasanton, and Midland, TX with the very latest in state-of-the-art processing equipment. We are committed to total customer satisfaction through our ISO 9001 certified management system.

At Raven, we partner with our customers and work closely through our technical development process to develop value-added, competitive end-product solutions.



DEDICATED TO QUALITY

Raven is dedicated to creating innovative new products through our comprehensive development solutions center, streamlining the process from conceptual design to full-scale production. We are a first choice in quality, housing an accredited laboratory with the latest in testing equipment (GAI-LAP Accredited). Raven is an industry provider of super-stabilized select geomembranes that are designed to meet GRI-GM standards, critical NSF certifications, and many other government, state and local regulations and standards.



WE SOLVE GREAT CHALLENGES

Raven is dedicated to providing innovative, high-value products and solutions that solve great challenges throughout the world, and is a leader in precision agriculture, high-performance specialty films, and lighter-than-air technologies. Since 1956, Raven has designed, produced, and delivered exceptional solutions, earning the company a reputation for innovation, product quality, high performance, and unmatched service. Raven Engineered Films' strategic mission is to produce critical film and sheeting for the containment and protection of Earth's natural resources and asset value. We are dedicated to developing targeted product solutions that not only solve precise application challenges, but integrate sustainable environmental design practices for long-range performance.



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