Solmax is not a design professional and has not performed any design services to determine if Solmax’s goods comply with any project plans or specifications, or with the application or use of Solmax’s goods to any particular system, project, purpose, installation or specification.
ACHIEVE MORE, FASTER

Mining costs. To scale operations, ensure economic feasibility, environmental soundness and profitability, mines need innovative, reliable solutions. Solmax’s range of geosynthetic systems are designed to deliver.

Economical, high-performing and environmentally safe, our geosynthetic systems are used globally by leading organizations to improve recovery of valuable materials, isolate contaminated waste and make closure a more efficient and less costly endeavor. Our no-compromise approach to quality and reliability allows you to achieve more, faster.

RECOVER MORE METAL

Solmax’s range of geosynthetic systems offer containment systems that let your project get underway and keep going. Because if you can’t stack ore, you can’t make money.

On average, geomembranes experience 4 holes per hectare after they are installed. Estimated leakage through these holes ranges from 340 to 3,400 liters per hectare per day (LPHD). (1)

In the absence of a leak detection survey, geomembranes experience an average of 4 holes per hectare after installation. “By performing a leak detection survey before leach pad operation, the PLS would not be lost through holes that would otherwise go undetected.” (2)

WHAT CAUSES LEAKS? (1)

<table>
<thead>
<tr>
<th>Probability of Significant Leakage</th>
<th>22.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO SURVEY</td>
<td>87%</td>
</tr>
<tr>
<td>DIPOLE METHOD SURVEY</td>
<td>7.1%</td>
</tr>
<tr>
<td>DIPOLE METHOD &amp; BARE GEOMEMBRANE SURVEY</td>
<td>.00001%</td>
</tr>
</tbody>
</table>

87% OF DEFECTS OCCUR DURING COVER SOIL PLACEMENT.

REFERENCES

1. Forget, Benoit et al., 2005. “Lessons Learned from 10 Years of Leak-Detection Surveys on Geomembranes,” Sardinia Symposium, Sardinia, Italy.
With millions of square meters installed in mining operations around the world, Solmax’s geomembranes have proven to be the most durable, dependable and cost-effective containment solution in heap leach pads.

Our liners are made from the highest quality resins and exhibit superior resistance to punctures, stress cracking, and harsh chemicals. Available in a variety of width rolls, our geomembranes require fewer welds, so they install faster and leave fewer opportunities for leaks.

Our LLDPE Series has high flexibility, multi-axial deformation, and extended lifespan.

PROTECTING VALUABLE RESOURCES
HEAP LEACH RECOVERY

Heap leaching, done right, can contribute substantially to the economic viability of mining projects.

With millions of square meters installed in mining operations around the world, Solmax’s geomembranes have proven to be the most durable, dependable and cost-effective containment solution in heap leach pads.

Our liners are made from the highest quality resins and exhibit superior resistance to punctures, stress cracking, and harsh chemicals. Available in a variety of width rolls, our geomembranes require fewer welds, so they install faster and leave fewer opportunities for leaks.

Our LLDPE Series has high flexibility, multi-axial deformation, and extended lifespan.

These characteristics make it an ideal solution for containment in areas with craggy landscapes and high differential settlement.

For applications requiring placement on steep slopes, Solmax offers a textured finish to increase the frictional resistance between natural soils and other geosynthetics in contact with the liner.

When the hot sun threatens to interrupt installation, Solmax’s White Reflective Finish reflects the light and keeps the liner cooler, resulting in fewer wrinkles and less chance of damage during backfill.

WHAT DO LEAKS COST YOU?

GOLD SOLUTION LOSS (4)

1 YEAR

$179,744

5 YEARS

$1,742,976

10 YEARS

$179,744

10 YEARS

$3,485,953

COPPER SOLUTION LOSS (4)

1 YEAR

$179,744

5 YEARS

$898,722

10 YEARS

$1,797,444

ASSUMPTION:
40 HECTARE LEACH PAD - GOLD $1,200 OUNCE

ASSUMPTION:
40 HECTARE LEACH PAD - COPPER $3.00 LB

REFERENCES

Solution ponds demand the most durable containment lining systems available. Pond liners are exposed to the elements and must be able to both protect the environment and protect against solution loss, so your precious metals, and profits, don’t get washed away. In remote or arid regions where water is scarce, liners and floating covers are needed to preserve the supply and help prevent evaporation.

Solmax’s High-Performance HD Series comprises the best mechanical and enhanced endurance properties of any HDPE geomembrane liner available on the market, even in the harshest conditions.

Evaporation ponds are required to recover salt from brine by taking advantage of nature’s drying processes. Solmax’s LLDPE Series is a prime choice to contain the brine within the evaporation ponds, improve salt harvesting and reduce precipitation.

Our geomembrane liners provide high chemical resistance to high concentrations of salts for extended periods, provide very low permeability, and offer a high UV resistance.

In the event of minor damage during liner installation or while placing highly-permeable drainage stone (overliner) material on the pad, it is vital to find these leaks quickly and repair them before severe damage occurs.

When storing mine tailings in ponds or impoundments, failure is simply not an option. Tailings are often the most significant environmental liability for a mining project and can be as large as 1 million times greater than the mineral extracted. The containment of tailings is therefore of the utmost importance; hence the use of geomembranes is a cost-effective containment solution.

Lining tailings ponds with our HDPE Series and High-Performance HD Series offers proven long-term performance. They are designed to withstand extreme acidic and alkaline solutions and create an impermeable barrier to prevent the release of mining residues into the environment.

MineDrain works as both a great geomembrane protection layer and an efficient drainage medium, reducing the potential for tears and leaks.

In heap leach pads, it is necessary to install an excellent drainage system to keep the leachate flowing freely to the collection ponds. Our drainage systems are engineered specifically for mining applications that demand superior flow performance and filtration.

The high-flow, high-strength drainage systems can withstand high loads of overburden ore and vehicle traffic to keep the leachate flowing.
SAfETY AND StABILITY

In underground mines, our Geogrids act as a screen on roofs and walls to prevent debris from falling on workers. Manufactured from high quality flame-retardant resin, our Geogrids are durable yet lightweight, corrosion resistant, and easy to handle, allowing for quick, safe installation.

SOIL STABILITY

Solmax’s Geogrids offer reinforcement and stabilization solutions in surface and underground mining applications. Mining sites and the roads used to access them often are built on unstable soils that are not naturally suited for construction.

Our Biaxial Geogrids provide a quick, long-term solution to stabilizing and strengthening roads and work sites and reducing the thickness of aggregate base layers.

Our Uniaxial Geogrids provide the reinforcement solution to building steep slopes and tailings dams that saves valuable spacing and construction cost. The stiff, net-like structure of a geogrid confines stone and soil particles, preventing lateral shear when a vertical load is applied. Compared to traditional stabilization methods, geogrids install in any weather, offer immediate, permanent stabilization, and typically cost 20%-50% less.
WHY
SOLMAX

Our no-compromise approach to quality and reliability makes Solmax the brand of choice. As we have grown, so have our capabilities. Now represented in more regions, we have a clear competitive advantage. It means faster deliveries and better service for our customers, today and tomorrow. And, with some of the smartest minds in the business, Solmax brings products to market which no other company can offer.

Our key objective—to enable progress by protecting the earth—propels us forward. With better support and solutions to protect the ground, our customers can aim higher, achieve more, faster.

Our strategy to build the capacity, capability, reach, expertise, and culture to deliver innovation rapidly and at scale, is well advanced. Our people are motivated, united by a single vision: to set the pace and reshape the industry.

SETTING STANDARDS

Solmax works with governments to draw up industry regulations, collaborates with stakeholders worldwide to raise environmental requirements, and enhances technical designs for projects.

Groundbreaking products brought to market by Solmax and its wholly owned companies include the first HDPE geomembranes, textured liners, geosynthetic clay liners (GCLs), white reflective geomembranes, conductive geomembranes, and high-flow and pressure-resistant drainage solutions.

ISO AND INDUSTRY-RATED

Solmax has achieved ISO 14001 certification for environmental management, and ISO 9001 for quality assurance. Our laboratories are accredited by the GAI-LAP (Geosynthetic Accreditation Institute - Lab Accreditation Program), assuring our customers that we apply the highest standards in product testing. Solmax has also achieved BAM, Asqual, KIWA, CE, and other certifications.

QUALITY ASSURANCE

Extensive manufacturing quality assurance (MQA) testing is performed on our products at our labs. Our MQA program starts with testing and verification of specially formulated quality resins and other raw materials and extends through delivery to the project site.

Our standards are high. All Solmax geomembranes, GCLs, and drainage solutions are tested for strength and durability, and against key criteria.

Geomembranes, for example, are 100% spark tested for pinholes during the manufacturing process to ensure every delivered roll is leak free.
Solmax is not a design professional and has not performed any design services to determine if Solmax’s goods comply with any project plans or specifications, or with the application or use of Solmax’s goods to any particular system, project, purpose, installation or specification.