SOLMAX

CANAL LININGS

When water is conveyed via canals and water channels from source to end-users, water loss through seepage has to be managed. Solmax's geosynthetics provide an effective, high-performance waterproofing and seepage barrier.

Geomembranes designed for canals

Clean water is an increasingly scarce and precious natural resource. As the human population grows, so does demand for water, a vital element in both production and manufacturing processes. With water supplies limited by climate and local geology, better control of water resources is critically important worldwide. With statistics indicating that globally about one third of the water conveyed in unlined canals is lost to seepage, the case for use of geosynthetics is strong.

Canals are often lined with unreinforced concrete, which typically cracks under normal operating conditions (e.g., because of temperature variations or settlement of the subgrade), resulting in significant water loss. Geomembranes are a much more reliable barrier material, offering superior flexibility and capacity to handle minor differential settlement. This makes them the sealing material of choice for canal liners.

Earthen canals are also subject to erosion and leakage problems. Geomembranes, used in combination with these traditional solutions, or on their own, are highly durable and offer increased flexibility (tolerance to minor differential settlements). This makes them the sealing material of choice for canal liners.

Geosynthetics are the sealing material of choice for canals. Our geomembranes, geocomposite liners and geotextiles deliver effective, durable solutions.

Our geomembranes are highly resistant to UV and can be left exposed to weathering without losing their function. However, geomembranes can be damaged by rocks, wildlife, or vandalism. When this is a concern, protection of canal lining systems is preferable.

Solmax offers various solutions for Canal Linings. Textured geomembranes are available to provide non-slip surfaces for wildlife. To protect against damage, geomembranes can be covered by Solmax's geotextiles before being covered with an armoring layer – e.g., concrete that is poured or pumped into a geotextile form, prefabricated concrete panels, soil- or concrete-filled geocells, or another material defined by the designer.

Typical use of our geosynthetics

- **Our HDPE and LLDPE geomembranes** are excellent lining materials. They are available in black, white or colored (tan, green, etc.) rolls, offering better integration into the landscape.
- **Geosynthetic clay liners** (GCLs) may be used for puncture protection and provide an additional layer of sealing for critical applications. GCLs may also be used as the barrier material when a controlled level of seepage through the liner is preferred.
- **Geocomposites** may be used as part of a ventilation system to relieve pressure that can build up behind the liner during sudden decreases in water levels.
- **Geotextiles** may be used to protect the geomembrane from puncture by the subgrade and/or by the overlying protection layer.

Water is a precious scarce resource. Our geosynthetics provide an effective, high-performance waterproofing and seepage barrier for canals.

Environmental benefits

Geosynthetic materials such as geomembranes and geotextiles are kind to the environment. They typically reduce the carbon footprint of any geotechnical project by minimizing the need to mine, then transport high quality granular materials. They also outperform traditional, high energy consuming solutions such as concrete thanks to outstanding engineering performance for the function they are intended to deliver.

Advantages

- High-quality prefabricated linings minimize reliance on local natural resources of variable quality
- Stringent quality-control strategies used in the most demanding applications
- Outstanding UV stability and long-term durability
- Flexibility
- Puncture resistance
- Optional textured surfaces for stability and safety
- Large roll widths and lengths
- Flow improvement (exposed geomembranes)