

Greener Solution To Contain Coal Mining By-Product In New Zealand



Mining by-products can impact the environment. Commonly known as tailings, these include slurry-like substances made up of fine coal and silt-sized materials. It

is essential they are properly contained and disposed of to prevent soil contamination and other environmental problems. Axter's Coletanche ES3HFA bituminous geomembrane was used to mitigate the impacts of coal mining at a mine in New Zealand approaching closure after more than a century in operation.

Rather than adopting the older engineering method of extracting and hauling many cubic meters of clay to build a compacted clay liner, a bituminous geomembrane was used to line the containment area. Its impermeable layers prevented liquid by-products from entering natural waterways or the nearby ecosystem, all achieved with layers only a few millimetres thick which lowered the overall impact on the environment.

Coletanche ES3HFA was particularly chosen for its qualities operating in exposed locations. Its HFA designation, or High Friction Angle, offers better grip on steep slopes and the heavy and robust bituminous geomembranes were important for the high wind environment and potentially sharp and aggressive interfacing materials. The safety and efficiency of the installation was further enhanced by making use of a hydraulic beam, a lifting and unspooling device controlled by the hydraulics of an excavator. With training and use of the specialised installation equipment, a small team at the mine completed the project safely and efficiently.

Company: Axter
Client: Bathurst Resources Ltd
Location: South Island, New Zealand
Application: Containing mining by-products in a more environmentally-friendly way using Coletanche ES3HFA bituminous geomembrane
Benefits: Carbon saving, cost savings, time savings, conserves natural resources



The International Geosynthetic Society (IGS) is a learned society dedicated to the scientific and engineering development of geotextiles, geomembranes, related products, and associated technologies. We are registered as a non-profit corporation.



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The IGS Sustainability Committee is committed to communicating the positive environmental impact of using geosynthetics, improving worldwide understanding of the sustainability benefits of geosynthetic materials, and supporting the geosynthetics industry maximize the sustainability potential of their projects. For more information, visit our webpage at www.geosyntheticssociety.org/sustainability.

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