

ITY GOLD MINE, CÔTE D'IVOIRE

Robust lining solution for tailings storage facility



Industry: Mining
Application: Tailing Storage Facilities
Location: Côte d'Ivoire
Product: GSE® HD

Building on the successful projects at Houndé and Karma gold mines, Endeavour once again chose Solmax as its preferred lining material partner for its tailings storage facility (TSF) project at ITY.

The tailings storage facilities at ITY are constructed using the Downstream method, ensuring that good water management practices are always applied to minimize the size of the supernatant pond on each tailing storage facility.

Overview

Located in the Côte d'Ivoire, Endeavour Mining Corporation's ITY gold mine has produced more than 1.2 million ounces of gold during its 20-plus years of operation. Previously a heap leach operation, recent near mine exploration success has increased the resource base and enabled a carbon-in-leach (CIL) processing plant to be built.

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CASE STUDY

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Solution

The project commenced in November 2018 and involved the construction of a TSF lined with a geosynthetic barrier made from 1,5 mm (60 mil) thick **GSE HD** (high-density polyethylene geomembrane). The facility has a planned impoundment volume of 30.4 Mt (23 Mm³) in five years' time. The TSF has been designed with Underdrainage and a Leakage Collection and Recovery System (LCRS).

As with previous projects for the Endeavour Group, a major challenge was that work needed to be carried out during the short dry season between December and April, giving Solmax and its installation partner Yesti a window of 120 days to complete the project.

Solmax's **GSE HD** smooth geomembrane formed the critical containment component of the project, with a single-sided textured surface liner on the slopes around the structure.

GSE HD liner is the obvious choice for TSF projects due to its high resistance to UV exposure, weathering and harsh chemicals. The **GSE HD** barrier material is also specially formulated to exceed the service life and aftercare period of the mine.

Yesti, who was responsible for the construction of the facility, deployed a flexible team of technicians and engineers for each stage of the project. This enabled them to deploy the right amount of resources in response to the fixed deadlines for the clay lining earthworks, **GSE HD** liner installation and holiday season. This flexible approach to manpower meant that the project achieved up to 20,000 m² (65,617 ft²) of geomembrane installation at peak and resulted in project completion ahead of schedule at 94 days.

Delivering the project ahead of schedule, and below budget contributed to the success that the CIL plant could achieve full nameplate capacity two months ahead of schedule in early Q2-2019.

The tailing storage facilities conform to GRI-GM13 and GRI-GM19 specifications, German DVS 2225-4 standards, Australian National Committee on Large Dams (ANCOLD 2012) and local guidelines. Inspections are done on a regular basis and include an annual audit by Knight Piésold.



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