

Teranap Bituminous Geomembrane

REFERENCES

Kittila Gold mine

SIPLAST TERANAP TP bituminous geomembranes are installed to protect the tailings storage of the Kittila Gold mine in Finland.

The Kittila mine is located in the Lapland, the northernmost region of Finland which is 150 kilometres north of the Arctic Circle. Agnico Eagle operates the mine and estimates that approximately 3.3 million tons of ore is extractable from surface mining and 22.6 million tons by underground mining.

The gold mineralization is mainly refractory, which makes gold extraction relatively difficult because the gold is generally locked inside two main sulphide minerals. Only about 4% is very fine-grained "free gold" and easier to extract. Most of this free gold is found in the outer, oxidized or eroded sections of the ore. The Kittila orebodies were initially mined from two open pits and are now entirely underground in Suuri and Roura deposits. Approximately 3,000 tons of ore per day are fed to the processing plant.



The ore is treated through grinding, flotation, pressure oxidation and carbon-in-leach circuits. Kittila has the company's only pressure oxidation circuit (autoclave), which is required because of the ore's refractory nature. Gold from the leach circuit is stripped from the carbon and recovered from solution using electrowinning, and then smelted in a furnace and poured into doré bars. Gold recovery of more than 89% is expected over the life of the mine.

The site contains adequate tailings storage areas and waste rock disposal areas for the highly contaminated waste coming from the extraction and leaching process. To ensure the environmental protection of the surrounds and water, more than 1.000.000m² of TERANAP 331 TP geomembrane have been delivered and installed on site. TERANAP 331 TP geomembrane has been specified by **Golder Associates** for its specific characteristics and performance to waterproof environmental protection installations:

- Robustness regarding the subgrade: no caution layer and less subgrade compaction on a very large area
- Ease of installation managed by local workers
- Resistance to chemical aggression
- Root piercing resistance
- Aging resistance
- For its suitability and installation under the demanding climatic conditions that are evident in the north of Finland

For more details on Teranap visit: www.teranap.com.au

