



## SOME LIKE IT HOT !

**Coletanche is not affect neither by the heat nor by the wind**

Two ponds ½ mile apart the same day exposed to same wind and temperature conditions

Coletanche will be present at the following meeting as a sponsor and as presenter of technical papers:

**Geosynthetics Mining Solution**, 8-11 September 2014, Vancouver Canada

<http://www.geosyntheticssolutions.com>

**Mining World Russia**, 18th International exhibition and conference, 9-11 April, 2014, Moscow Russia.

<http://miningworld-russia.primexpo.ru/en>

**7th International Congress on Environmental Geotechnics**, 10-14 November 2014, Melbourne, Australia.

<http://www.7icg2014.com/>



**HDPE liner:** wind uplift and wrinkles



**COLETANCHE® liner:** flat and smooth

Excessive expansion of a geomembrane when heated may lead to large wrinkles that

- may fold over when loaded thereby creating stress concentration at the fold

- reduce effectiveness of composite liner by losing contact with underlying soil

- create free flow conditions for water leaking through hole (Rowe et al in Geosynthetics International, 2012)

In addition exposure to heat accelerates antioxidant depletion in polymeric geomembrane and reduces their service lifetime

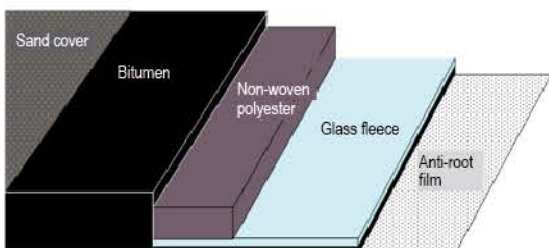
Because it is bitumen based and has a lower thermal expansion coefficient and higher melting point than polymeric geomembranes, **COLETANCHE®** is not affected by exposure to heat and can be used to line ponds or areas that

- that will be exposed to the sun and the element without deformation (wrinkling)
- that will store hot liquids
- where cleaning requirement and traffic access leads to laying down asphalt concrete

Other advantages of using **COLETANCHE®** to line ponds are:

- Chemical stability which allows storage of brines and most chemical products
- Density greater than one that eliminates the need for ballast

### COLETANCHE® a manufactured product



### COLETANCHE®

is a robust bituminous geomembrane that does not require a protective cover such as soil or geotextile and can stay U.V exposed.

**COLETANCHE®** is manufactured by impregnating a non-woven polyester geotextile with bitumen, and benefits from the low thermal expansion properties of polyester and bitumen when compared to polymeric geomembranes.



it will not melt, wrinkle, or deform when covered with the hot waste water. In addition since the density of **COLETANCHE®** is greater than one, it will not float. A concrete ramp and bottom slab were poured on top of **COLETANCHE®** to allow truck traffic for cleaning purposes.

### Store hot liquids

**Rusal Aluminates Plant, Ireland**  
This pond was designed to store waste water near boiling point (95° Celsius) from the treatment plant at the Bauxite mine. **COLETANCHE®** was used to line the pond because

### Covered with hot asphalt



Hot asphalt is applied on top of **COLETANCHE®** to provide a hard surface to handle heavy equipment and allow clean-up of surfaces.

High melting point of bitumen allows this practice.



▲ Air photo from Google Earth – Image © Digital Globe 2014

### Upcoming Applications

Lining of large ponds designed to store hot liquids such as flowback water from Coal Seam Gas or Shale Gas production which can reach temperatures between 150 and 200 degree Fahrenheit. Such large ponds exist in Queensland, Australia in the Surat Basin.

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