

# High Temperature Resistant HDPE Geomembrane



## Agru Celebrates One Year Anniversary of First High Temperature Resistant Liner Project

**The Problem:** The Ngatamariki Power Station needed a geomembrane that could withstand temperatures in excess of 80°C (176°F) for years. Standard HDPE geomembranes can't withstand sustained exposure to temperatures above 60°C (140°F).

**The Solution:** Agru, for many years, has created High Temperature Resistant (HTR) polyethylene piping for hot water applications. With this vast knowledge and experience, Agru developed the first known HTR HDPE geomembrane in the marketplace.



Primary Layer: AGRU HDPE Liner  
with nonwoven Geotextile 300g underneath

For many years, 60°C has been the recommended maximum sustained operating temperature for HDPE geomembranes. Temperatures in excess of 60°C have been known to accelerate the adverse effects of UV degradation, stress cracking, and oxidation on the performance properties of traditional geomembranes. While HTR polyethylene had been used by Agru successfully for many years in hot water piping applications, it had not been successfully applied to geomembranes until our innovative approach in 2012.

Early in 2012, Mighty River Power was facing a complex problem at the Ngatamariki Power Station in New Zealand, and they came to Agru for a solution. Their geothermal power station included a brine pond that required containment of near boiling water which was being pumped from underground to generate electricity at the nearby power station. After leaving the power station and entering the impoundment, the water temperature was still at 80°C. Compounding the issue was the fact that local regulations stipulated that the water be contained until it was cooled to 25°C (77°F) or below before it was released into local lakes and rivers. As the industry leader for innovation, Agru considered their options and collaborated with resin suppliers to develop a special grade of polyethylene that was suitable for long-term exposure in high temperature applications.



The result was a geomembrane that could withstand temperatures in excess of 80°C for years. **The installation was completed in October 2012 and Agru's HTR geomembrane is still performing as designed and is expected to do so for years to come.**

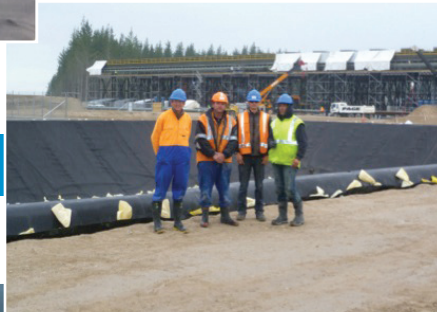
Drainage Composite on top of Primary HDPE Liner





Fiberglass Pipe OD 900mm

Installation team in front of lagoon



Ngatamariki Power  
Station in New Zealand

While Mighty River Power's brine lagoon only required resistance to a temperature of 80°C, Agru's HTR geomembranes are resistant to temperatures up to 100°C (212°F) depending on the specific application(s) and the desired service life. Agru's HTR geomembranes are designed to provide the same level of chemical resistance and performance properties for which Agru's traditional HDPE geomembranes have set the standard. Agru envisions that its HTR geomembranes will provide a long-needed solution for industries and applications where high temperature resistance is required including, but not limited to the following:

- Power generation facilities and geothermal systems applications
- Industrial waste water containment facilities and process water applications
- Bioreactor landfills and bio-solids management
- Oil and gas industries
- Mining operations and heap leach facilities

Agru welcomes the opportunity to speak with you about your specific requirements for our HTR geomembranes or any of your other projects that demand the quality found in Agru's extensive line of products.

***The Best Protection for Your Future!***

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