

**NEWHURST ENERGY FROM WASTE FACILITY  
NEWHURST, SHEPSPED, LEICESTERSHIRE, UNITED KINGDOM**

Lining Systems - Base

**Problem**

The Newhurst Energy from Waste Facility is located in the former Newhurst Quarry near Shepshed in Leicestershire and has been under construction since June 2020, with the build due to be completed in 2023. Once operational the facility will provide a vital outlet for the sustainable treatment of up to 350,000 tonnes of residual waste per year and will generate up to 42 megawatts of low-carbon energy – enough to power around 80,000 homes.

A large sprinkler system was installed as part of the incinerator fire protection system. An attenuation pond was required on-site to collect the water released in the event of a fire whilst also providing attenuation for the wider project drainage system.

Owing to the sandy ground conditions it was proposed to line the new attenuation pond with a geosynthetic clay liner.

**Solution**

Maccaferri proposed the use of its Macline GCL W20 to impermeably line the attenuation pond and this was accepted by client Hitachi Zosen Inova in April 2021.

Macline GCL W20 is a reinforced geosynthetic clay liner designed for landfill and pond lining applications. It consists of a layer of natural granular bentonite sandwiched between a woven and non-woven geotextile. When hydrated, the bentonite forms a thin clay layer to maintain very low permeability without the need to import large quantities of puddle clay and therefore offers a much more sustainable solution with a greatly reduced carbon footprint.

Concrete headwalls can easily be accommodated by applying layers of Macline GCL W20 around the headwall and sealing with bentonite granules also provided with the liner. Macline GCL W20 is self-sealing in the event of a puncture and has excellent slope stability and climatic resistance together with a high chemical resistance making it suitable for use in a wide range of ground conditions.

**Client:** Hitachi Zosen Inova

**Designer / Consultant:** Maccaferri Ltd

**Contractor:** Octopus Building Services

**Products used (Qty.)**

**Date of construction:** 04/2021 - 06/2023

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Macline GCL W20 patch panels placed to seal the interface around the headwall.



Macline GCL W20 installed and covered with minimum 300mm covering topsoil.



Macline GCL W20 being installed within the attenuation pond located to the rear



Macline GCL W20 is anchored at the crest of slopes in a trench.