

Bottom ash processing with the *Leaching Reactor*



The bottom ash processing in Switzerland

Every year, four million tons of waste are incinerated in solid waste incineration plants in Switzerland. This produces waste in the form of tons of bottom ash and filter ash. However, disposing of this bottom ash is a costly process.

The search for uses for bottom ash from solid waste incineration plants has a long history that continues to celebrate new breakthroughs. However, Switzerland remains one of the leading countries in bottom ash processing.

Bottom ash is usually buried in landfills. Throughout Switzerland, there are 28 such bottom ash landfills. However, space for new storage sites is scarce, and in some cantons, there is no longer any landfill capacity available.

The end product of solid waste incineration is called raw bottom ash and must be further processed in a bottom ash processing plant. Often the first processing is mechanical, whereby it is crushed and separated from metals, ferrous, non-ferrous, and organics substances. It then moves via conveyors to optical sorting to separate out materials such as glass or bricks. What remains at the end are minerals, such as stones. The whole process requires water, which is always reused in the cycle. This water must be continuously treated; this is where process water treatment comes into play. Finally, after the leaching reactor, was-

ewater treatment processes the water containing heavy metals and pollutants in such a way that it can be discharged into the surrounding waters.

The landfill bottom ash cause long-term polluted landfill leachate with dissolved carbons, metals, and salts. However, the treatment of the bottom ash is very costly in order not to endanger the environment with it.

The deposited landfill bottom ash contains high levels of metals such as iron, aluminum, copper, and other non-ferrous and heavy metals. By returning the metals to the material cycle, this loss of resources can be reduced, thus avoiding the environmental pollution associated with the primary production of these metals. In addition, the limited space available in landfills can be conserved. This not only reduces the loss of resources but also significantly reduces the environmental impact.



World novelty on the market

Leaching Reactor

We are proud to launch our first own residue treatment machine, which is also a world novelty: the Leaching Reactor for bottom ash processing. The machine is designed to extract pollutants from bottom ash by mixing the bottom ash with acid. With this new machine, AIK Technik AG once again demonstrates its spirit of innovation and invention.

AIK Technik AG has developed a new type of machine, as a specific component for bottom-ash processing, which can be used to further process bottom ash - a residual material from incineration plants. This is an important step towards sustainable disposal and recycling. The process is based

on chemical-mechanical treatment. Heavy metals can thus be dissolved out of the bottom ash (leaching). The leaching reactor is an important and forward-looking component in bottom ash processing plants. It is integrated into a specific module that supports the entire bottom ash preparation

process. The complete process enables bottom ash to be deposited in more favorable landfill classes or even recycled. The new process is an important innovation, providing a sustainable solution to a growing problem. In recent years, the amount of bottom ash generated by incinerators has increased sharply, and there is a growing shortage of type D landfills where the bottom ash is to be deposited in Switzerland. The new machine from AIK Technik AG offers an environmentally friendly and resource-saving solution to this problem.



R LEACHING
REACTOR
BY AIK TECHNIK AG

Swiss
Made



Process engineering of the Leaching Reactors

The Leaching Reactor will decontaminate the bottom ash mass to be landfilled and reduce it by at least 25%, thus substantially lowering environmental emissions. The Leaching Reactor will thus make a significant contribution to the protection of the environment.

years and is proud to now be able to launch the first residue treatment machine on the market. AIK Technik AG is convinced that this product will help to improve the recycling rate of bottom ash.

The novel technology of the Leaching Reactor for bottom ash processing by AIK Technik AG not only reduces the environmental impact but also reduces the costs for the bottom ash processing plants. The new Leaching Reactor has a capacity of 2 to 4 tons of bottom ash and has dimensions of 4.2 m x 3.0 m x 2.8 m and can be easily integrated

into existing plants. AIK Technik AG has succeeded in developing a machine that is not only environmentally friendly but also economical for the operator. We are therefore convinced that the Leaching Reactor has a great future ahead of it. AIK has invested massively in the research and development of different new technologies over the past



AIK Technik as a technology and system supplier

AIK Technik AG invests a lot in research and development. Through this action the company wants to be successful in the long run and to stand out from the competition. With the newly developed machine, AIK Technik AG sets new standards and expands its range of products in the field of bottom ash processing.

Research and development have always been an important part of our work. AIK Technik AG invests annually in new technology developments as well as in the optimization and further development of existing plants, components, and processes.

In doing so, our efforts are systematically directed toward new processes that could replace the current ones. We design the operating sequences of existing procedures and processes more efficiently in order to reduce material and energy requirements. Our plants embody sustainability, a real added-value for the economy, energy, and the environment.

Thanks to our own in-house laboratory, we are always in a position to carry out expert laboratory and operational analyses and to provide our customers with competent support and assistance in troubleshooting and process and operational optimization. We use different analysis methods (water, solids), which are successfully used in the optimization of existing processes as well as in the application of new process developments.

AIK Technik AG has recently developed the Leaching Reactor process. This innovative process makes it possible to design bottom ash treatment plants even more effectively and thus to further reduce environmental pollution. In addition, AIK Technik AG can provide its customers with optical

sorting, process water treatment and wastewater treatment modules.

AIK Technik AG also has its own spare parts warehouse. Services are therefore available at any time and the team is ready for action. Our after-sales service with the delivery and management of spare and worn parts is an integral part of our quality management and is highly appreciated by our customers.





AIK Technik AG
Allmendstrasse 6 | CH-6210 Sursee | +41 41 510 65 00
info@aiktechnik.ch | aiktechnik.ch | **Residue today, commodity tomorrow**

