

## Environmental Technology

# AVA Technology for Hazardous Waste Treatment

AVA has developed systems for pre-treating hazardous waste prior to incineration, which leads to higher throughput performance in combination with lower construction and maintenance costs and additional low pollution emissions, in comparison to conventional techniques. The system is based on the principal that constant gross calorific values and regular piece sizes together with consistency of the fuels being charged forms the basis for a highly effective incineration. Many of these pre-treatment plants for hazardous waste incineration have been successfully realised worldwide.

### The conventional method:

Direct charging of the materials into rotary furnaces

### The disadvantages:

- Uneven burning
- Large quantity of ash and cinders
- High maintenance for furnace lining
- High pollutant emissions
- High cost of incineration

### The AVA-System:

- Shredding + mixing + pumping of solid and liquid hazardous waste = even charging material by means of corresponding mixture
- Developed for waste pre-treatment before incineration by means of rotary furnaces
- Realised in worldwide plants with capacities between 0.5 and 10.0 t/h
- Flexible plant design both for the retrofitting of existing plants as well as for the construction of new hazardous waste incineration plants



**The advantages:**

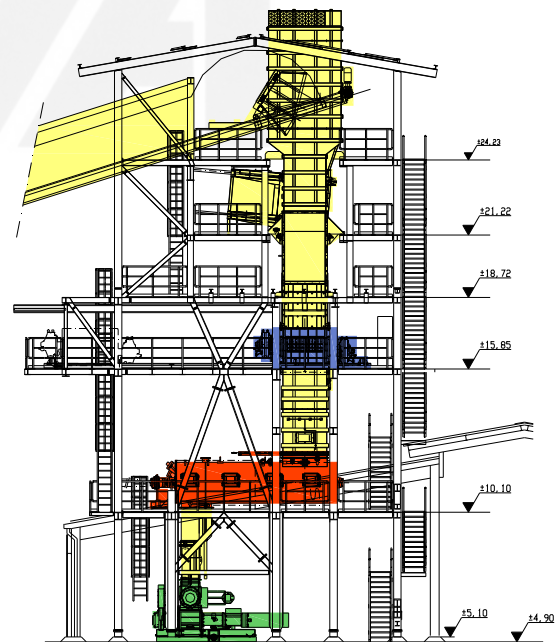
- 20 - 30 % higher throughput performance
- 20 - 30 % greater durability for the furnace lining
- 20 - 30 % lower pollutant emissions = higher yield at lower cost

Core process of the method is the continuous homogenisation of the hazardous waste. Instead of adding waste in batches into the furnace (which used to be the state-of-the-art), AVA mixing systems changed these input batches in to a waste menu with constant calorific value and steady chemical characteristics.

The simultaneous mixing and buffering of an input quantity of up to two hours – based on the throughput performance of the incineration plant - means that one is also independent of, for example, operating errors and delays during the charging of the plant. This means that the incineration plant is able to run 24 hours a day at highest throughput performance and at highest efficiency. The actual homogenisation of the waste is achieved by means of a single shaft mixer which is equipped with an adjustable weir. Charging flanges on the mixer can be used to add liquid waste into the mixing process. The addition of nitrogen prevents the creation of an explosion-prone atmosphere, which is also continuously monitored for safety reasons.



View into a running AVA 10 m3 mixer:  
Hazardous waste, during the mixing process after treatment by means of rotary cutter



Sketch of complete system "Shredding-mixing-pump"

AVA has combined this technology of its own with technology developed by selected partners for rotating cylinders and waste gas cleaning, in order to realize complete hazardous waste incineration plants.