

AKVO HOLDING PRESENTATION

Akvo Holding is a services company specializing in the recycling of steel dust, as well as related logistics and other related industrial services. Its activities are divided into two business units,

- RMM JSC (Recovery Mining Metallurgy) Steel Dust Recycling Services
- ATA KARBON JSC Hazardous Waste Transportation Services.

Ata Karbon

ATA Karbon Hazardous waste Transportation Services, provides integrated and custom-tailored logistic and residue management concepts as well as support for obtaining the required permits and notifications, which is a key part of AKVO's service business. These logistic concepts are focused on national and international transportation services for industrial residues, especially dusts, sludge's and slag's. The integrated logistic infrastructure of ATA KARBON provides a reliable removal of residues, a continuous supply of AKVO's operational sub-units as well as the marketing and the delivery of the recovered products of these sub-units. These services are also available to external customers outside the AKVO group.

Wherever viable ATA KARBON Hazardous waste transportation services relies on the railway system as an environment-friendly transport system. The company has its own railcars that are adapted to the product handling and the specific loading and unloading circumstances.

If necessary combined transports are executed by purpose-built containers for rail and road transports. Trucks are used only for the up- and downstream short-distance connecting transports.

RMM JSC

RMM JSC belongs to the business unit for recycling services for steel dust. It carries out the treatment and recycling services of carbon steel and stainless-steel dusts as well as of galvanizing residues.

Today, steel scrap recycling is of great significance to preserve natural resources and protect the environment. Around 70 % of the steel produced in Turkey stems from the recycling of steel scrap by the electric arc furnace (EAF) process. The off gases of this process are cleaned and 15 to 20 kg of filter dust are collected per ton of steel produced. About 90% of the annual quantity of the zinc-containing EAF Dust in Turkey are recycled in a Waelz process. In this process, a hazardous waste called "steel dust" is generated. AKVO services and recycles this hazardous waste.

RMM as a subsidiary company of AKVO operations achieve a dual environmental benefit: On the one hand, the deposit or landfill of EAF Dust is avoided; on the other hand, the mining of natural zinc resources is reduced.

RMM recycles more than 120 thousand tons of EAF crude steel dust, stainless steel dust and other zinc-bearing residues per year. Since second half of 2019 RMM operates a washing facility in the Baskoy Plant which processes to further upgrade the Waelz oxide

Dusts, sludge's, filter cakes and other zinc containing wastes, supplied by our clients in different compositions, are initially stored in closed silos or covered boxes. The intermediate storage capacity is equivalent to approximately one to two months' of production, depending on the facility production. In the first stage, these raw materials are mixed and pelletized with water, coke and lime to guarantee a homogenous feeding of the Waelz kiln. The micro-pellets are fed into the furnace either directly or via an intermediate storage. At kiln operating temperatures of approx. 1,200°C all volatile elements, mainly zinc, are transformed into the gas-phase and re-oxidized to Waelz oxide. By the off-gas treatment facilities the Waelz oxide is recovered and provided afterwards to the zinc industry as a secondary feed material.

By adding air to the charge at the end of the kiln, most of the iron reduced in the process is reoxidized to iron oxide (FeO). The heat of oxidation generated is used to preheat the entering fresh air and thus supplies the thermal energy required for the chemical processes in the reaction zone.

The RMM plant in Baskoy is using the double- respective triple-washing-process to purify the Waelz oxide.

Aiming to recover the EAF dust resulting from the production of the Steel Mill Companies in an eco-friendly and economical way, the company has a capacity to obtain around 40.000 tons of zinc oxide from approximately 120.000 tons of EAF dust per year.

Since the RMM JSC was established with an advanced and modern technology, it produces in a much more environmental and effective way than its equivalents around the world. Exporting our high grade materials to the foreign markets, the facility has been contributing to recycling and Turkey's economy since January 2017.
