

ACID MIST UNDER CONTROL IN COPPER
ELECTROWINNING PLANTS
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Acid mist control has been a severe problem in copper electrowinning operations around the world. The problem is becoming more relevant under the actual and future scenarios in which the production of copper using this route has increased dramatically in the last years. This in combination with environmental regulations are demanding the industry to explore for a definitive solution.

This paper reviews the different technologies available until the introduction of SAME's ventilation system where acid mist is captured at the source, virtually at the electrode level, by means of individual high efficiency hoods. The mist collected is exhausted through a series of ducts to the ambient after being processed through a high efficiency scrubber which releases clean and dry air to the ambient.

The technology was particularly introduced in plants located at high altitudes in the high Andes, above 3,500 m.a.s.l., where limits are stricter. Results obtained at these plants show acid mist concentrations inside the building are well below the limits.

Hoods are incorporated into the harvesting process and other operational activities maintaining the actual production cycles.

The control of acid mist in Copper Electrowinning Tankhouses produces a series of benefits such as: reduced corrosion of the buildings, savings in electrolyte heating needs, improves worker's comfort, etc. An important extension of the benefits introduced by the proper capturing and collection/cleaning of acid mist is the associated mechanization of the operations. As a result different equipments can be interconnected toward the full mechanization of plants.

Capturing the mist in existing plants allows marginal expansions using same cells and electrodes, provided the electrometallurgical parameters are maintained under control. Additional cells are not needed.

The success of the system verified in the plants actually using it, shall provide confidence to the industry which is facing new levels of emissions. Existing plants are also looking to this system as a means to meet actual non-compliance of environmental and hygiene regulations

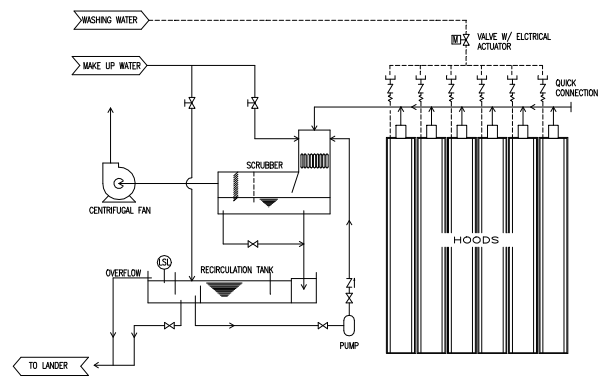


Figure N° 1: Flow Diagram

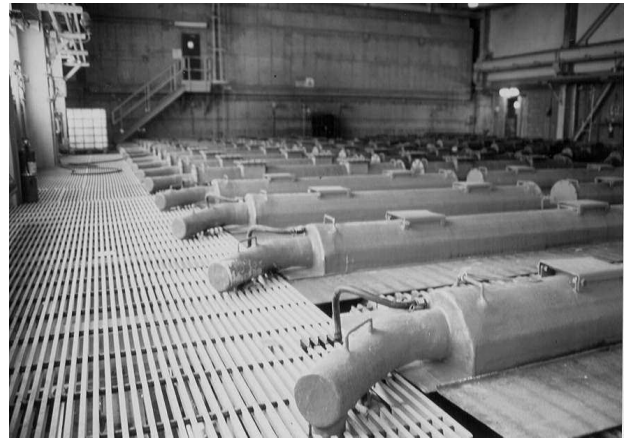


Figure N° 2 : Actual Hoods in Operation