

KUBAL – Aluminum Smelter Conversion



SCOPE OF VERKÍS SERVICES

- Management of the project on an EPCM basis
- Project, engineering, and construction management
- Area and package management
- Feasibility study, front end engineering and layout planning
- Preparation of technical specifications and tender documents
- Procurement management, bid review and participation in clarification meetings and contracting
- Logistics management, from vendors abroad to site and within the site

DESCRIPTION

The project scope included conversion of the Kubal aluminum smelter, Plant 2, from Söderberg pot technology to pre-baked anode technology. Simultaneously the potline current was increased to 160 kA and the existing potroom gas extraction, gas treatment system, alumina transport system and compressed air systems were de-commissioned.

New installations outside the potrooms included the following:

- Gas treatment facilities/ducts, including both dry and wet scrubbing
- Alumina transport system between existing alumina silos and the pots
- Rectifier transformers and harmonic filters
- Complete bath handling facilities
- Anode cleaning facilities and anode transport system between the rodding facilities and the potlines
- Equipment renewal / refurbishment in the anode rodding shop
- Compressed air system, including compressor stations and piping
- Service buildings e.g. temporary workshop, sandblasting shop and pot delining facility extension.
- Potroom roof ventilators
- HV and MV power distribution to new facilities, including partially new and partially upgraded substations
- Various site work to support the plant modifications

Potline conversion included re-fitting existing pots, installation of new superstructures, alumina pot-feed piping, installation of a pot-gas extraction duct, compressed air piping, potroom service cranes, pot tending vehicles, and refurbishment of the busbar system.

PROJECT OVERVIEW

Kubal is Sweden's sole producer of primary aluminum and has a capacity of 100.000 tons. Due to increased environmental requirements as well as efficiency and operability requirements, Kubikenborg Aluminium AB decided to convert Plant 2 from Söderberg pot technology to pre-baked anode technology and to increase the pot current from 120 kA to 160 kA. HRV Engineering, partly owned by Verkís, was contracted to manage the project in an integrated project team with the client's employees.

TECHNICAL INFORMATION:

- Number of relined pots: 262
- Pot current: 160 kA
- Production capacity: 120 ktpy

SCOPE SUMMARY:

- Alumina transport system
- Gas treatment center/system with dry and wet scrubbing
- Bath plant
- Anode palette conveyor
- P&F overhead anode conveyor
- Anode cleaning machine
- Rodding equipment upgrade
- Cast iron furnace and cooler
- Compressed air station/piping
- Pot delining building
- Rectifier transformers
- Harmonic filters
- Power distribution and substations
- Pot tending vehicles
- Potroom cranes
- Superstructures
- Potroom roof ventilators
- Sandblasting shop

