

NORÐURÁL – Aluminium Smelter



SCOPE OF VERKÍS SERVICES

- › Project management
- › Cost estimation
- › Civil engineering
- › Structural engineering
- › Mechanical engineering
- › Construction management and site supervision
- › Procurement management, tender documents and bid review
- › Contractor and vendor technical control
- › Quality control
- › Operation and maintenance documentation review

DESCRIPTION

Verkís was involved in all phases of the Norðurál Aluminum smelter project, via its partially owned subsidiary HRV Engineering. HRV's involvement in the project evolved from being a subcontractor in phase I to becoming the only EPCM service provider in an integrated team with the owner during the later phases.

Aluminum production takes place in two 600 m potrooms, each with 90 reduction pots, and two 900 m long potrooms, each with 130 reduction pots. The potrooms cover more than 50.000 m² in total. The two potlines include overhead pot tending machines, alumina conveying system, pot-gas extraction ducts, compressed air pipes, and a pot control system.

In addition to the potlines, the plant includes the following:

- › Alumina unloading, handling and storage facilities at the harbor, including vacuum ship unloader and harbor silos
- › Alumina conveying system from the harbor silos to the gas treatment centers
- › Gas treatment centers (dry) and associated ducting
- › Rectifier transformers with harmonic filters
- › Switchgear substation and main distribution system
- › Anode rodding and storage facilities, including butt crushing and bath processing
- › Casthouse to produce re-melt ingots and sows
- › Potline service facilities, including pot tending machine maintenance shop, and cathode de-lining and relining facilities
- › Compressor stations and associated piping
- › Warehouse and workshops
- › Administration and personnel facilities

PROJECT OVERVIEW

Work on the Norðurál aluminum smelter began in 1996. Phase I with 60 ktpy capacity was completed in 1999. Phase II with 30 ktpy capacity was completed in 2001. Phases III and IV with a combined capacity of 130 ktpy, was completed in 2006. Phase V was completed in 2007, bringing the total capacity up to 260 ktpy.

TECHNICAL INFORMATION:

- › Number of pots: 440
- › Pot current: 185 kA
- › Prod. Capacity: 260 ktpy
- › Four potroom buildings
- › Vacuum ship unloader
- › Harbor silos
- › Alumina conveying
- › GTCs
- › Rectifier transformers and harmonic filters
- › Anode rodding shop
- › Bath plant
- › Cast house
- › PTM maintenance shop
- › Compressor stations
- › Warehouse
- › Central/vehicle workshops
- › Potline office and control room
- › Administration building
- › Fuel and gas storage

