

ABIS

ANODE BUTT INSPECTION SYSTEM

A fully automated system for anode butt inspection

► How it works

Process parameters such as the shapes of anode butts, which provide useful information about the anode fabrication process or the conditions of the electrolysis process, and the thickness of the carbon that remains underneath the thimbles, which is an important parameter associated to the anode life cycle, are essential in terms of anode management. Anode butts can sometimes have abnormal shapes (defects) which could indicate the need to adjust the process parameters. Furthermore, the proper cleaning of the anode butts (removal of residual bath) is critical to minimize the sodium level in new anodes and to prevent problems such as cracks on the anodes and the reduced life expectancy of the anode baking furnaces.

Usually, only a few anode butts are inspected manually, mainly to check the carbon thickness. And it goes without saying that not much useful information is available from such an inspection scheme.

In collaboration with Alcoa Canada, STAS has developed the ABIS / Anode Butt Inspection System, a fully automated system using artificial vision to measure some geometrical characteristics of the anode butts. The main advantages of the ABIS are: characterization of all the anode butts processed at the rodding shop; identification of a certain number of defects; and monitoring of anode butt cleanliness according to the residual bath remaining on the surface.

This collection of information provides relevant information to optimize the fabrication of new anodes and the electrolysis process as well.

► Key features

Productivity Improvement

- All anode butts are inspected.
- Minimizes residual bath contamination in recycled material.
- Provides feedback on anode quality.
- Provides feedback on electrolysis conditions.
- Allows anode cycle optimization.
- Simple system, easy to implement and maintain.

Safe Operating Environment

- Fully automated system.
- No more need for manual measurements.



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