The EZINEX® Process – Five years of development from bench scale to a commercial plant

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The EZINEX Process has been initially developed in order to solve in an economical and comprehensive way the environmental problem related to the treatment of EAF dust. The magnitude of the problem has accelerated the development of the process. In a few years, it passed from laboratory bench scale to a pilot equipped with an industrial electrolysis cell, to an industrial prototype having a capacity of 2,000 t/y of zinc cathodes.

At this time, the plant that was erected at the Ferriere Nord mini-mill located in Osoppo, Italy, about two years after the start up, is working regularly and meeting the expected targets. In the meantime, other zinc-bearing materials have been tested in the plant with positive results.

This paper list the different types of raw materials which can be treated by the EZINEX process with particular reference to primary zinc calcine with a high content of zinc ferrite.

The EZINEX process, applied to this primary material, allows an energy saving of about 25% – 30%, if compared to the sulphate electrolysis route, and simultaneously solves the problem of the disposal of the iron residue.