

Nickel Smelter Intercooler Refurbishment

ID: 10316

Industry: Mining & Quarrying
Application: HEX-Heat Exchangers
Substrate: Carbon steel
Products: Belzona 1511 (Super HT-Metal), Belzona 1523

Customer Location: WA, Australia
Application Date: November 2022

Problem

Two intercoolers at a nickel smelter had suffered severe corrosion, resulting in a near-total loss of coating integrity and requiring refurbishment. The corrosion assessment identified extensive coating failure and significant corrosion of the main shell and internal components, including the cooling system support rails.



Nickel smelter intercoolers in need of repair



Significant corrosion of the main shell and internal components.



Pit filling and metal repairs undertaken with Belzona 1511.



Final application of Belzona 1523 applied to the intercoolers.

Application Situation

The refurbishment works were undertaken in collaboration with local contractors, with continuous operations maintained throughout a tight shutdown window. Careful planning, efficient execution, and close coordination ensured the repairs were completed safely, on schedule, and with minimal disruption to plant operations.

Application Method

First, pit filling and metal rebuilding were undertaken using Belzona 1511 (Super HT-Metal), a high-temperature repair composite for metal restoration and corrosion protection, applied extensively to the intercooler shells to address widespread pitting and substrate loss.

Once the substrate was adequately prepared and all significant metal loss rebuilt, all welds and hard-to-reach areas were stripe coated.

This was followed by the spray application of two coats of Belzona 1523, a high-temperature, corrosion- and chemical-resistant coating, to a minimum dry film thickness (DFT) of 500 µm using a heated-line mobile spray unit.

Belzona Facts

The project was successfully completed, with the result a high-quality refurbishment, delivering extended service life under the protection of Belzona's coating systems.

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ISO 9001:2015
FS 695214
ISO 14001:2015
EMS 695213

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