

Enhancing Nexa Resource's Waste Management Using Pexgol Pipes



Pexgol's piping system enabled Nexa Resources to revamp their waste management process, significantly reducing environmental impact.



Nexa Resources Brazil | 2023

• Working Conditions

Temperature: 25° - 38°C (77° - 100.4°F)
Flow rate: 190 - 260 m³/h
Pressure: 8 to 12 bar
Components: 18-25% cw - Density 1.18
Critical speed 1 m/s

• Pexgol Pipe

Pexgol 225 mm (3"), class 15

• Application

Zinc Slurry Transportation

• Length

1240 m / 4068 ft

The Challenge

Nexa Resources, a global mining and metallurgy leader, was seeking innovative ways to reduce the environmental impact of its Tres Marias mining unit, located in Belo Horizonte, Brazil.

An integral part of this plan involved a significant adjustment to their waste management strategy. The team aimed to eliminate the existing tailings dam by transporting a mixture of dam water and pulp to a filtration plant. Here, the water was to be separated and reused, and the pulp transported to a drying plant for repurposing. However, the transition necessitated a reliable, resilient, and efficient piping system that could support the transportation of pulp—a zinc hydrometallurgy waste—over a distance of approximately 1240 meters (or about 4068 feet).

The Solution

Pexgol was chosen as the ideal solution for this challenging operation. Two pipe dimensions—Pexgol 180 mm and Pexgol 250 mm, class 15—were provided in coils ranging from 200 to 300 meters (approximately 656 to 984 feet) each. These pipes proved perfect for the task at hand, with a fluid temperature tolerance between 25-38°C (77-100.4°F), a flow rate of 190 - 260 m³-h, and pressure between 8 to 12 bar. Pexgol's advantages—fast installation and provision of longer lengths—made it an optimal choice for Nexa Resources.

Though initially, there were complications with the electrofusion connections due to the contractor's unfamiliarity with the process, the Pexgol technical team's support enabled successful completion of the task. The pipe ends were placed at "registry points" to monitor their operational efficiency, further ensuring a smooth and successful transition.

Pexgol's solution effectively supported Nexa Resource's commitment to sustainable mining, providing a reliable, efficient, and durable pipeline for their new waste management process.



The Advantages of Pexgol Pipe Systems



High resistance to wear

Pexgol is the preferred solution for abrasive materials transportation. Typically resists three times more than HDPE and twice more than steel.



Superb internal and external corrosion resistance

Our pipes are proven to withstand decades of exposure to corrosive environments, with nonstop performance in some of the world's harshest environments.



Excellent chemical and corrosion resistance

Pexgol pipes can resist a wide range of chemical agents, slurries, toxic and radioactive materials.



Long pipe sections

Pexgol pipes can be supplied in long coil lengths, reducing number of joints, installation time and risks.



High temperature resistance

Working temperatures can range from -50°C/-58°F up to 110°C/230°F.



Creep and impact resistance

Pexgol pipes can withstand high amounts of axial and radial stresses and are highly resistant to impact, fracture and fatigue. Furthermore, Pexgol pipes are completely resistant to cracks even when dragged over sharp rocky terrain and coagulated salt crystals.

For more information please visit:
pexgol.com

