

Unmatched Durability in Harsh Slurry: Pexgol Outperforms Steel



Trial Demonstrates Superior Wear Resistance in Sea Water + Ash Slurry Conditions.



Tata Power
India | 2023

• Working Conditions

Temperature: 45° to 52°C
Flow: 515m³/hr
Pressure: 1.5 bar
Fluid Component: Sea water with 30% ash solids

• Pexgol Pipe

Pexgol 280 mm

• Application

Slurry Transport

• Length

6 m / 19 ft

The Challenge

In a coastal mining facility, ash slurry—created by mixing sea water with 30% ash solids—was being transported at a flow rate of 500–550 m³/h. The abrasive nature of the slurry, combined with particle sizes ranging from 110 µm to 450 µm (and occasional lumps up to 50 mm), caused accelerated wear in the steel pipes traditionally used on site.

Steel pipelines suffered consistent erosion, requiring frequent maintenance and patchwork to remain operational. With ambient temperatures between 45–52°C and system pressure not exceeding 1.5 bar, the environment added thermal stress but remained within moderate pressure limits.

The client needed a more durable solution that would extend maintenance cycles and reduce operational interruptions.

The Solution

A Pexgol pipe with 280 mm OD and 200 mm ID was installed as a trial section for ash slurry transport. The trial, conducted between April 2023 and December 31, 2023, involved a 6-meter pipe segment operating under full system conditions.

After 9 months of continuous operation, the pipe was returned to the supplier's warehouse for post-trial inspection. Dimensional analysis confirmed almost no erosion. Measurable wear was not observed on the internal diameter.

Compared to the previously used steel pipes—which showed visible wear and required repeated repair—the Pexgol solution offered unprecedented durability. According to the client's certification and field data, over 85% of the solid particles in the slurry were under 100 microns, which are typically the most erosive. Even under these harsh slurry conditions, Pexgol maintained its structural integrity.

This successful trial validated Pexgol as a high-performance alternative to steel, capable of handling high-solids, abrasive slurries with minimal maintenance and downtime.

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

