



Replacement of carbon steel pipes by Pexgol pipes for tailing lines.

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Ambatovy
Madagascar | 2017

Working Conditions:

Pressure 800Kpa
 Slurry concentration of 35% solids
 Temperature: 70°C to 80°C
 Contain (NH4) 2SO4.
 PH 6-8.
 Flow 3,200 m³/h (2.3 m/s)

Pexgol pipe:

Pexgol 630 mm, Class 15

Application:

Tailing lines

Length:

720 m

The Challenge

Ambatovy for its nickel mine has 15 km of tailing lines. The tailing distribution lines are made of DN700 carbon steel and these pipelines suffered from repetitive and frequent failures.

These failures were because of the effect of erosion, mainly due to the high liquid velocities inside the pipeline, especially in those areas where there is slack flow in the line.

To a lesser extent, further thinning of the pipeline wall occurs, due to the presence of the highly corrosive ammonium sulphate salt (NH₄)₂SO₄. The frequent failures prompted the decision to replace the carbon steel tailing pipeline with Pexgol pipes.

Pexgol Solution

After designing the lines in cooperation with Paterson & Cook, Ambatovy decided to install Pexgol 630 mm pipes in 2017.

The pipes were installed down hill from the pumping station where velocities are high. Testing the wall thickness periodically showed minimum effect of wear on the installed Pexgol pipes.

Another advantage that Ambatovy pointed out as a reason to use Pexgol systems is the simplicity of dismantling and reinstalling Pexgol pipes when raising the dam's level, which saves time and money if comparing this to doing it with carbon steel pipes or carbon steel lined pipes.



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Old carbon steel pipes for the tailing line



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Advantages

- **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.
- **Excellent chemical and corrosion resistance:**
Pexgol pipes can resist a wide range of chemical agents, slurries, toxic and radioactive materials.
- **High temperature resistance:**
Working temperatures can range from -50°C/-58°F up to 110°C/230°F.
- **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.
- **Long pipe sections:**
Pexgol pipes can be supplied in long coil lengths, reducing number of joints, installation time and risks.
- **Creep and impact resistance:**
Crosslinked 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.

