

Vertical Solution for Mine Dewatering in Fresnillo



A Challenging Project That Eliminated Booster Stations Thanks to Pexgol's Flexibility.



Fresnillo Mexico | 2025

• Working Conditions

Temperature: 30°C / 86°F
Flow Rate: 120 m³/hour
Pressure: 224 psi
Fluid Components: Mine water

• Pexgol Pipe

Pexgol 6", SDR 9

• Application

Underground mine dewatering

• Length

Two coils of 150 meters each (Total:
300 m / 984 ft)

The Challenge

Minera Fresnillo Plc, the world's largest silver producer and one of Mexico's top gold producers, faced a new challenge in its underground operation at the San Alberto Ramp. It was necessary to pump mine water from level -695 to level -610, where infrastructure already existed to convey the water to the surface.

Traditional solutions involved installing conventional piping along horizontal tunnels, which meant greater distances, higher energy consumption, and the need for intermediate booster stations. Additionally, the environmental conditions—temperatures up to 32°C and 100% relative humidity—added complexity to the project.

The Solution

Thanks to the unique properties of Pexgol 6" SDR9 pipe, a direct vertical installation of 130 meters (426 ft) elevation difference was implemented through two 10-inch boreholes, without requiring perfect borehole alignment. The system's flexibility and mechanical strength allowed it to adapt precisely to the borehole conditions.

The installation was executed with a single submersible pump located at level -695, which pushed the water directly to level -610, completely eliminating the need for intermediate booster stations. Main accessories included flanged couplings and load clamps.

Despite high humidity and limited tunnel space, the installation of both lines was completed in just 10 effective hours. The pipes were unrolled and inserted simultaneously into the inclined borehole without compromising personnel safety.

A key factor in the project's success was the technical support provided by the Pexgol team. Given the lack of prior experience with vertical installations, training sessions and planning meetings were conducted weeks in advance, ensuring the crew was fully prepared and confident to carry out the installation.



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