



Drainage in underground mine with slopes between 40° and 90°.

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NEMISA Mine Mexico | 2018

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Working conditions:

Pressure between 15 and 30 bar,
temperature at 40°C

Pexgol Pipes:

Pexgol 120 mm (4"), Class 15, 24 & 30

Application:

Underground Mine Dewatering

Length:

4430 m

The Challenge

At NEMISA underground mine, groundwater levels were rising, interrupting production and avoiding continuity and exploration in the mine.

Taking into account the complex topography and depth of the mine, where the water was at 700 meters depth, a pumping system which could work at high pressures to move the water through pools at different mine levels. The slopes inside the mine ranged between 40° and 90°.

The challenge was to find a pipe with high pressure resistance as well as high flexibility, since the pipes had to cross cesspits.

The NEMISA engineering team evaluated different options for the pipe material:

- Steel: was not suitable since it is not flexible, expensive to install and suffers easily from corrosion.
- HDPE: was not suitable since it doesn't withstand high pressure and installation would have been complicated.
- PE-X: was chosen due to its high pressure resistance, its simple and fast installation, and its availability in pipe sections of 1200 meters.





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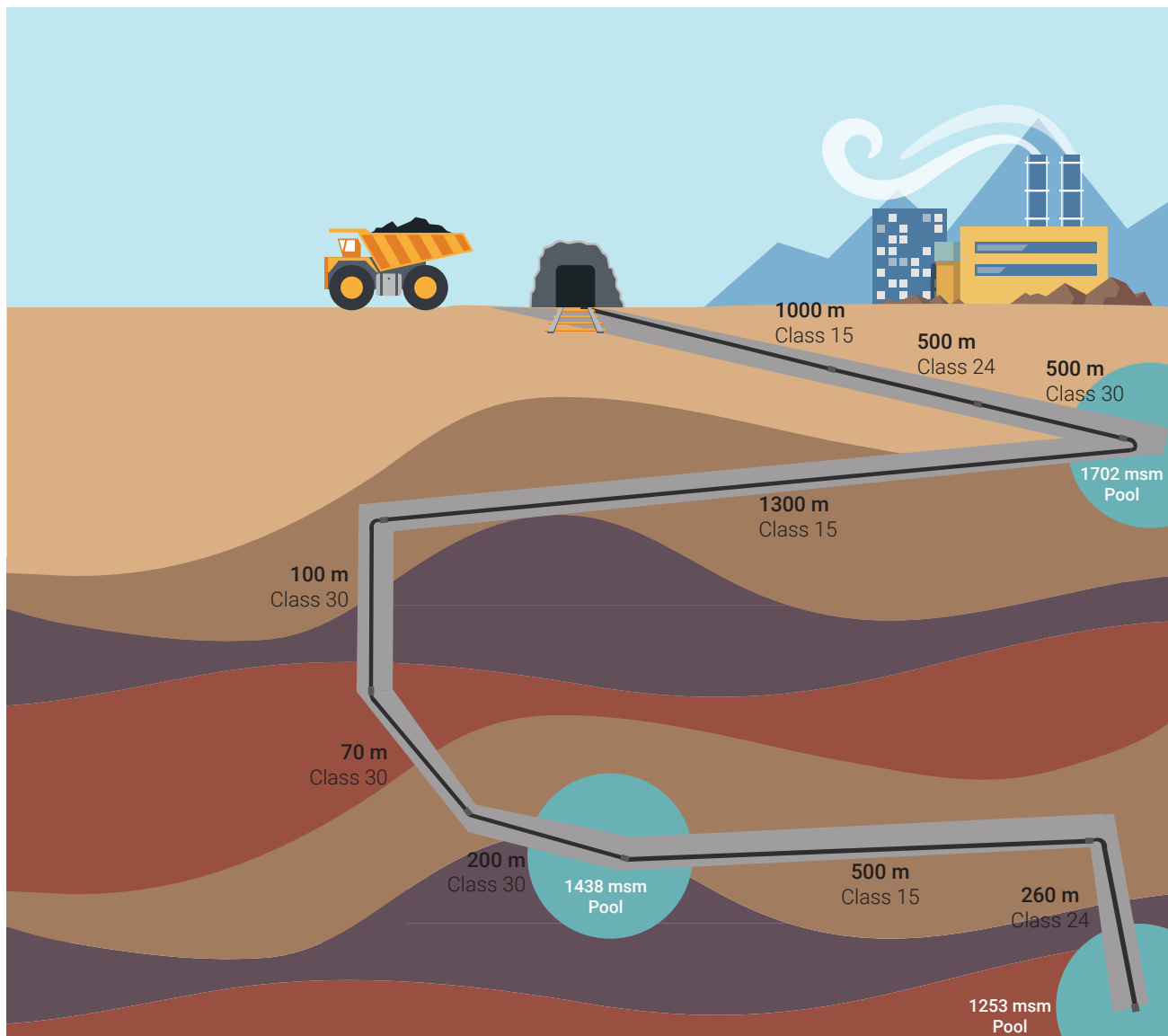
Pexgol Solution

After choosing the PE-X for the drainage line, Pexgol supplied 4400 meters of coiled pipe. Part of the coils were deployed inside the mine through cesspits. The other part was deployed outside the mine, and the pipes were dragged by a truck hundreds of meters to the point of installation.

The installation required very few connections, and the operators of the plant were very satisfied with the speed and ease of installation of the Pexgol system. The connections were made with flanged couplings and did not require special tools.

It was not necessary to install any kind of pipe supports, the mine ramps were used as existing supports.

NEMISA was very satisfied and decided to continue using Pexgol for other dewatering applications.



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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's pipes can be supplied in long coil lengths, reducing number of joints, installation time and risks.
- **Creep and impact resistance:**
Pexgol's crosslinking piping solution can withstand high amounts of axial and radial stresses and is highly resistant to impact, fracture and fatigue. Also is completely resistant to cracks even when dragged over sharp rocky terrain and coagulated salt crystals.

