



Installation of Pexgol hanging pipes in underground mine

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Codelco Chuquicamata
Chile | 2017
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Working conditions:

Extreme temperatures -10° to 40°C

Pipes used:

Pexgol 250 Class 19 (SDR 9)

Application:

Mine Dewatering

Length:

1400 meters

The Challenge

The Chuquicamata mine needed to draw water at the lowest levels of the mine in order to keep it functioning. Commonly HDPE was used for this task, but the client this time required a fast and economical installation; two things that are not possible with this type of material.

The Solution

When this problem arose, the engineering company NBI (Grupo Astaldi), which was in charge of the project, decided to install Pexgol pipes to carry out the drainage.

The pipeline was connected with mechanical couplings to an existing HDPE pipe, which was then hung at 3 meters high with mining bolt supports.

The same activity carried out by HDPE pipes used sections of 12 meters, with mechanical couplings joints, which have greater potential for faults in the line. Thanks to the flexibility and capacity of the Pexgol pipes to be delivered in long stretches, the installation took considerably less time.

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Pexgol vs HDPE pipeline performance summary by NBI



Pexgol pipe installation performance (200 meter sections):

	Units	Quantity	Time (h)	Effective Time (h)
Positioning (from the floor to the support)	m	200	16	16
Alignment (15 ° slope)	m	200	5	5
Connections (between pipes)	un	2	7	7
Joints	un	2	7	7
Total Hours			35	35
Total Days			1,5	3

Performance of HDPE pipe installation (12 meter sections) with Victaulic joints:

	Units	Quantity	Time (h)	Effective Time (h)
Positioning (from the floor to the support)	m	12	2	2
Alignment (15° slope)	m	12	2	2
Connections (between pipes)	un	2	6	6
Joints	un	2	4	4
Total Hours (12 m)			14	14
Total Hours (200 m)			238	238
Total Days (200 m)			10	20



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Differential Pexgol vs HDPE pipes by NBI



- The assembly performance of Pexgol pipe is at least 7 times higher than HDPE in operations inside an underground mine.
- The pipe can be dragged (2 to 5 km) into the mine without suffering any damage.
- The flexibility of the Pexgol pipe, allows the assembly in the walls of the tunnel, 3 meters above ground level. It is much easier and faster, because it can adapt to the irregularities of an underground mine.
- Pexgol possesses greater operational reliability when reducing connections.

WATCH UNCOILING PROCESS VIDEO

WATCH INSTALLATION VIDEO



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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 lengths coils, 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 are highly resistant to impact, fracture and fatigue. Also are completely resistant to cracks even when dragged over sharp rocky terrain and coagulated salt crystals.

