Transportation of Ore Slurry

Case Study | No.10

Replacing steel pipes suffering from sediment formation

RUSAL,
aluminum factory
Russia | 2012

Working conditions:

Specific gravity was 1.510-1.550 kg/l, pressure 2 Bar (maximum 3-4 Bar), temperature of 99°C. Chemical composition: Na2O, Al2O3, F32O3, SiO2, CaO. Flow rate: 180M3/H

Pipes used:

160 mm class 15 (SDR 11)

Application:

Industrial

Length:

15 meters with flared ends

The Challenge

The main challenges were corrosion and scaling formation on the inner surface of existing steel pipes, causing a decrease of inner diameter of the pipes and consequent decrease of their throughput ability.

The Solution

Replacement of the existing 159 mm steel pipe with a 160 mm class 15 (SDR 11) Pexgol pipe.
The test line consists of three parts: One section is a white G-Pex pipe manufactured in Moscow, approximately 12 m long. Two more sections are 0.5 m long, each of black Pexgol pipe with flared ends, manufactured in Golan Plastic Products, Israel. These sections were connected by Plasson's Electro-fusion Pex-2-Pex couplers.
During the entire operation the pipe was under continuous vibration because of a grinder operation.
The pipe was installed by the field team of Polimerteplo Group Llc accompanied by the field installation engineer of Gloan Plastic Products Ltd.

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PEXGOL X-LINKED PIPING SOLUTIONS

Replacing steel pipes suffering from sediment formation

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 non-stop performance in some of the world's harshest environments.
- **Low weight:**
  Compared to steel or rubber, Pexgol's solution results in reduced transportation, storage and labor costs due to lower weight per meter.
- **Long pipe sections:**
  Pexgol's pipes can be supplied in long lengths coils, reducing number of joints, installation time and risk.
- **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.
  Our pipes are also completely resistant to cracks – even when dragged over sharp rocky terrain and coagulated salt crystals.

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