Transport of hot air for advanced agriculture

Case Study | N°113

Replacement of PVC piping for PE-X in a industrial heating system.

Teva Post

Israel | 2022

Working Conditions:

Pressure: 2.5-3.5 bar
Temperature: 50° to 70°C / 122° to 158°F

Pexgol Pipe:

Pexgol 160 mm (6"), class 15;
Pexgol 75 mm (2"), class 15

Application:

Industrial heating system

Length:

500 m / 1640 ft

The Challenge

Teva Post factory is the exclusive producer of the champignon mushrooms under the brand "Marina Peyrot HaGalil" in Israel.
The mushrooms at Teva Post are grown and cured at closed growing rooms in plastic trays on self-made "compost" substrate and under very controlled and precise lighting, humidity and temperature conditions.

The cooling to the breeding rooms is carried out by a central heating system that feeds industrial air conditioning units (evaporators and blowers) that convert the temperature from hot to cold by condensing the hot water (50° to 70° C) and push cooled air into the cells in use without the need for gas compression, similar to conventional air conditioners.

The hot water is flowed to the cooling/conditioning units in a closed circulation piping (2.5 to 3.5 bar) system and energy activity in the whole system is controlled by thermal sensors inside the mushroom growing rooms.
The original hot water transmission system was installed in PVC piping that twisted and collapsed completely when, as a result of a sensor error, the temperature in the system momentarily climbed to 90°C.

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Pexgol Solution

After the original PVC pipes collapsed, the client decided to install in the main transmission lines with Pexgol 160 mm, class 15 and in the supply pipes to the cooling units, Pexgol 75 mm, class 15 due to the piping ability to be used at high temperatures up to 110°C.
The installation was easily done using Reinforced EF Couplers Series 1 connectors.

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PEXGOL X-LINKED PIPING SOLUTIONS

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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.