

Scaling Up Efficiency: District Energy at Penn State Harrisburg



A Two-Phase Installation for High-Temperature Hot Water Supply & Return.



Penn State University- Harrisburg USA | 2021

• Working Conditions

Temperature: 98°C / 210°F
Pressure: 130 psi

• Pexgol Pipe

Pexgol 9" & 14"

• Application

District Energy Network

• Length

Significant

The Challenge

Penn State University Harrisburg required a reliable and efficient solution for its High-Temperature Hot Water Supply & Return (HT-HWS&R) system. The university needed a durable piping system capable of withstanding continuous high temperatures of 210°F at 130 psi while ensuring long-term performance with minimal maintenance. The solution had to be implemented underground, with direct burial, making resistance to environmental and operational stress a key requirement.

The project was executed in two phases, with Phase 1 completed in 2021 and an expansion (Phase 2) successfully implemented in 2023. With the growing infrastructure needs of the campus, further installations are anticipated in the future.

The Solution

For Phase 1 of the project, the university selected Pexgol 225 mm (9" Nom.) SDR 6 piping. The pipes were supplied in coils, allowing for efficient installation with minimal joints. The system was buried directly, with field-applied closed-cell spray foam insulation to ensure energy efficiency and temperature retention. Since its commissioning in 2021, the system has provided reliable service.

Following the success of Phase 1, Phase 2 was initiated in 2023, incorporating larger Pexgol 355mm (14" Nom.) and 225mm (9" Nom.) SDR 6 pipes. Like the first phase, the pipes were delivered in coils for direct burial, reducing installation time and costs while maintaining the same high-temperature and pressure resistance. The field-applied spray foam insulation continued to enhance thermal efficiency.

Penn State Harrisburg continues to expand its district energy network with Pexgol solutions, with additional phases expected in the near future. This project showcases Pexgol's ability to meet demanding, long-term district heating requirements with efficiency, reliability, and cost-effectiveness.



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

