Pexgol Piping Solutions

Infrastructure **Applications**

2019

PEXGOL
X-LINKED PIPING SOLUTIONS

Index

PIPES AND PEXGOL SOLUTIONS | 04

PRODUCTS | 05

APPLICATIONS | 08

FITTINGS & CONNECTIONS | 20

AVAILABLE DIAMETERS | 24

Pipes and **Pexgol solutions**

Pexgol, a division of **Golan Plastic Products**, is a global leader of heavy duty PE-Xa pipes.

Pexgol pipes are produced from a special high density polyethylene (HDPE) with a very high molecular weight. During production the raw material is pressed under high temperatures and pressures and while the pipe is being extruded the material crosslinks resulting in an unbreakable chemical cross-connection between polyethylene chains.

Pexgol cross-linked polyethylene pipe system offers an excellent solution for the transport of liquids and other substances that require great chemical and mechanical resistance.

Pexgol presents a wide range of products that respond to different needs and applications for infrastructure applications.

Products

PEXGOL **TECHNICA:**

PEXGOL **ENERGY:**

PEXGOL **TERRA:**

Applications

1. POTABLE WATER

Potable water is limited resource in the planet. Delivering it from one point to the other requires a **reliable system to avoid losses and leakages.** Together with keeping it safe from possible contamination.

Old technology pipe material (PVC, HDPE or fiberglass) is more sensitive to cracks causing leakages compared to PE-X material.

Corrosion, as it occurs on ductile iron pipes, leads to constant pipe replacement and undetected leakages.

For waterworks, **durability and corrosion resistance are the cornerstone of true sustainability and strength**. Pexgol systems provide a resilient and high-quality option, making it ideal for long-term asset management.

Pexgol offers a complete solution for transporting potable water on:

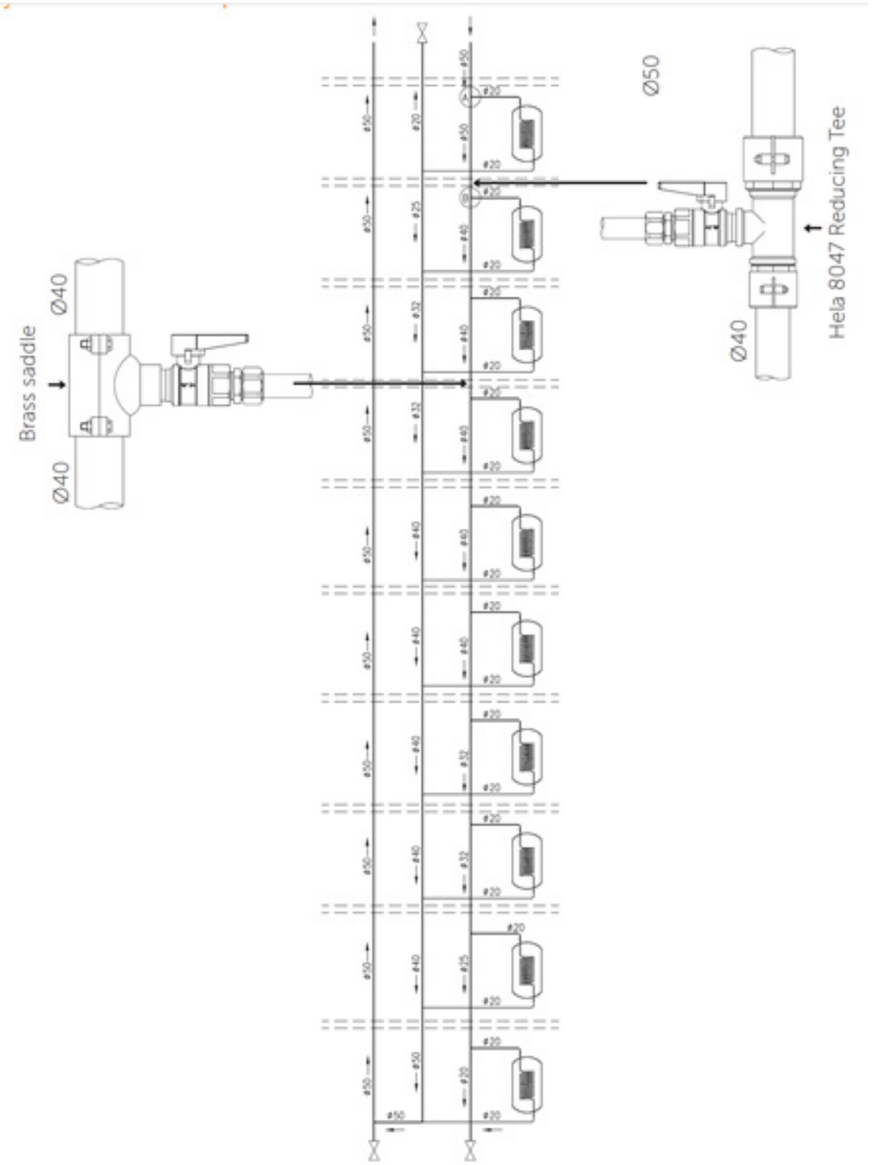
- Municipal network
- Distribution network
- Risers

Main advantages of Pexgol systems for potable water:

- Pexgol pipes have a proven s**ervice history of over 50 years** worldwide.
- **Resistant to high pressures**.
- Can **withstand water hammer** up to 2.5 time the nominal pressure.
- Resistant to the slow formation of longitudinal cracks and cracking.
- Pexgol pipes possesses **ultra-smooth surface** preventing sedimentation.
- Fast and reliable instalation.

Thanks to it's capabilities, Pexgol pipes has an incredible resistance and **can be towed to and inside trenches** without damages. Furthermore it allows an **installation without sand embedding.**

RISER SYSTEM
INSTALLATION EXAMPLE



2. GAS

Pexgol pipe systems are suitable for conveying natural gas.

- Complying with API 15-PX for conveying gas in underground, above ground and re-liner applications as well as complying with ISO 14531 requirements.

- High range working temperature:
  - **ISO 14531**: -50°C up to 60°C (for exposed pipes)
  - **ASTM F2818**: -50°C up to 90°C
  - **API 15-PX**: 10°C to 95°C

- **Superior abrasion resistance.**

- **Resistant to slow crack growth**. Pexgol's molecular structure ensures resistance to stress and cracks, preventing the potentially dangerous leaks of gas.

- **No RCP failures.**

- Long length pipe sections.

- **No need for sand embedding.**

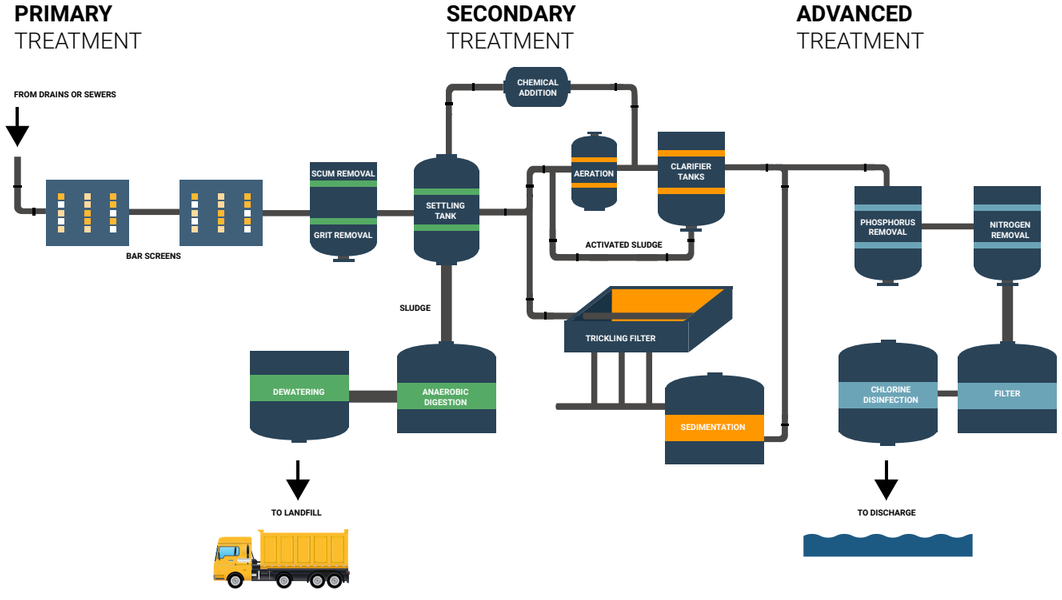
3. WASTEWATER TREATMENT

Wastewater treatment plants are extremely corrosive environments. During the treatment process, piping systems convey wastewater with highly corrosive caustic chemicals. To keep wastewater treatment plants efficient and cost-effective, appropriate material selection is critical.

Pexgol pipes are made of **PE-X**, a high-performance industrial piping material specially engineered to meet the demands of wastewater treatment plants. PE-X is preferred because of its **resistance to more than 200 different chemicals** and withstanding temperatures up to 100°C.

Advantages of Pexgol systems for Wastewater Treatment Plants:

- Significantly lowers life-cycle costs over metallic systems.
- Requires significantly less maintenance than cheaper plastics.
- Endures internal and external corrosion caused by many chemicals.
- Blocks the degrading effects of chemicals, microorganisms and UV light.
- Ensures optimal flow rates with excellent hydraulic capabilities and pressure ratings.
- Achieves long-term performance with superior mechanical strength.
- Comes in diameters up to 710 mm (28”).
- Reduces installation time with a lightweight pipe and joining systems design that eliminating the need for complicated connection techniques.
- Meets and exceeds regulatory requirements, including international standards for potable water.
- Pexgol’s extraordinarily smooth surface prevents scale sedimentation.



4. SEWERAGE

Pexgol pipes are used in sewerage lines due to their **excellent chemical and abrasion resistance**. Its invulnerability to H_2S gases is one of its most remarkable characteristics.

- Since Pexgol pipes have an **internal smooth surface** (155 Hazen Williams coefficient) sedimentation is not an issue.
- **Are safe for transporting materials** that endanger public health.
- **Electrofusion and mechanical connectors** both ensure zero leakage.
- Pexgol pipes **can resist a wide range of chemical agents, slurries, toxic and radioactive materials**.
- Endures internal corrosion ensuring longer life span.

5. HYDRANTS & FIRE EXTINGUISHER SYSTEMS

Pexgol pipes are **suitable for fire extinguisher and deluge systems for large-scale buildings** such as Airports, Shopping Malls, Hospitals, Ports or high-rise buildings.
Thanks to its exceptional strength and flexibility, Pexgol is an ideal solution for fire protection pipe systems. Required by many countries, the system possesses the ability to withstand earthquakes or other earth movements.
We offer **special flange coupler fittings** with the ability to work at full temperature and pressure. They can be installed above and underground, withstanding corrosion, and no need for welding. The fittings allow cost and time saving.

Pexgol Advantages:

- The pipes are very resistant.
- Working temperature ranges from -50°C up to 110°C.
- Long length pipe sections: Continuous sections up to 1000 meters.
- 50 years operational lifetime.

6. CABLES & OPTICAL FIBER

Pexgol systems can be used to hold fiber optical cables and to protect below-ground electrical and telecommunications cables against mechanical damage from traffic and frost.

- In order to withstand the high thermal loads in high voltage applications in the long run, Pexgol offers **high temperature resistant** material.
- **Smooth internal surface** that allows dragging the cables inside the pipe causing less friction.
- **Robust material**: insensitive to nicks and scratches, high performance also at low temperatures, without becoming brittle or break.
- **Solid wall pipe**: good heat transfer relative to the total heat transfer coefficient to minimize power transmission losses.
- **Long length pipes up to 1000 meters.**

7. PRE-INSULATED APPLICATIONS

Pexgol designed a specific pipe for pre-insulated applications: **Pexgol Energy**. A **pre-insulated pipe** for buried or aboveground applications.
Due to its high temperature and pressure resistance, **Pexgol Energy** is suitable for CHP (Combined heat and power) Systems, Bio Energy and SCRS (Steam Condensate Return Systems).

Pexgol Energy is also suitable to **transport chilled and potable water distribution systems** above or below ground.

With superior durability and longevity combined with **low installation and operational costs**, Pexgol Energy is set to revolutionize the way systems are designed and operated in the energy transfer industry.

pexgol ENERGY

- **High-quality insulation:** lightweight and flexible.
- **Long coil lengths** up to 355 mm (14”), eliminating the need for many underground joints to protect against heat loss.
- **Fewer fittings and connections**, saving energy and costs while also limiting liability concerns.
- **Faster to install**; snakes around barriers, obstacles and corners.
- **Durable** in harsh environments.
- Freeze resistant.
- **Direct replacement for carbon steel and exotic pipe materials.**

Fittings & **Connections**

We offer a full piping solution that includes all kinds of fittings and accessories to provide and easy, cost-efficient and quick installation.

FLANGED COUPLERS

Available sizes from diameters 63 mm to 710 mm. **The flange has oval holes designed to fit most international standards**. The couplers can be used for the full range of temperatures and pressures, the same as Pexgol

Pexgol flanged couplers consist of either two halves or four quarters, depending on the pipe size.

PREFABRICATED ELBOWS

Prefabricated elbow**s** are produced from **Pexgol** pipes of all classes according to a proprietary process. **Prefabricated elbows** with flared-ends are available in any length between 50 mm and 710 mm. Each leg can be ordered with plain ends or with flared ends with or without flanges.

The length of each leg can be different. The elbows are produced with a tolerance of up to +5 degrees and +/- 10 mm in length.

FLARED END CONNECTORS

The **Pexgol pipe ends** are heated and flared by a proprietary process. The final pipe end is similar to a stub end.
The loose flange is usually mounted over the pipe during the flaring process. Alternatively, split flanges can be supplied to be mounted later.

Pexgol prepares flanges conforming to different standards.

ELECTROFUSION FITTINGS

Electrofusion fittings are used to connect Pexgol cross-linked polyethylene pipes (according to ISO 14531, part 2). The pipes and fitting are joined by electrofusion welding, creating a leak-proof seal. During the electrofusion process, a current is transported through a heating wire.
The surrounding material (around the wire) is melted, welding the pipe to the fitting.
Service temperature for the PE 100 electrofusion fittings is limited to 40°C. For higher temperatures Pex2Pex electrofusion couplers can be used.
Pexgol approves and supplies the following fittings systems and installation tools: Plasson, Friatec, GF/Wavin.

Available **Diameters**

An outstanding feature of the Pexgol pipe is its flexibility, due to the **cross-linked structure**. This structure enables the pipe to return to its original diameter after de-coiling. As a result, Pexgol is able to supply longer lengths of pipe, compared to other suppliers and types of pipes. Pexgol pipes can be shipped in coils, coils with cores and straight sections.

Pexgol pipes for infrastructure applications are available in diameters **from 63 mm (2”) to 450 mm (18”)**.

Pipe		Maximum Length per coil (m)
Outside diameter (mm)	Class	
63 (2")	12	4500
63 (2")	15	4500
63 (2")	19	4500
63 (2")	24	4500
63 (2")	30	4500
75 (2,5")	10	N/A
75 (2,5")	12	3300
75 (2,5")	15	3300
75 (2,5")	19	3300
75 (2,5")	24	3300
75 (2,5")	30	3300
90 (3")	10	N/A
90 (3")	12	2000
90 (3")	15	2000
90 (3")	19	2000
90 (3")	24	2000
90 (3")	30	2000
110 (4")	12	1300
110 (4")	15	1300
110 (4")	19	1300
110 (4")	24	1300
110 (4")	30	1300
125 (4")	12	1000
125 (4")	15	1150
125 (4")	19	1150
125 (4")	24	1150
125 (4")	30	1150
140 (6")	12	760
140 (6")	15	800
140 (6")	19	870
140 (6")	24	870
140 (6")	30	870
160 (6")	12	500
160 (6")	15	600
160 (6")	19	600
160 (6")	24	600
160 (6")	30	600
180 (6”)	12	380
180 (6”)	15	450
180 (6”)	19	500
180 (6”)	24	500

Pipe		Maximum Length per coil (m)
Outside diameter (mm)	Class	
200 (8")	12	v
200 (8")	15	300
200 (8")	24	300
200 (8")	30	300
225 (8")	12	142
225 (8")	15	230
225 (8")	19	280
225 (8")	24	280
225 (8")	30	280
250 (10")	15	135
250 (10")	19	230
250 (10")	24	230
250 (10")	30	230
280 (10")	15	108
280 (10")	19	150
280 (10")	24	160
280 (10")	30	185
315 (12")	15	55
315 (12")	19	90
315 (12")	24	90
315 (12")	30	90
355 (14")	19	50
355 (14")	24	50
355 (14")	30	50
400 (16")	19	40
400 (16")	24	40
400 (16")	30	40
450 (18")	24	34
450 (18")	30	34

About Pexgol:

Pexgol, a division of Golan Plastic Products, is the only worldwide manufacturer that specializes in large diameter, cross-linked polyethylene pipe systems, providing them to industrial, infrastructure, aquaculture and mining sectors throughout the world.

Pexgol Material: PE-Xa

Pexgol contains cross-linked connections which are chemically impervious. The results of this chemical reaction is the creation of a material which has extremely high structural integrity, combined with resistance to a wide variety of corrosive and weather conditions.

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