RoeVac® Vacuum Sewer Systems

Part 2:
Technical introduction, Benefits, Limitations, Application Fields



Our Technology

Key questions

- What are vacuum sewer systems?
- What are the advantages?
- How does it work?
- Application fields!

The conventional way





The conventional way





Our Technology – What are vacuum sewer systems

Vacuum sewer systems are...

- Collection Systems for domestic waste water
- Easy to install systems for waste water within low and medium dense residential, industrial, commercial or mixed use areas
- State of technology, eco-friendly, safe and operator friendly systems
- Alternatives for conventional gravity sewer systems under difficult conditions

Vacuum sewer systems are **NOT**...

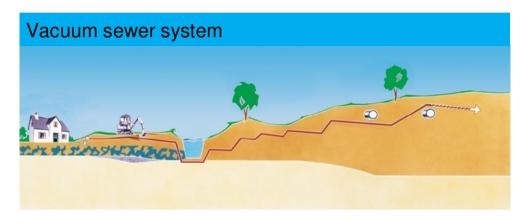
- Transportation system for waste water (pumping station replacement)
- Main collectors for large sewer systems

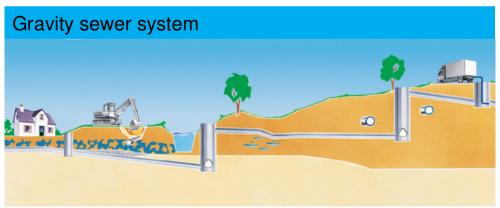
Our Technology – How does it work?

Please click on Image to start animation



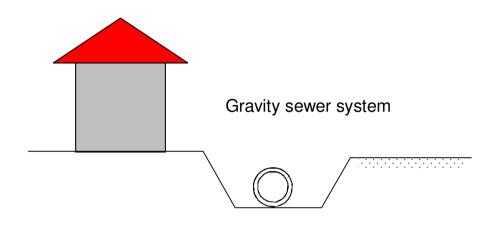
Our Technology – Advantages – Construction

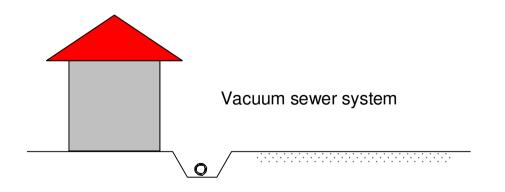




- Small pipes, flexible installation
- Shallow and small trenches
- No manholes, no lift stations
- Centralized vacuum station instead of many lift stations
- Saving of construction time
- Saving of construction and operation costs

Our Technology – Advantages – Construction





Gravity Sewer System

- Wide and deep trenches
- Average installation depth of 3 8 m or much more
- Large pipe diameters (200 1200 mm)
- Weak PVC or concrete pipes
- Heavy machinery required
- Manholes and lift stations required along lines

Vacuum Sewer System

- Small and shallow trenches
- Average installation depth of only 1.0 1.2 m
- Small pipe diameter (90 250 mm)
- Easy to install, durable HDPE pipes
- Simple or even no machinery for excavation
- No manholes, no lift stations

Our Technology – Advantages – Construction



Our Technology – Advantages – Operation

Worker suffocates to death in sewage hole

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- Centralized vacuum station: Energy supply, maintenance and operation from one central location
- Maintenance free pipe network, no sedimentation
- Minimum maintenance at vacuum valves and collection chambers
- Full remote monitoring of valves and vacuum station is possible
- No hazardous conditions for maintenance personnel (no manholes)
- Less H₂S and other fouling gases
- No dumping of solid waste possible
- Comparable low energy costs

Our Technology – Advantages – Eco Friendly





- Exfiltration free No contamination
- Infiltration free Reduced flows
- Minimum impact to the environment from construction
- Fresh water saving as no flushing is required for the pipe network
- Vacuum sewer systems are the only systems allowed to be installed in ecologically sensitive areas and drinking water protection zones
- Vacuum sewer system are the only systems allowed to be installed in the same trench with drinking water pipes
- No Odors

Our Technology – Application fields

"The more problems a gravity system has, the more interesting a vacuum system gets!"

- The following conditions will benefit a vacuum sewer system:
 - Flat terrain und lack of natural slope
 - Expanded municipalities with little flows and long distances
 - Resorts with little and seasonal flows
 - High ground water tables
 - Rocky, sandy or unstable underground
 - Ecologically sensitive areas
 - Limited construction space, existing infrastructure

Our Technology – Application fields

Typical and most common application fields

- Low dense residential, industrial, commercial or mixed used developments
- Holiday resorts with villas and bungalows and/or seasonal flows
- Marinas, Corniche promenades and harbours
- Rehabilitation of existing sewer systems
- Installation of sewer systems within existing developments (e.g.old town areas with septic tanks)
- Natural or artificial Islands, reclaimed land
- Flood areas or areas exposed to sea and river tides