

# Italian pumping station reduces clogging and maintenance costs with Xylem's compact Adaptive N™ wastewater pump

## The Via Visan Malo municipal wastewater treatment station operated without interruption for over 5,000 pumping hours with the new Flygt 3069 compact wastewater pump.

The Via Visan Malo municipal wastewater pumping station, located in Marano Vicentino, a small village in the province of Vicenza in Northern Italy, had been experiencing significant operational problems due to extreme clogging caused by the high levels of debris in the municipality's wastewater. In 2012, operators at the station agreed to install and trial a prototype of Xylem's new wastewater pump, Flygt 3069, in order to deal with these challenges and the partnership proved to be successful with clear and impressive results quickly noted at the station.

### The challenge

The biggest challenge facing the Via Visan Malo wastewater station in Northern Italy is the high concentration of solid and abrasive materials delivered to the plant by the municipality's wastewater system. In the past, these materials would cause the station's pumps to clog at least three or four times a year, requiring the station to undergo frequently unplanned and costly maintenance cycles. Maintenance operations at the station were so extensive that the pumps had to be physically removed and serviced up to three times a year, requiring operators to provide costly replacement pumps in order to avoid interruption to operations. Alto Vicentino Servizi, operators at the Via Visan Malo wastewater station, knew that a solution was required which would deliver reliable pumping and address mounting maintenance and energy costs.

### Clog-free pumping

Eager to address the costly unplanned maintenance issues caused by excessive clogging, the station operators agreed to trial Xylem's new Flygt 3069 pump over a four-year period. This unique pump is the first of its size to utilize Adaptive N technology with a capacity below 10kW. Normally, pumps will clog when solid objects pass through the pumps and may get caught on one of the leading edges of the impeller vane. Materials then slide towards the perimeter of the inlet and clog the system. With the revolutionary Adaptive N

**Customer:** Alto Vicentino Servizi, Vicenza region of Northern Italy

**Challenge:** To deliver clog-free pumping at a municipal wastewater station and reduce maintenance costs

**Offer:** Flygt 3069, a compact wastewater pump featuring Adaptive N™ technology

**Results:**

- Clog-free pumping with no emergency call outs
- Energy consumption reduced by 10%
- Reduction in overall maintenance costs



The Via Visan Malo pumping station, Marano Vicentino, Italy

technology however, solid objects will instead slide along the tip of the impeller vane inside the relief groove. A guide pin in the insert ring pushes solid materials away from the center of the impeller, along the leading edge and out through the relief groove. The impeller moves axially upward if required, allowing solid material and debris to pass through smoothly.

During the prototype's trial period, operators found that the compact pump provided continuous clog-free pumping, despite the challenging wastewater being processed by the station. Since its installation, it has operated without interruption for over 5,000 pumping hours, with up to ten system starts per day, over the prototype's five year tenure.

### Improving efficiency

The plant operators were also pleased to note that operational efficiency improved considerably at the wastewater pumping station as a result of the new technology. A buildup of debris over time slows down a pump's impeller efficiency significantly, making it work harder, which increases energy consumption. With the compact Flygt pump, stress on the shaft, seals and bearings is reduced, ensuring sustainable, low energy use. Since its installation at the Via Visan Malo pumping station, the new pump has also been able to handle a larger flow than that of its predecessor (10.5 liters vs 7.5 liters). Despite the increased flow, pumping time at the station is quicker and more efficient, leading to overall energy savings at the plant of at least 10%.

“At Xylem, we are committed to solving the most complex water challenges and we are pleased to have been able to support the Via Visan Malo wastewater pumping station to address chronic clogging issues. During the trial period, there were no reported incidents of clogging at the station, despite the challenging wastewater conditions”

Mario Gatti, GC Transport Manager at Xylem



Xylem's Flygt 3069 with patented Adaptive N™ technology