Two-Meter CIPP Giant, Zero Downtime: UV-Cured GRP Relines Main Collector in Belgium

Bypass of 13,000 m³/h: Pumping stations and pressure sewer pipes to divert the flow from the rehabilitation stretch to ensure continues flow towards WWTP

First in Belgium: a DN 2000 sewer collector that can’t stop for a second is being rehabilitated with UV-cured GRP liners. The unique twist? They have to keep a whole city running with a bypass of 13,000 m³/h while crews worked just before the treatment plant. To show how that’s engineered, international experts were invited on site. Amongst them: IKT’s Ashwini Ausekar, who shares insights from her site visit.

Belgian sewer operator Aquafin and their contractor TM Kumpen – Willemen Infra hosted a site visit for project partners and international guests at the wastewater treatment plant RWZI in Bruges, Belgium. They witness first-hand the renovation of the major sewer collectors serving 238,500 residents. Massive collectors (diameters 1500–2000 mm) that transport wastewater from the city and surrounding area are being structurally renewed.

Extracted piece of host reinforced concrete pipe shows corrosion with coarse aggregates and dissolved reinforcement bars.

This remarkable rehabilitation covers a total length of 156 meters, installed with a pull-in method and cured using 36 kW UV lamps progressing at approximately 45 cm per minute. The GRP liners, supplied by Impreg, were transported to site with a total weight of 100 tons.

Why Renovation Was Urgent

Inspection revealed that the reinforced concrete host pipes, originally 19 cm thick, had in some places been reduced to as little as 2 cm due to severe corrosion **caused by hydrogen sulfide (H_2S)**. In certain sections, reinforcement steel had already dissolved. Without intervention, the risk of sewer collapse and subsequent sinkholes would have been high, with major social, ecological, and economic consequences.

To guarantee continued wastewater transport during the works, a temporary bypass pumping system was installed, capable of **diverting up to 13,000 m^3/hour** to the treatment plant. This ensured uninterrupted operations while rehabilitation proceeded in 60-hour continuous shifts.

Details of the challenging CIPP rehablitation site in Bruges/Belgium are explained to visitors.

A Project of Exceptional Complexity

Christa Coppens, Project Manager at Aquafin, highlighted the unique challenges:

- Long and large-diameter (1500–2000 mm) pressure pipelines at depths up to 9 meters
- Highly permeable and potentially contaminated soil
- Strong H_2S formation and severe pipe deterioration
- Need for sustainable execution with minimal disruption
- Requirement to maintain continuous wastewater treatment plant discharge

100 tonnes on the way: the DN

2000 large CIPP liner from Impreg

Optimized CIPP Solution

Given the complexity, Aquafin opted for a competitive procedure with negotiation rather than a traditional open tender. This approach enabled contractors to propose optimized solutions within defined boundaries, fostering collaboration, trust, and innovation.

Relining with Quality and Safety at the Forefront

According to **Gert-Jan Merkx**, General Manager at Kumpen, success depended on combining technical expertise with strict safety management. Deep excavations, manhole rehabilitations, and access shafts were managed under stringent safety rules, with all site visitors wearing helmets, safety shoes, and high-visibility vests during the tour.

Danny Baeten, director of project management at Aquafin, delivering the welcome note to around 30 delegates from Europe

Quality control was also a priority: samples were tested, installation software protocols were monitored, and additional sensors measured UV radiation, viscosity, and temperature

development during curing.

Preventive Management Pays Off

Danny Baeten, Director of Project Management at Aquafin, emphasized the wider context:

“Every €1 invested in preventive management saves €3–5 in emergency repairs and damage. By renovating today, we safeguard public funds, protect past investments, and avoid costly surprises tomorrow.”

International experts visit the CIPP job site in Bruges, Belgium

The Flemish sewer network, valued at over €10 billion, faces increasing pressure from aging infrastructure. Proactive projects such as Bruges demonstrate the importance of timely rehabilitation to avoid ecological damage, sinkholes, and untreated discharges into nature.

An International Exchange of Knowledge

The site visit at RWZI Brugge welcomed over 30 delegates, including participants from the Netherlands (Arnhem), Germany, and Belgium. The group toured the site in teams of six, observing preparations such as the installed preliner, protective foils, and manhole laminations. Installation of the

impregnated GRP liner began the following day, with continuous work planned for 60 hours.

IKT’s Ashwini Ausekar visiting the rehabilition job site in Bruges, Belgium

During the visit, **Danny Verhulst** from Aquafin kindly hosted the tour in English, for Ashwini Ausekar. We had engaging discussions on innovation in sewer rehabilitation, particularly regarding corrosion and acid attack in concrete pipes – an issue of growing relevance across world. His openness in sharing expertise and perspectives made the exchange especially valuable.
Ashwini Ausekar was very impressed: “This project is a milestone for trenchless rehabilitation in Europe. The combination of scale, innovative UV-cured GRP technology, and the collaborative procurement model sets a new benchmark for complex underground infrastructure works. I am grateful to Aquafin and TM Kumpen – Willemen Infra for the kind invitation and warm hospitality, and especially to Danny Baeten and Danny Verhulst for making the visit both insightful and inspiring.”

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