

# Hot tap flowmeter installation at sewage plant

SITRANS F US ultrasonic flowmeters

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# water & WASTEWATER

Using the FUS880 retrofit kit from Siemens, the Rivierenland Water Board in the Netherlands installed ultrasonic flow measurement instrumentation into a DN 1600 pipe with no interruption to process flow.

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## Hot tap flowmeter retrofit

Measurement of water and effluent flow through a 1600 mm concrete pipe was required at the Nijmegen sewage treatment plant. Interruption of process flow to install a flowmeter was not possible and therefore a magnetic flowmeter was out of the question. The Rivierenland Water Board also considered a clamp-on flowmeter, but as the wall thickness of the concrete pipe was unknown, this would be a difficult and low-accuracy option.

The Siemens solution was a "hot tap" installation, where an ultrasonic flowmeter is installed whilst water is flowing through the pipe. The hot tap was performed using the FUS880 retrofit ultrasonic flowmeter kit, which when installed correctly, perform with accuracy almost as high as that of a magnetic flowmeter. As the pipe was made of concrete, direct welding of the flowmeter sensors onto the pipe was not possible, and a tapping band was therefore used to facilitate their installation. The installation took two days.

The Siemens Flow Instruments FUS880 1 or 2 track tapping band can be used in situations where ultrasonic transducers cannot be welded directly onto existing pipe, such as:

- Cast iron or ductile iron pipes
- Concrete or fiberglass pipes
- Ageing steel pipes where welding could cause premature failure.

Tapping bands are recommended for hot tap installation on all pipe sizes, from DN150 to DN400. During the hot tap, a pressure level of up to PN16 is permissible inside the pipe.

Siemens Flow Instruments provides a full on-site installation service.

## Rivierenland Water Board

Waterschap Rivierenland, also known as The Rivierenland Water Board, is an independent Dutch administrative water authority with its head office in the city of Tiel. The management district covers about 1.470 square km, between the rivers Rhine, Lek and Maas. Approximately 750,000 inhabitants live in the area.

By maintaining and improving 475 km of dikes, the Rivierenland Water Board protects the inhabitants, land, property and animals in its management area against flooding by the rivers, by controlling the supply and discharge of water in the area. A 7000 km long network of canals and water courses, pumping stations and weirs maintains the correct water level in the area behind the river dikes.

The Rivierenland Water Board also monitors and controls the quality of surface water in the area. National legislation requires the water board to prevent pollution of the surface water. The Rivierenland Water Board runs 24 waste water treatment plants, treating the sewage water of all communities in the area. The sewage water system comprises 120 sewage-pumping stations and 360 km of pressure pipelines for transporting the sewage to the waste water treatment plants.

## Tapping band

The Siemens Flow Instruments tapping band is a flexible stainless steel band, which is installed around the pipe in two or more sections. Each section has a specially developed rubber mat bonded to the steel sheet and the transducers are already installed on the sections.

For pipes sized up to DN150, a 1-track version is available, whereas 1- or 2-track tapping band is available for all other sizes.

For pipes sized DN1400 or greater, Siemens Flow Instruments has developed a dual tapping band. This tapping band is divided into two parts, each consisting of several segments, enabling simpler installation.

Not only does the new dual tapping band save installation time, but it is also more cost-effective than the previous type of tapping band.

