

FLUXUS® WD

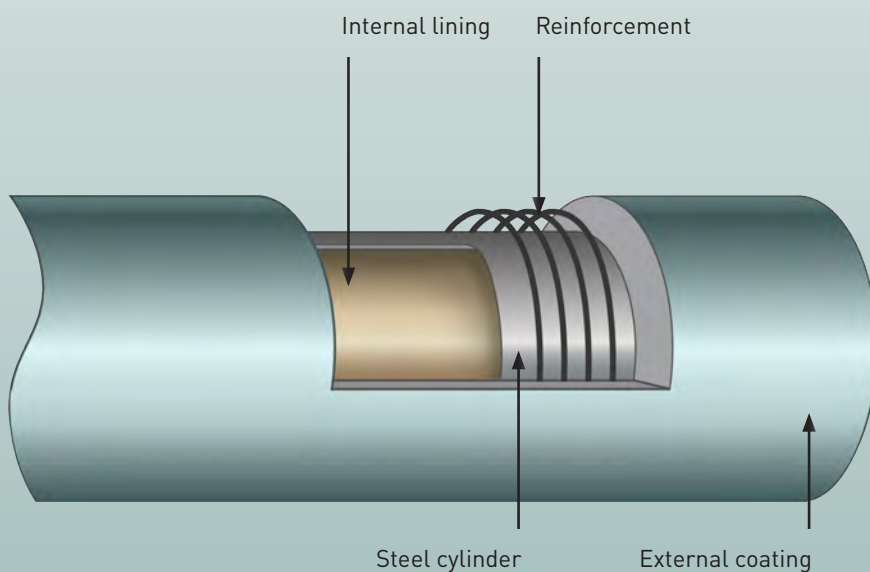
Monitoring flow in Prestressed Concrete Cylinder Pipes (PCCP)

Permanent ultrasonic water flow meter

Extremely powerful ultrasonic transducers for accurate and cost-efficient flow monitoring of PCCP

- No invasive pipe work or supply interruption
- Extremely powerful transducers
- Suitable for higher gas or solid contents
- For detailed technical information on the FLUXUS® WD Series see the product brochure (www.flexim.com)

For monitoring flow in Prestressed Concrete Cylinder Pipes FLEXIM offers two product Series, the FLUXUS® WD for clean water and the for sewage water. These high-performance clamp-on ultrasonic flow meters are capable of penetrating the walls of the most difficult pipes, such as PCCP, and delivering accurate flow data. The non-intrusive technology of FLEXIM is a great advantage for the operator, as there are no negative effects on the integrity of the pipe when installing the flow meter. Other technologies, such as insertion flow meters, require holes to be created in the pipe. This process can damage the structural stability of the pipe, especially if one of the prestressed steel wires is severed in the process.





The challenging structure of PCCP

Prestressed Concrete Cylinder Pipes, sometimes referred to as Bonna pipes, are composed of several layers of different material. The core material of these pipes is concrete, followed by a steel cylinder. The next layer consists of prestressed steel wires that create a consistent compressive pressure. These wires are embedded in a mortar coating that represents the outer material of the pipe.

The complex structure and multi-material buildup of PCCP is a challenge for non-intrusive flow measurement technology. But with extremely powerful clamp-on transducers and advanced evaluation algorithms FLEXIM masters this challenge, delivering accurate and drift-free flow measurement data even on the largest Prestressed Concrete Cylinder Pipes.

Our technological solution

Extreme pipes call for extreme transducers. In order to measure the flow in large PCCP with outer diameters of several meters FLEXIM employs its G Series transducers. The power of these low-frequency and high-amplitude transducers is impressive (and so is their size).

They are capable of sending and receiving signals through the many layers of material encountered in pipes such as PCCP, thereby maintaining sufficient signal quality for exact and reliable flow measurements. Ultrasound signals are sent at 1000 times per second and evaluated by a highly sophisticated digital signal processor that calculates time difference based on cross correlation. This ensures excellent noise suppression and results in high accuracy data, even on difficult pipes.

No zero drift and reliable measurement validation

Data from the FLUXUS® WD Series is very reliable, as its transducers remain drift-free. FLEXIM achieves this by analyzing the characteristics of each individual piezo-transducer and thereafter matching the ideal clamp-on transducer pairs. The perfect acoustic match achieved by this process allows the transducers to remain drift-free after initial factory calibration, which is a crucial advantage over other flow measurement technologies. For more technical details please see the product brochure of the FLUXUS® WD Series.

