



Accurate flow and mass measurement

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Measurement of flowing media containing solids and particles poses a great challenge in the mining industry, due to the damage caused to inline flowmeters. The installation of inline flowmeters can be costly, dangerous (particularly in acid or hydrocarbon plants) and it causes downtime. Thicker pipe walls also require more powerful ultrasonic signal to pass through the pipe walls in order to deliver a reliable reading back to the sensors.

Flexim is the world's leading manufacturer of non-intrusive, ultrasonic flow measurement technology. Its range includes portable and permanent clamp-on flowmeters that measure liquids and gases at a standard accuracy of $\pm 1,6\%$ of reading at $\pm 0,01$ m/s – independent of the pipe size, wall thickness and flow

medium. Clamp-on technology means there is no need to cut into the pipes to install the flowmeter, which ensures safety and uptime of the plant. The flowmeter can be installed while the plant is running.

Furthermore, clamp-on flowmeters offer a much greater service life and require virtually no maintenance compared to in-line flowmeters. In a recent case study by Flexim, an underground copper mine in NSW, Australia had a requirement to measure a flow of paste fill comprising cement, tailings and water. The solids content of this slurry was above 70%, with particle sizes of < 100 μm . An in-line flowmeter would not last long under these circumstances.

Whether measuring liquid, gas, density in chemicals or thermal energy, Flexim will do the job accurately. Density concentration measurement of slurry mediums is an area of expertise unique to Flexim's product offering.

The benefits of using Flexim ultrasonic flowmeters include accuracy, versatility and flexibility.

- *They have a high measuring accuracy, even at low flow velocities, and can detect leaks at flow velocities of 0,01 to 24 m/sec.*
- *They are capable of accurate and reliable measurement even under*

difficult flow conditions due to Hybrid Mode technology that ensures accuracy up to 50%.

- *They can measure a wide variety of pipe materials, from carbon steel, to asbestos cement, to PVC, to bitumen, among others.*
- *They are not prone to clogging or corrosion.*
- *They are independent of entrained solids and gases.*
- *They are independent of pipe size, material pressurisation and the medium.*
- *They are independent of entrained particles or gas bubbles.*
- *There is no need for pipe works.*
- *They operate under a wide range of operating conditions.*