



The Flow Conditioning Device: Installation Point, Mechanism, and Meter Accuracy

Water Flow Innovations
LLC

Flow Conditioning Device (FCD)
waterflowinnovations.com

INSTALLATION POINT & MECHANISM

Installed Just After the Meter — Ahead of Every Validated Process System

The Flow Conditioning Device (FCD) installs between two pipe joints on the main water line immediately after your water meter — ahead of your facility's internal distribution to batch water supply, drum and truck wash-out lines, dust suppression headers, and yard wash-down systems. Each FCD is custom-built to the facility's exact specifications — pipe size, operating water pressure, and existing PRV configuration — and may include an integral check valve depending on the installation requirements. It requires no power and is installed by a licensed plumber or mechanical contractor with water off for approximately one hour.

Mechanically, the FCD creates a slight static back-pressure that extends back through the meter, reducing the air, gas, and turbulence that form during demand events and delivering a laminar-like flow profile through the measurement chamber. Municipal meters register volumetric displacement — entrained air and turbulent flow register as billable volume. Pressure loss through the device is under 0.8 psi across all flow conditions; downstream pressures, temperatures, and flow rates are effectively unchanged. Because the FCD sits just after the meter, it is outside mix designs, water-cement ratios, and batching accuracy — batch water metering at the plant is a separate downstream system and is untouched. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

- ☐ **Cost per yard above plant targets**
Water cost per yard or per load persistently exceeds plant targets.
- ☐ **Spikes on high-volume pour days**
Bills climb disproportionately on heavy pour days beyond proportional batch water.
- ☐ **Wash-out doesn't account for the difference**
Drum wash and rinse volumes don't account for the full gap between metered intake and batch water.
- ☐ **Costs rising faster than production**
Water costs climb faster than yardage year over year.
- ☐ **Pressure drops with simultaneous batches**
Observable supply pressure drops when multiple batches draw simultaneously — the demand events that entrain air at the meter.
- ☐ **Water treated as pass-through cost**
Water is accepted as a pass-through cost rather than a measured, controllable input.

WHERE OVER-READING HITS THE OPERATION

- Cost per Yard & Bid Economics**
Inflated intake flows directly into cost per yard and bid assumptions — billed on both the water and sewer side where sewer applies.
- Batch vs. Intake Reconciliation**
The gap between metered intake and batch water plus wash-out is often over-read volume — correcting the meter closes the reconciliation.
- Mix Quality Unaffected**
Batch water is measured by the plant's own batching system downstream — supply meter correction cannot touch water-cement ratios or slump.
- Multi-Plant Benchmarking**
Plant-to-plant water cost comparisons are distorted when meters over-read differently — correction gives true numbers.

ENGINEERING Q&A

Q: Will the FCD affect batch water quality, water-cement ratios, or slump specifications?

A: No — and this is worth being precise about: batch water is measured by your plant's own batching system, downstream of the municipal meter. The FCD corrects only the municipal meter. Mix designs, ratios, and slump specifications are physically untouched.

Q: Why do bills spike on high-volume pour days?

A: Simultaneous batch draws and wash-out demand create the highest-velocity events of the day at the supply meter — generating air and turbulence billed as volume. The spike exceeds the actual water because part of it never arrived.

Q: How does the FCD affect our sewer or discharge charges?

A: Where sewer charges apply, they're calculated from metered intake. After installation, intake reflects actual consumption, reducing both the water and sewer line items. Wash-out water handling and discharge permits are unaffected.

Q: Can documented savings support sustainability reporting?

A: Yes, as cost documentation. Before-and-after utility bills verify the corrected billing. Because the FCD corrects the meter reading rather than reducing water use, confirm with your sustainability team how to report it for corporate sustainability reporting and customer EPD water data.

Q: How quickly do savings appear?

A: The meter reads accurately immediately after installation. Savings appear on the next full water and sewer billing cycle — no ramp-up period. 90% of installed customers reach full return on investment in under 12 months.

ENGAGEMENT PROCESS — FOUR STEPS

From Analysis to Verified Bill Reduction

1

Free Savings Analysis

We review your water and sewer bills and facility demand profile — no cost, no obligation.

2

Documented Projection

You receive a written savings projection specific to your facility before any commitment.

3

FCD Installation

Licensed plumber or mechanical contractor installs immediately after the meter — water off approximately one hour.

4

Verified Bill Reduction

Before-and-after bill comparison verifies the reduction on your next billing cycles.

GUARANTEE & WARRANTY TERMS

6-Month Money-Back Guarantee

If you're not satisfied within 6 months of installation, the FCD purchase is fully refunded — no questions asked. Installation labor is non-refundable.

Lifetime Transferable Warranty

The FCD carries a lifetime warranty, transferable to the new building owner if the facility changes hands (a transfer fee applies).

DEVICE SPECIFICATIONS

Construction, Certification & Installation

Custom-built to each facility's specifications — pipe size, operating pressure, PRV configuration · 316L stainless steel construction; titanium and specialty alloys available by special order for medical and other specialized applications · Configuration may include an integral check valve per installation requirements · No power required · Under 0.8 psi pressure loss · Certifications: IAPMO, NSF/ANSI/CAN 61, KIWA, GMP, SQF · Installed by licensed plumber or mechanical contractor

Regulatory & Standards References: EPA NPDES · NRMCA Sustainability Initiatives · CDP