



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 let-down and dilution water, tank and tote wash lines, cooling jacket makeup, scrubber and dust collection demand, and general plant supply. 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 batch formulations, mix parameters, and discharge permit conditions — no process change is required. Complete technical documentation is provided to support your internal change control review.

DIAGNOSTIC CHECKLIST — SIX SIGNS YOUR METER IS OVER-READING

☐ **Water cost per batch above targets**

Water and sewer cost per batch persistently exceeds comparables.

☐ **Sewer and surcharges follow the meter**

Sewer volume and pretreatment surcharges billed from metered intake are inflated with the over-read.

☐ **Intake exceeds formulation math**

Metered volume won't reconcile against batch content, wash cycles, and plant demand.

☐ **Audits confirmed usage but no source**

Plant audits confirmed high consumption without finding leaks or a process explanation.

☐ **Pressure swings at wash and let-down**

Tank wash and let-down draw produce observable pressure variability — entrained air registers as billable volume.

☐ **Water treated as cost of production**

Water is carried as a fixed production cost rather than a correctable line item.

WHERE OVER-READING HITS THE OPERATION

Cost per Batch & Plant Economics

Inflated intake flows straight into cost per batch — and because sewer bills key off metered water, every over-read gallon is billed twice.

Wash Water Surcharge Basis

Pretreatment surcharges calculated from metered intake are inflated along with the water bill — correction reduces the billed basis.

Tank Wash Demand Events

High-velocity tank and tote wash cycles between batches create exactly the events that entrain air at the meter — every changeover.

Formulation Water Integrity

Batch water is measured downstream at the mix tank — the FCD corrects the billing meter without touching formulation accuracy.

ENGINEERING Q&A

Q: Will the FCD affect let-down water, wash pressure, or batch formulation?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs immediately after the meter, ahead of plant distribution. Let-down flow, wash pressures, and every formulation parameter are unchanged.

Q: How does the FCD affect sewer charges and surcharges?

A: Sewer charges and most surcharge formulas are calculated from metered intake. When the meter over-reads wash and let-down demand, each line item is inflated. After installation, intake reflects actual consumption, reducing the billed basis.

Q: Does the FCD change anything in our discharge permit obligations?

A: No. The FCD installs just after the meter, ahead of all process systems. Effluent quality, discharge volumes, and 40 CFR Part 446 obligations are unaffected — while corrected intake improves the accuracy of your water balance reporting.

Q: How do I estimate savings for the plant before committing?

A: Use the Water & Sewer Bill Savings Calculator at waterflowinnovations.com for an instant projection, then request the free savings analysis — a documented, plant-specific projection suitable for an operations management package.

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 Effluent Guidelines (40 CFR Part 446 — Paint Formulating) · EPA NPDES · American Coatings Association (ACA)