



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 thaw and wash lines, ice making, flume and conveyance water, sanitation and wash-down, and refrigeration condenser makeup. 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 HACCP plans, sanitation SOPs, 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 pound above benchmarks

Water and sewer cost per pound packed persistently exceeds plant comparables.

☐ Sewer and surcharges track the meter

Sewer and pretreatment surcharges are billed from metered intake — the over-read is charged twice.

☐ Intake exceeds thaw and flume math

Metered volume won't reconcile against thaw lines, flumes, ice, and sanitation demand.

☐ Audits confirmed usage, not the source

Plant audits confirmed high usage without finding leaks or a process cause.

☐ Pressure swings at line startup

Thaw, flume, and wash-down startups produce visible pressure swings — entrained air registers as billable volume.

☐ Water treated as cost of production

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

WHERE OVER-READING HITS THE OPERATION

Cost per Pound & Plant Economics

Inflated intake flows into cost per pound — with sewer and surcharges billed off the same meter, every over-read gallon is billed twice or more.

Surcharge Basis Reduction

BOD and TSS surcharge formulas keyed to metered volume are inflated with the over-read — correction reduces the billed basis.

Thaw & Sanitation Demand Events

Thaw line draw, flume startup, and nightly sanitation create exactly the events that entrain air at the meter — every day.

HACCP & Sanitation Isolation

The FCD installs immediately after the meter, fully outside HACCP control points — meter correction with no effect on food safety.

ENGINEERING Q&A

Q: Will the FCD affect wash pressure, ice production, or any sanitation procedure?

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. Wash pressures, ice making, and every sanitation procedure are unchanged.

Q: Does the FCD touch anything in our HACCP plan?

A: No. The FCD sits on incoming supply at the meter, outside all critical control points and sanitation SOPs. Most plants file it as a main-line plumbing change, supported by our complete technical documentation.

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

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

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 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 408 — Seafood Processing) · FDA HACCP (21 CFR Part 123) · EPA NPDES