



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 log yard sprinklers and wetting, kiln humidification and boiler feed, dust suppression headers, and wash-down demand. 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 kiln schedules, drying parameters, and 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 board foot above targets**

Water and sewer cost per thousand board feet persistently exceeds mill comparables.

☐ **Sewer moves in lockstep with water**

Sewer charges follow the inflated meter reading — the over-read is billed twice.

☐ **Intake exceeds yard and kiln math**

Metered volume won't reconcile against sprinklers, kiln demand, and dust suppression.

☐ **Audits confirmed usage, not the source**

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

☐ **Pressure swings at sprinkler startup**

Log yard sprinkler headers and boiler feed produce visible pressure swings — 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 MBF & Mill Economics

Inflated intake flows into cost per thousand board feet — with sewer billed from the same meter, every over-read gallon is billed twice.

Sprinkler & Kiln Demand Events

Log yard sprinkler startups, kiln humidification, and dust suppression create exactly the events that entrain air at the meter — every shift.

The Audit That Finds Nothing

Mill audits count water that arrives; over-read volume never arrived and is invisible to them — the source is the flow conditions at the meter.

Drying Process Isolation

Kilns and yard systems run downstream of the meter — the FCD corrects billing accuracy with no effect on drying schedules.

ENGINEERING Q&A

Q: Will the FCD affect sprinkler coverage, kiln humidification, or dust suppression?

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 mill distribution. Sprinkler pressure, kiln supply, and other systems are effectively unchanged.

Q: How does the FCD affect sewer charges?

A: Sewer charges are typically calculated from metered intake. When the meter over-reads sprinkler and kiln demand, both charges are inflated. After installation, intake reflects actual consumption, reducing both line items.

Q: Much of our yard water drains to ground — are we paying sewer on it anyway?

A: Often, yes — where sewer is billed from metered intake without a deduct meter, over-read yard demand inflates a sewer bill for water that never reached the drain. Correction reduces the billed basis either way.

Q: How do I estimate savings for the mill 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, mill-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 NPDES · American Wood Council (AWC)