



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 ice machine feed water, water treatment and filtration supply, condenser and cooling makeup, and wash-down lines. 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 ice quality parameters, FSMA food safety plans, and production rates — 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

- ☐ **Cost per ton of ice above targets**
Water cost per ton of ice persistently exceeds plant targets and industry benchmarks.
- ☐ **Intake exceeds product plus purge**
Metered intake significantly exceeds documented water-in-product plus purge volume.
- ☐ **Sewer high relative to drain discharge**
Sewer charges calculated from metered intake outpace actual drain volumes — most of your water leaves as product.
- ☐ **Disproportionate peak-season spikes**
Water costs climb during peak production seasons beyond proportional demand.
- ☐ **Pressure variation as machines cycle**
Observable supply pressure variation when multiple ice machines cycle simultaneously — the demand events that entrain air at the meter.
- ☐ **Water accepted as fixed input**
Water cost is treated as a fixed input with no room for improvement.

WHERE OVER-READING HITS THE OPERATION

- Cost per Ton & Product Margin**
Inflated intake flows directly into cost per ton — when water is your raw material, meter accuracy is margin.
- Product vs. Intake Reconciliation**
Water-in-product plus purge should nearly equal intake — the persistent excess is frequently the over-read itself.
- Sewer Charged on Water That Left as Ice**
Sewer charges calculated from metered intake bill you for water that shipped out as product — over-reading inflates an already mismatched calculation.
- Food Safety Unaffected**
FSMA plans, HACCP documentation, and ice quality parameters are untouched — the FCD sits just after the meter, ahead of all treatment.

ENGINEERING Q&A

Q: Will the FCD affect ice quality, clarity, or production rate?

A: No. Pressure loss through the FCD is under 0.8 psi across all flow conditions, and it installs ahead of your treatment and machine feed systems. Feed water quality, freeze cycle parameters, clarity, and production rates are effectively unchanged.

Q: Why does intake exceed our product-plus-purge accounting?

A: Simultaneous ice machine cycling creates repeated high-velocity demand events at the supply meter — generating air and turbulence billed as volume. In an industry where the water balance should nearly close, the persistent gap is frequently the over-read.

Q: Our water leaves as ice — why is our sewer bill so high?

A: Sewer charges are typically calculated from metered intake, not actual drainage — so you're billed as if product water went down the drain, and over-reading inflates it further. Correcting the meter reduces the volume basis; a sewer deduction review can compound the savings.

Q: Does installation require FSMA or HACCP documentation changes?

A: No. The FCD installs immediately after the municipal meter, ahead of all treatment and product water systems — outside food safety plan scope. Technical documentation is provided for your records.

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: FDA FSMA · HACCP · EPA NPDES · International Packaged Ice Association

FREE SAVINGS ESTIMATE

Instant estimate — takes 30 seconds, no contact info required.

waterflowinnovations.com/water-bill-savings-calculator

Water Flow Innovations LLC

2651 Route 412
Coopersburg, PA 18036
Info@WaterFlowInnovations.com
1-(844)-934-8258

CERTIFICATIONS

IAPMO NSF/ANSI/CAN 61 KIWA GMP SQF

316L Stainless Steel · Made in USA
Under 0.8 psi pressure loss
Lifetime Transferable Warranty