



Better by design

High-performance waterfree urinal technology



Simply Innovative

Every once in awhile, the evolution of technology makes a quantum leap. This is precisely the case with Falcon Waterfree urinals. Forward-thinking technology and design innovation has produced a highly engineered waterfree urinal that is elegantly simple and effective in all aspects.

More than 350,000 Falcon Waterfree urinals are in use in 50+ countries around the world in every type of commercial and institutional facility. Fortune 500 companies including Bank of America, Cisco, Volkswagen, Adobe, Whole Foods, Coca Cola, Toyota, Hilton, Best Buy, McDonald's and countless others have selected Falcon Waterfree to address environmental goals while reducing operating costs.



Ideal for New Construction and Restroom Upgrades

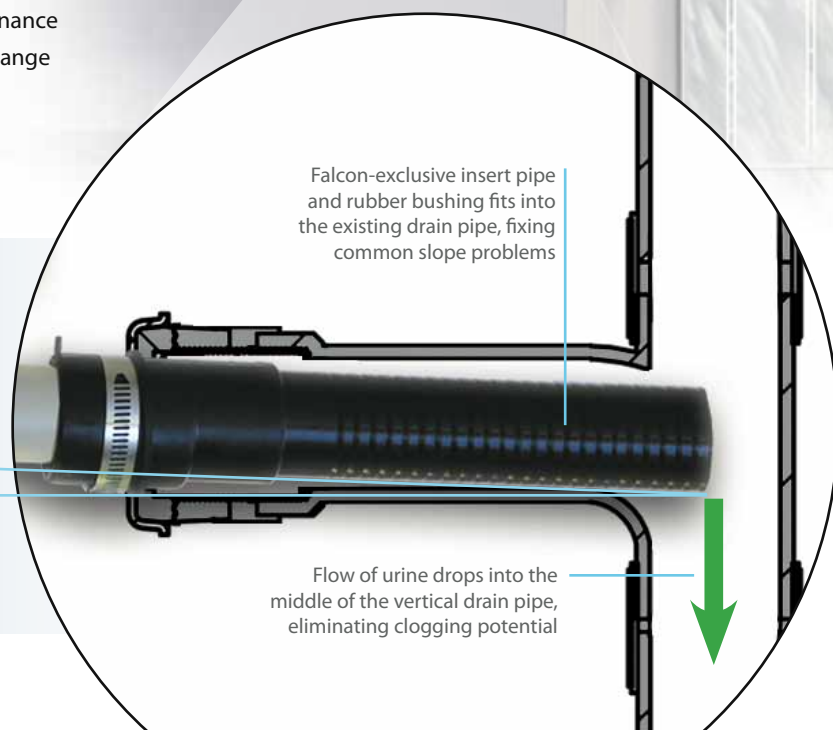
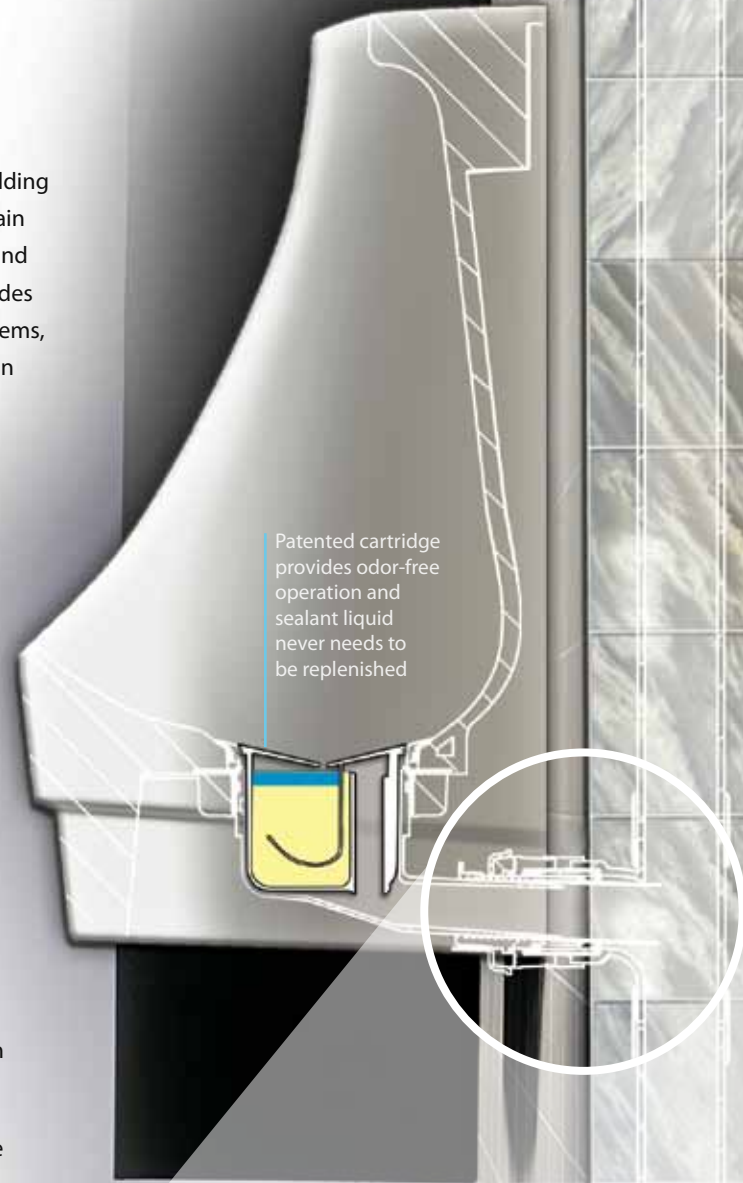
Simply put, Falcon Waterfree urinals are the most practical and efficient urinal available for new construction and restroom upgrades. In new building installations, there is no need to connect to a water supply – only to a drain line. For urinal upgrades, the existing water supply is simply capped off and the waterfree urinal is connected to the drain line. Many restroom upgrades present unique challenges due to wall conditions and old plumbing systems, but the design of the Falcon Waterfree urinal and the adaptive installation hardware easily accommodate all forms of variability.

How it Works

The Falcon Waterfree system consists of vitreous china or stainless steel fixtures with a patented cartridge that locks into the base of the urinal. The design of the urinal bowl and use of nonporous materials ensure that all urine passes into the cartridge. That's all there is – no flush valve assembly, no water supply hookup, and no waste.

The heart of the technology is the cartridge, which provides odor-free operation and easy maintenance. The pleasant-smelling sealant liquid inside the cartridge provides an airtight barrier between the drain and the restroom to prevent odors from escaping. Other types of waterfree urinals require frequent replenishment of costly sealant liquid and regular maintenance that can keep a urinal out of commission for up to 20 minutes. In comparison, the Falcon Waterfree sealant liquid lasts for the life of the cartridge so there is no need to add sealant liquid between cartridge changes plus cartridge replacement takes only a few minutes.

The cartridge also acts as a trap for uric sediment, which could otherwise contribute to drain pipe clogs. This results in a hygienic and odor-free environment, clean pipes, and no water waste. The only maintenance is routine spray-and-wipe cleaning of the fixture and an easy change of the cartridge approximately two to three times per year.



Pipe-in-Pipe Technology - Falcon Waterfree urinals are the only urinals in the world with a universal coupling and housing design that provides downhill slope throughout the system. Pipe-in-pipe technology guarantees excellent flow even when installed in most older horizontal pipe nipples with flat or negative slope. This means that some in-wall plumbing problems are actually corrected by installing Falcon Waterfree urinals.

■ Blueprint for Savings

Using fresh water to dispose of urine, which itself is about 85 percent water, makes no economic sense – particularly in a world faced with a very limited water supply. Falcon Waterfree urinals reduce costs in three key ways:

- 1) **Lower Installation Costs:** Falcon Waterfree urinals are less expensive to purchase and install because they have no flushing mechanism. All that is required are a drain line and time for installation (typically less than an hour per fixture). Costs are even lower in new construction, because no water supply lines are needed.
- 2) **Lower Water/Sewer Costs:** Falcon Waterfree urinals save 100 percent of the water charges and reduces sewer charges, both of which are sure to rise in the future. Waterfree urinals also eliminate the energy costs associated with pumping water to and from the fixture. While ultra low flush urinals may use a little water, they rely on valves that are prone to leaks, wasting tremendous amounts of water and money.
- 3) **Lower Maintenance Costs:** Because Falcon Waterfree urinals have no flush valves, there are no costs to repair stuck or broken valves, and there's no costly cleanup of flooding caused by clogged drains or mischief-makers. Clogs and cleaning are reduced because drain lines remain free of hard-water calcification. Daily maintenance is a quick "spray and wipe" of the urinal.

"No more leaks, no more floods, no more constantly running valves wasting our region's water. Additionally, there have been no adverse effects on our existing plumbing systems. These successful installations in Southern California have led to implementation of these fixtures in our other properties around the country."

Vice President - Engineering,
AEG STAPLES Center and
NOKIA Theatre



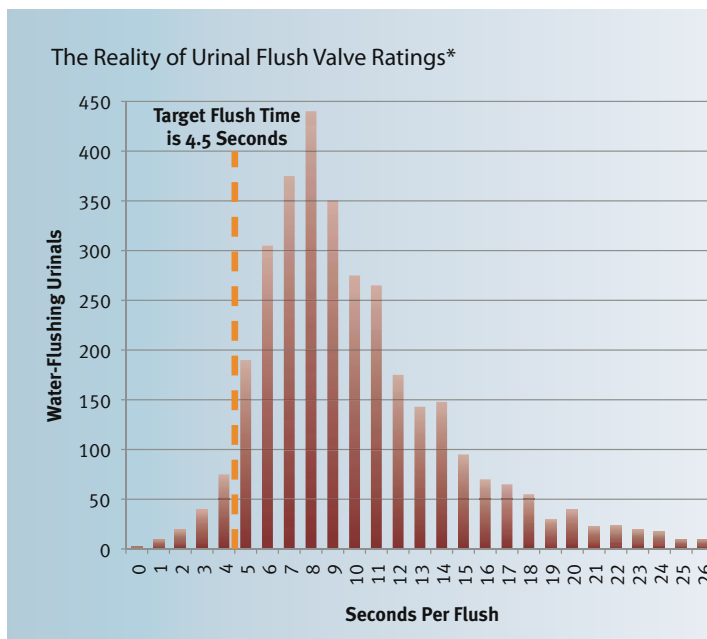
The Falcon Waterfree Life Cycle Cost Analysis considers all factors that determine your payback on upgrading to waterfree urinals. The table below gives three examples that illustrate how the Falcon Waterfree urinal system generates savings. Note that all assumptions are based on conservative estimates. Variables are annual usage, water and sewer rates, and valve replacement/repair costs. Also note that special time payment and rebate programs can result in zero-cost or immediate payback installations, since savings are often greater than monthly payments.

Savings Analysis Assumptions	a	b	c
Total facility population	1,500	3,000	15,000
Percentage of males in population	55%	50%	50%
Number of males	825	1,500	7,500
Number of urinals	33	60	185
Number of uses per day/person	3	3	3
Gallons per flush for old urinals	3	2	1
Water cost per 1,000 gallons	\$2.50	\$3.00	\$3.50
Sewer cost per 1,000 gallons	\$2.50	\$3.00	\$3.50
Operating days	260	300	365
Annual Water Savings (3 uses/day x operating days x number of users x water cost)			
Gallons	1,930,500	2,700,000	8,212,500
Dollars	\$4,826	\$8,100	\$28,744
Annual Sewer Savings (3 uses/day x operating days x number of users x sewer cost)			
Gallons	1,930,500	2,700,000	8,212,500
Dollars	\$4,826	\$8,100	\$28,744
Annual Operating Cost Comparison			
Flush urinal: Maintenance/valve repair (\$75 average per urinal)	\$2,475	\$4,500	\$13,875
Falcon: Replacement cartridges	\$3,218	\$5,850	\$29,250
Estimated Total Annual Savings with Falcon Waterfree Urinals (Water savings + sewer savings + operating savings)			
	\$8,910	\$14,850	\$42,113



“We are not only able to contribute to the long term stewardship of this precious (water) resource; we are also seeing as a return on investment, an average in excess of \$200 annual savings at each of our 125 locations installed to date.

Director Ops, Engineering and Resources, Jack in the Box



Urinal flush valves degrade, leading to excessive flush volumes as reported by Infrastructure Academy in an extensive survey of urinals. The report recommends waterfree urinals because “they never consume any additional water and have been successfully installed in many high-use facilities.”

*Data is based on a 2009 survey by Infrastructure Academy of 3,428 urinals.

Environmental Benefits

Only around 0.3 percent of the water on earth is usable by humans. This emphasizes the importance of eliminating unnecessary water use. Each Falcon Waterfree urinal saves up to 40,000 gallons (151,000 liters) or more of water each year. That is the equivalent of nine tank trucks of water that could be used for more essential purposes.

Plus, with waterfree urinals, water does not have to be pumped to or from the urinal. This saves energy, which in turn reduces carbon dioxide emissions associated with energy production; emissions that contribute to global warming. Calculations by RAND Corporation based on Pacific Institute data report that water-flushing urinals are responsible for 20.7 million tons of CO₂ emissions each year, which can be totally eliminated by converting to waterfree urinals - this savings is the equivalent of annual CO₂ emissions from 3.8 million automobiles.

Earn LEED Points

Falcon Waterfree urinals promote the water conservation goals of the LEED Green Building Rating System. Up to 13% of the points required for LEED-EBOM can be earned by upgrading existing urinals with Falcon Waterfree urinals, more than can be earned with low-flush urinals. Falcon helps architects, engineers, and project managers achieve LEED prerequisites and credits in the following rating systems:

- NC - New Construction and Major Renovations
- EBOM - Existing Buildings Operations & Maintenance
- CI - Commercial Interiors
- CS - Core & Shell
- Schools
- Retail

"As water has become more scarce and costly in our region, the decision to convert (entirely) to waterfree urinals has not only been socially responsible, but fiscally responsible as well. The District has verified an average savings of \$150 per urinal per year when compared to a flush urinal."

Assistant Director of Facilities,
Corona-Norco Unified School
District



"We are looking to expand our implementation nationally as water issues are prevalent in all areas of the United States. We hear positive comments from both our facility managers and our shoppers. Non-water urinals have only positive impacts on our facilities: environmental and resource benefits along with real dollar savings." Falcon is the exclusive waterfree urinal supplier for Westfield in California.

LEED AP Senior Director of
Technical Operations,
Westfield, LLC

Hygienic and Aesthetic Benefits

Falcon Waterfree urinal systems reduce odors and contribute to a cleaner, more sanitary restroom even when compared to ultra low flush urinals. A few facts explain why:

- Urine is essentially odorless. Urine odor primarily results from the reaction of urine with water and air. Without water, the bowl quickly dries between uses and produces no detectable odor. Plus, once urine passes through the sealant liquid in the cartridge, an airtight seal is created between the drain and restroom.
- Dr. Michael R. Hoffman, Professor of Environmental Science and Dean of Graduate Studies at the California Institute of Technology, has concluded that “the dual barrier system provided in the Falcon Waterfree Technologies urinals are predicted to be 500 times more effective against the back-migration of sewer gases as compared to conventional P-trap water barriers.”
- Bacteria and viruses thrive on moist surfaces and the wet surface of a flush urinal is a breeding ground for their growth. Flushing doesn’t kill bacteria and viruses – plus, the flush creates a plume that spreads them to every surface in the restroom.
- Dr. Charles P. Gerba, Professor of Environmental Microbiology at the University of Arizona and leading authority on environmental hygiene explains, “waterfree urinals offer a major improvement in public sanitation. Flushing is eliminated, which greatly reduces the almost continuous production of microbial aerosols, and the surface and sides of urinals are drier, which reduces the survival of human disease-carrying microorganisms and prevents their growth. The flush handle is also eliminated, which would prevent hand-to-flush handle transfer of pathogens from one individual to another during the use of the urinal.”

Combine the findings of these experts with the approval of millions of users around the world. Falcon Waterfree urinals not only make better economic sense, but they also make restrooms safer and more pleasant.





Choosing the Right Urinal

When it comes to urinals, nothing compares to the technological innovation and unsurpassed performance of Falcon Waterfree urinals. Falcon Waterfree urinals offer numerous benefits that will make your job easier and help fulfill your strategic facility plan. With a few facts from you, we can quickly respond with a proposal that includes a customized savings projection. Contact us for your proposal.

	Falcon Waterfree	Manual Flush	Automatic Flush	Other Waterfree Brands
Water Consumption	None.	Up to 40,000 gallons or more per year.	Up to 40,000 gallons or more per year.	None.
Routine Cleaning	Spray and wipe with any recommended cleaner.	Harsh cleaners required for removal of hard water scale.	Harsh cleaners required for removal of hard water scale.	Proprietary cleaners may shorten life of sealant liquid.
Routine Maintenance	Replace cartridge as needed (2-3 times per year, 5 minutes per change).	Repair/replace leaking or broken flush valves (1 hour average per incident).	Replace batteries and calibrate flushes (5-10 minutes). Repair/replace leaking or broken flush valves (1 hour average per incident).	Replenish sealant liquid every 1-2 weeks. Clean all trap seals every 2-4 weeks (up to 20 minutes).
Required Supplies	Replacement cartridge kit (lowest total cost compared to other urinal options).	Valve repair kit. Screens and deodorizer pucks.	Batteries. Valve repair kit. Screens and deodorizer pucks.	Sealant liquid. Replacement cartridge and service tools.
Pipe-in-Pipe Technology	Falcon-exclusive feature. Guarantees good flow and no clogs.	Not available. Lack of downhill slope in urinal system and horizontal pipe nipple may lead to clogs.	Not available. Lack of downhill slope in urinal system and horizontal pipe nipple may lead to clogs.	Not available. Lack of downhill slope in urinal system and horizontal pipe nipple may lead to clogs.
Drain Pipe Maintenance	Soft uric sediment is flushed away during the process of replacing the cartridge.	Hard calcite buildup must be removed with cutting tools, requiring the restroom to be out of service.	Hard calcite buildup must be removed with cutting tools, requiring the restroom to be out of service.	Soft uric sediment is flushed away during the process of replacing the cartridge.
Hygiene	Touchfree operation.	Flush handles convey bacteria. 5-times more bacteria than waterfree urinals. Flush plumes spread bacteria-laden moisture around restroom.	Touchfree operation. 5-times more bacteria than waterfree urinals. Flush plumes spread bacteria-laden moisture around restroom.	Touchfree operation.



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