



PLUMBING SYSTEMS
**AQUAPEX® RECLAIMED
WATER TUBING**

PRODUCT GUIDE

Uponor AquaPEX® Reclaimed Water Tubing for Greywater Systems

Why Greywater Systems?

With our population continuing to grow and our freshwater resources continuing to diminish, greywater systems are a smart plumbing option for homes and businesses.

In a greywater system, water is captured from sinks and showers into a holding tank where it goes through a filtering process. Then, specially designated purple tubing — the industry standard color for reclaimed water systems — distributes the filtered, reclaimed water from the holding tank out to laundry, toilets and irrigation systems.

To help building professionals meet this growing demand for sustainable systems, Uponor offers AquaPEX® Reclaimed Water tubing for greywater systems.

Why AquaPEX Reclaimed Water Tubing?

AquaPEX Reclaimed Water tubing offers all the benefits of Uponor AquaPEX crosslinked polyethylene (PEX-a) tubing that plumbing professionals have come to rely on — flexible, durable, corrosion-resistant, 20-year proven history in plumbing, 25-year limited warranty and one fitting tool without the need for torches, glues, solvents or gauges.

Additionally, using AquaPEX Reclaimed Water tubing in a greywater system can help a home or building earn LEED® or National Green Building Standard™ points. (For further information, refer to www.usgbc.org or www.nahb.org.)

Same System; Additional Benefits

The best part about using Uponor AquaPEX Reclaimed Water tubing for greywater systems is that plumbing professionals don't have to switch products when installing potable plumbing and greywater systems.

Now, plumbers can seamlessly install an entire plumbing system in a home or business using the same tool, the same fitting technology and the same ease of flexibility and design that Uponor PEX-a tubing offers.

Helps Meet Consumer Demand

As more and more home and business owners see the increasing need to conserve water, more and more communities will be looking to greywater systems as the solution. Be ahead of the pack by offering a complete plumbing offering that includes the sustainability benefits that AquaPEX Reclaimed Water tubing provides, for little to no additional cost.*

*See chart on page 2.

Features and Benefits

- Reclaimed water distribution systems can be installed at minimal additional (or sometimes even less) cost than traditional plumbing systems*
- Potentially downsizes water main entering the house
- Helps meet sustainable building code compliancy
- Helps earn LEED® or National Green Building Standard™ points
- Flexible AquaPEX tubing allows up to 40% fewer fittings compared to rigid systems
- PEX-a tubing is highly durable; won't pit, scale or corrode
- Offers a 20-year proven history in plumbing
- Backed by a 25-year limited warranty
- Needs only one fitting tool
- Requires no torches, glues, solvents or gauges

*See chart on page 2.



Reclaimed Water Distribution System Material Cost Comparison

Home Type	Average Square Foot	Reclaimed and Potable Combined			Traditional Potable Water System	Cost Difference
		Reclaimed Components	Potable Components	Total		
Starter	1,631	\$351.66	+ \$820.21	= \$1,171.87	vs. \$1,128.39	\$43.48
Move-up	2,363	\$459.58	+ \$1,267.80	= \$1,727.38	vs. \$1,645.30	\$82.08
Luxury	3,620	\$444.04	+ \$2,396.92	= \$2,840.96	vs. \$2,825.86	\$15.10
Mid-level Luxury	7,522	\$963.84	+ \$3,852.60	= \$4,816.44	vs. \$4,828.03	-\$11.59
Upper-level Luxury	10,215	\$1,203.52	+ \$4,922.53	= \$6,126.05	vs. \$5,795.20	\$330.85

Source: Regional Marketing Assessment, April 2009

Note: Prices shown are an estimate based on material cost only (Uponor list price).

Uponor PEX vs. The Competition

Currently, purple pipe for greywater systems is available in chlorinated polyvinyl chloride (CPVC), polyvinyl chloride (PVC), high-density polyethylene (HDPE) and polypropylene (PP).

- CPVC, PVC and PP are all rigid piping products that require a connection with each change in direction, adding time and costs to installs.
- CPVC and PVC require the use of dangerous, toxic solvents to create a fitting.
- CPVC and PVC can be dry fit, resulting in leaks and blow-offs after the system is in use.
- HDPE and PP require expensive fusion-weld heating tools (at a cost up to \$20,000) and extensive time (up to one hour) to create a complete fitting that can withstand stress.
- Uponor PEX-a tubing is flexible, reducing the number of fittings by up to 40% over rigid systems.
- Uponor ProPEX® fittings use one simple tool — offered in manual, pneumatic, corded or battery-operated — at a relatively inexpensive cost (approximately \$50 to \$5,000).

AquaPEX Reclaimed Water Tubing Product Offering

Part No.	Part Description
F1060502	½" Uponor AquaPEX Reclaimed Water, 300-ft. coil
F1060752	¾" Uponor AquaPEX Reclaimed Water, 300-ft. coil
F1061002	1" Uponor AquaPEX Reclaimed Water, 300-ft. coil



F1060502

F1060752

F1061002

Codes and Standards

Hydrostatic Temperature and Pressure Ratings:

- 200°F at 80 psi (93°C at 5.5 bar)
- 180°F at 100 psi (82°C at 6.9 bar)
- 73.4°F at 160 psi (23°C at 11 bar)

Manufacturing Standards:

- ASTM F876
- ASTM F877
- ASTM F2023
- ASTM F1960
- ASTM E84
- CSA B137.5
- AWWA C904
- ANSI/NSF Standard 14
- CAN/ULC - S102.2

Product Listings:

- NSF-rw
- ITS
- UL

Applicable Codes:

- IPC
- UPC
- NSPC
- NPC of Canada

Fire-rated Assemblies:

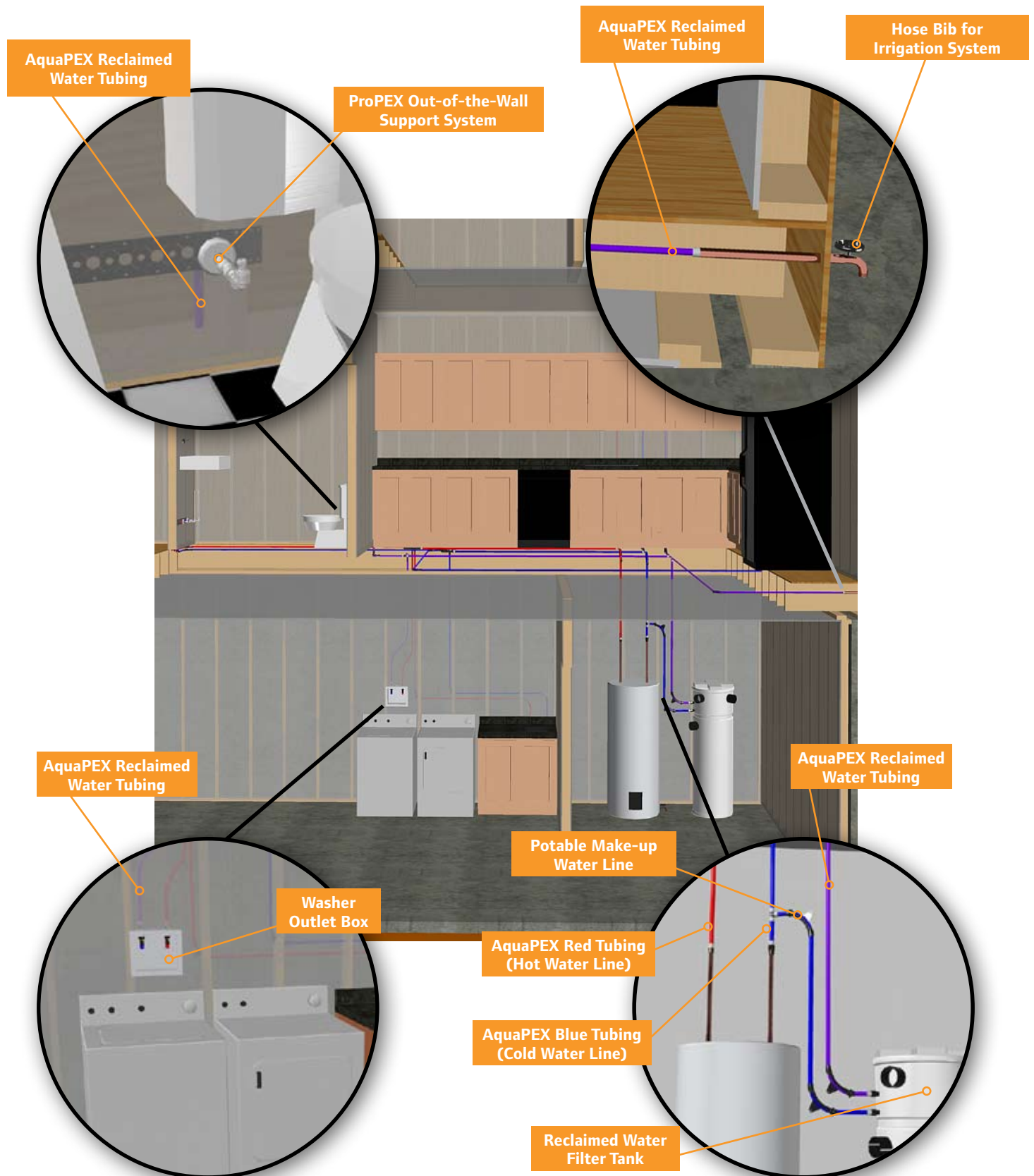
- G573 — Two-hour steel deck floor assembly
- K913 — Two-hour concrete floor/ceiling assembly
- L557 — One-hour wood frame floor/ceiling assembly
- U372 — One-hour wood frame wall assembly
- V444 — One-hour steel stud wall assembly

Warnock Hersey

Plenum Rating:

- 25 flame spread/50 smoke developed (plenum rated) to ASTM E84 and CAN/ULC - S102.2 when insulated with ½" PEX foam insulation

Typical Residential Greywater Distribution System Layout



AquaPEX Reclaimed Water FAQs

How does it work?

In a greywater system, water is captured from sinks and showers into a holding tank where it goes through a filtering process. Then, specially designated purple tubing — the industry standard color for reclaimed water systems — distributes the filtered, reclaimed water from the holding tank out to laundry, toilets and irrigation systems.

What standards does AquaPEX Reclaimed Water tubing meet?

AquaPEX Reclaimed Water tubing is listed to cNSFus-rw and AWWA C904. For the complete listing of all codes, standards, ratings and listings, see page 2 of this product guide.

Why use AquaPEX Reclaimed Water tubing as opposed to alternative offerings?

AquaPEX Reclaimed Water tubing offers all the benefits of Uponor AquaPEX crosslinked polyethylene (PEX-a) tubing that plumbing professionals have come to rely on — flexible, durable, corrosion-resistant,

20-year proven history in plumbing, 25-year limited warranty and one fitting tool without the need for torches, glues, solvents or gauges. Additionally, plumbing professionals don't have to switch products when installing potable plumbing and greywater systems. They can seamlessly move from Uponor AquaPEX for the potable system to Uponor AquaPEX Reclaimed Water for the greywater system, without having to switch tubing, tools or fittings. For additional comparisons with CPVC, PVC, HDPE and PP, see page 2 of this product guide.

What is the cost to add a reclaimed water distribution system?

The cost can vary by region and home size, however, adding a dual potable/reclaimed water plumbing system to a home can add minimal and sometimes even less cost compared to traditional plumbing systems. For an average cost comparison, refer to the chart on page 2.

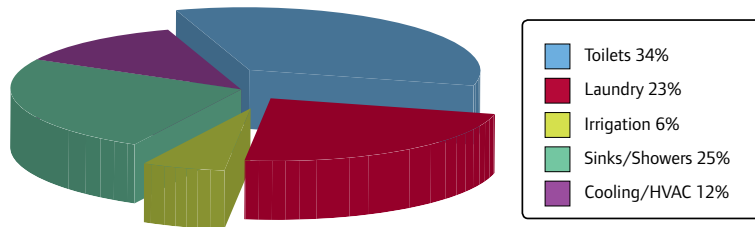
Does a reclaimed water distribution system need a separate storage tank?

It depends on the application. While all reclaimed water systems require a filter tank to capture and sanitize the reclaimed water from sinks and showers, the requirement for a separate storage tank depends on the specific plumbing application, (e.g., house size, number of bathrooms, total water usage, etc.).

Can using AquaPEX Reclaimed Water tubing help meet LEED® or National Green Building Standard™ points?

Depending on your application, using AquaPEX Reclaimed Water tubing in a greywater system can help a home or building earn LEED® or National Green Building Standard™ points. (For further information, refer to www.usgbc.org or www.nahb.org.)

Residential Wastewater Flow Characterization



*Source: Kevin R. Grosskopf, "Sustainable Water Resources and Urban Reuse Technology." M.E. Rinker, Sr. School of Building Construction, University of Florida, Gainesville, Fla.

Reclaimed water systems eliminate approximately **60%** of potable demand (for toilets, laundry and irrigation).*

For more information, visit our websites listed below.

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